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The impact of the internal market by industrial sector: the challenge for the Member States

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The impact of the internal market by industrial sector: the challenge for the Member States

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Abbreviations and symbols used

Countries

В	Belgium
DK	Denmark
D	Federal Republic of Germany
GR	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	The Netherlands
Р	Portugal
UK	United Kingdom
EUR 9	European Community excluding Greece, Spain and Portugal
EUR 10	European Community excluding Spain and Portugal
EUR 12	European Community, 12 Member States

Currencies

ECU	European currency unit
BFR	Belgian franc
DKR	Danish krone
DM	Deutschmark
DR	Greek drachma
ESC	Portuguese escudo
FF	French franc
HFL	Dutch guilder
IRL	Irish pound (punt)
LFR	Luxembourg franc
LIT	Italian lira
PTA	Spanish peseta
UKL	Pound sterling
USD	US dollar
SFR	Swiss franc
YEN	Japanese yen
CAD	Canadian dollar
ÖS	Austrian schilling

Other abbreviations

ACP	African, Caribbean and Pacific countries having signed the Lomé Convention
ECSC	European Coal and Steel Community
EDF	European Development Fund
EIB	European Investment Bank
EMCF	European Monetary Cooperation Fund
EMS	European Monetary System
ERDF	European Regional Development Fund
Euratom	European Atomic Energy Community
Eurostat	Statistical Office of the European Communities
GDP (GNP)	Gross domestic (national) product
GFCF	Gross fixed capital formation
LDCs	Less-developed countries
Mio	Million
Mrd	1 000 million
NCI	New Community Instrument
OCTs	Overseas countries and territories
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PPS	Purchasing power standard
SMEs	Small and medium-sized enterprises
SOEC	Statistical Office of the European Communities
toe	Tonne of oil equivalent
:	Not available

Contents

Foreword	VII
Part A — Summary and main conclusions	1
Part B — The impact of the internal market by industrial sector	9
Part C — National reports	115
Statistical annex (blue pages)	

V

Foreword

The first exercise in economic evaluation of the likely effects of the internal market, the so-called Cecchini Report, made it possible to describe the macroeconomic implications of this integration process. But this report did not aim to analyse the sectoral and national aspects of the single market.

Since then the European economy has once again started to grow at a satisfactory rate. Since 1985 European industrial production has increased by 14%, whereas it remained stagnant between 1979 and 1984. Investment has taken off once again (+43% between 1985 and 1990) and today production capacity utilization rates have returned to levels comparable to those of the early 1970s. This has led to a rate of employment growth unknown since the 1950s. Unemployment had reached 11 % in 1986 but has now fallen to under 9%. This economic recovery in the Community is partly a result of an upturn in the trade cycle and of economic policy changes. But the positive expectations of economic operators about the benefits of the internal market have also contributed to the present climate of growth and will continue to increase the growth prospects through an improvement of the supply-side of the Community economy. At the institutional level, more than 60 % of the measures needed for the completion of the internal market have now been adopted. However, to avoid disappointing the positive expectations of companies, incorporation into national legislation and implementation of the Council's decisions are crucial.

In the light of the changes in the economic environment brought about by the internal market and especially the growth of competition, firms have been led to revise their strategies and to consider the restructuring measures needed in order to improve their position in readiness for 1992. In order to answer questions of this type, it was important to examine the probable structural adjustments in all the industrial sectors which will be most directly affected by 1992 and in all the Member States. This is precisely the aim of the report presented here. This study, carried out by the Commission's departments in collaboration with national experts, therefore represents a response to the preoccupations of businesses and to demands expressed both by the social partners and by the European Parliament.

Firstly, unlike the partial studies on this subject which have previously been published, this report has the advantage of being based on a common analytical framework. Hence it helps to give a much greater coherence to this type of analysis by using a comparable approach for all sectors and countries.

Secondly, this report makes it possible to identify what is at stake for each Member State by means of structural adjustment scenarios. Clearly, the single market has different implications for the more industrialized countries of the Community than for the less-developed Member States. For the former, they mainly involve the ability of firms to become truly European at all levels of management, R&D, production, marketing and distribution. For the lessdeveloped countries, there are in principle two possible directions of change: either through restructuring and modernizing traditional industries where they are presently competitive or through the emergence of new sectors with a higher technological content.

In practice, a country does not adhere to one of the two models proposed here but rather to a combination of these two scenarios.

To stimulate the process of catching-up and convergence, decisions must be taken to implement the measures needed either to encourage the restructuring and modernization of traditional industries or to develop new activities requiring skilled labour. These measures involve various aspects of social and economic life, particularly improving education and training for the active population of these countries.

Finally, this study also shows that the processes under way are very complex and that there are no a priori arguments which would make it possible to identify winners and losers amongst the different regions and sectors. On the contrary, the present favourable climate of growth and the continuing implementation of accompanying Community policies should encourage the convergence between the Member States, a convergence which is all the more necessary in the light of the preparation for economic and monetary union. A strong point of this study is, therefore, that it can help economic operators to prepare themselves as thoroughly as possible for the single market, through improved understanding of the structural changes brought about by this process. In this way, it provides a basis for thinking about the conditions favourable to different options for structural development and hence will serve as a guide for decisionmakers in their choice of policy.

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Part A

Summary and main conclusions

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This study forms a part of the ongoing reports on the 'Cost of non-Europe' and attempts to measure the structural consequences of the completion of the single market on each Member State's manufacturing industry. The objective is:

- (i) to provide, for the first time and following a similar methodology, an evaluation of structural adjustments within all of the industrial sectors affected by 1992 for all the Member States;
- (ii) to discuss the impact of certain Community policies (mainly competition and external trade policies) on the structural adjustment process in Member States.

I — Identification and importance of the sectors most affected by 1992

An initial listing of those sectors most affected by 1992 has been made at the Community level on the basis of a number of structural criteria.¹ This listing led to the selection of 40 industrial sectors out of 120 considered. These 40 sectors where non-tariff barriers impede intra-Community trade represent about 50 % of industrial value added in the Community. They can be classified into four groups according to their level of intra-Community trade and the level of price dispersion that identical products display across Member States:

High-tech public-procurement markets

The presence of multinationals in these industries (telecommunications, computers, medical equipment, etc.) explains the low level of price dispersion and high degree of intra-Community trade that they display. However, extra-Community imports outweigh intra-Community imports and European firms currently suffer a productivity disadvantage when compared with their American and Japanese competitors. Furthermore, these are high-growth markets where R&D expenditure is significant.

Traditional public-procurement and regulated markets

Two subgroups of industries fall under this category. One of these consists of such sectors as energy-generating plant

and railway equipment which are characterized by a low level of intra-Community trade and high levels of intra-Community price dispersion. Each national administration favoured a national champion in the past. A lot of restructuring (mergers, concentration, plant closures) is under way in response to both the potentially significant economies of scale and the currently low levels of capacity utilization.

The other group includes sectors such as shipbuilding and electrical engineering where the level of intra-Community trade is low but in contrast to the preceding group, price dispersion is limited as a consequence of extra-Community imports.

Sectors with moderate non-tariff barriers

This fourth group, which represents nearly one third of manufacturing industry's value added, not only covers massconsumer products (white goods, television, textiles and clothing) but also certain capital goods (machinery) and intermediate goods. These sectors are still affected by technical, administrative or fiscal barriers which continue to limit intra-Community trade and allow for significant price dispersion.

The impact of the creation of the single market should, in general, affect downstream operations (distribution networks) and involve the establishment of Community purchasing centres. Such developments could allow for greater price convergence.

The significance of the sectors affected by 1992

The weight of industrial employment in these 40 sectors listed at the Community level varies between 55% (Germany) and 39% (Spain). In the southern countries these 40 sectors represent a relatively low share of industrial value added: 39% for Spain, 45% for Greece and 48% for Portugal. In effect, in these countries the sectors related to publicprocurement and high-technology markets are almost entirely absent from industrial activity and they are thus less protected than in the northern countries.

In addition, when the national experts were requested to verify the pertinence for their own countries of the list of 40 sectors relevant at the Community level, it was the southern group, and especially Portugal and Greece, but also Spain and Italy which provided the most substantial changes. Among some of these countries, sectors related to textiles and food were added to the list since they are protected by specific barriers (export grants in Greece, tariff barriers or quotas in Portugal). After these modifications, the share of

¹ The principal indicators are the following: the level of non-tariff barriers and the dispersion of prices for identical products between Member States which measure the level of fragmentation of the Community market and the rate of penetration of imports which measures the share of domestic demand accounted for by imports. These indicators were constructed for 120 industrial sectors.

industrial employment for the sectors most affected by 1992 rose for the southern countries, reaching 68% in the case of Portugal, 61,5% in Greece and 48% in the case of Spain.

II — Sectoral specialization and comparative advantages

The lifting of non-tariff barriers by abolishing the current protective mechanisms on national markets could eventually change the pattern of sectoral specialization. By considering all the industrial sectors (120 in total) an analysis of the comparative advantages of Member States reveals certain striking features.

For Germany, its R&D-intensive sectors and those displaying significant economies of scale have strong external performances. Sectors which depend heavily on skilled labour are also characterized by good economic performances.

France has comparative advantages in capital and R&Dintensive sectors, whereas it is weak in unskilled labourintensive industries.

The United Kingdom is characterized by good trade performances in R&D-intensive sectors but has weaknesses in capital-intensive industries.

Italy differs markedly from the previous three countries. Indeed, Italian industry holds a strong position in labourintensive sectors. However, weak trade performances characterize capital-intensive sectors which display economies of scale. The strength of the Italian economy can be credited to fragmented sectors which are dominated by small firms.

Belgium and The Netherlands perform well in capital-intensive sectors and more generally in traditional, heavy industries.

Denmark and Ireland face a comparative disadvantage as far as industries characterized by scale economies are concerned. Ireland, which has a weak position in traditional sectors (textiles, footwear), is well placed in high-tech branches due to the presence of multinationals.¹

Spain presents contrasting performances according to whether one judges its position in relation to Community countries (comparative advantage in labour-intensive sectors) or in relation to the rest of the world (good performances in capital-intensive sectors). Thus, Spain has witnessed industrial growth around sectoral poles such as the automotive and white goods industries.

Portugal and Greece have strong positions in labour-intensive sectors (clothing, footwear). However, these countries are weak performers in R&D-intensive sectors.

Hence, the positioning of Member States in those sectors where there currently exist non-tariff trade barriers is consistent with their comparative advantages according to the evidence at the level of the 120 industrial sectors. The completion of the single market should therefore neither upset the mix of sectoral specializations across Member States nor lead to massive transfers of economic activities between geographic zones.

Nevertheless, certain dynamic adjustments could occur in the medium term and it is worthwhile to sketch here a number of potential evolutionary scenarios whose probability of occurrence will depend on the type of Community policies that will be implemented.

III — Adjustments in the most industrialized Member States

For these countries, economic integration is already well advanced and production methods are similar. The same types of goods but of differing brands or qualities are traded between them (intra-sectoral trade dominates). The nature and quality of infrastructures, training levels and access to funding are relatively comparable. Thus even in some weak sectors of a Member State, there are dynamic firms which can export successfully.

The challenges that such Member States face are therefore not sectoral. Instead the outcome will depend on their firms' potential to adapt to a new type of business environment. Consequently two broad types of strategic responses to the internal market result.

On the one hand, within firms, decisions have to be taken on how to adjust the allocation of resources. Such changes can be witnessed throughout production activities; e.g. geographical widening of potential suppliers, reduction in the number of sites for stocks due to reduced transport costs, creation of new production plants on the markets to be penetrated or reduction of plant numbers to maximize scale economies.

On the other hand, in view of the wider spread of markets, firms' strategies relating to alliances, collaboration or mer-

¹ More than 80% of total employment in these sectors is accounted for by multinational enterprises in Ireland.

gers are being altered. The total number of acquisitions by the largest European industrial firms continues to increase (from 208 in 1984/85 to 492 in 1988/89). Furthermore, since 1987 one can observe an increase in the number of acquisitions including firms in two different Member States and these Community deals are also increasing in size. Finally, mergers and takeovers are preferred to minority acquisitions and joint ventures.

This dual strategic reaction accompanies a growing movement of firms towards internationalization. Thus, econometric studies have clearly demonstrated that the completion of the single market should enhance the average size of firms and allow them to internationalize their operations. Indeed, the single market implies a direct presence of firms within a large number of Member States. This presence can be achieved via acquisitions or greenfield investments. A review of recent developments in the field of direct investments and transfrontier acquisitions yields the following features.

A comparison between Member States' stocks of foreign direct investments yields notable differences which result in variations of the degree of internationalization of European firms. The stock of foreign direct investment as a proportion of GDP is 23 % in the United Kingdom, 36 % in the Netherlands, 7 % in Germany and France and 4 % in Italy.

As far as acquisitions of companies are concerned, recent data show that British firms are the most active in this field, accounting for 60% of the total of transfrontier acquisitions. The British are followed by the French (23,2%), Dutch (5,5%), Germans (3,5%) and Italians (3,5%). A similar ranking can be drawn for target firms.

These differences in strategic behaviour can be firstly explained by noticeable structural factors. For example, the size of domestic stock markets plays an important role with British firms accounting for 40 % of total Community stock market value.

Yet the completion of the integrated single market depends on the determination of firms to adopt European strategies, i.e. to extend their activities across the single market when such a move is justified in economic terms without creating dominant positions which would be harmful to a healthy competitive environment. Such a development presumes that obstacles to intra-EC transfrontier deals will be lifted. Thus national legislation on corporate taxes should treat national and transfrontier operations equally whereas at present the latter may be penalized *vis-à-vis* the former. In certain Member States hindrances on public share offers would also need to be removed since they practically prevent all such operations, whereas other Member States are very open to acquisitions by foreign firms. In the long term, two scenarios might be envisaged.

The Europeanization of firms: This scenario assumes that the necessary measures to perfect the single market are taken, i.e. measures which will allow firms from one Member State to operate in another with the same rights and obligations that they face on their domestic market will be implemented. This also implies the lifting of barriers to forming true European firms with regard to such factors as capitalization, operational management or in terms of the nationality of their directors. Efforts to enhance labour mobility and to remove legal and fiscal obstacles are necessary conditions for the success of this scenario.

National champions: In this scenario, Member States could try and outbid each other in a beggar-thy-neighbour process by protecting their firms from takeover bids which they can make in other countries, or by providing fiscal incentives or significant financial aids in order to attract foreign direct investment, or, finally, by only opening public procurement markets to foreign suppliers in a limited manner.

Obviously for the sake of clarity these two scenarios are extremes but in order to make the first scenario effective and successful there will need to be a political will to implement accompanying policies to the single market programme (in the fiscal, social and competition fields).

The observed adjustments in the northern countries suggest the second scenario is not impossible. In some recent examples, public authorities have shown a tendency to favour partnerships between national firms such that these can reach the critical size to be able to match firms in other Member States. The preference for a national approach could work against the Community interest.

In fact, despite the growth of acquisitions involving companies from two different Member States, producers with comparable market shares in each of the Member States are few. Even in the sectors which have been traditionally open such as the automotive industry, firms until now have had significant domestic market shares and more or less marginal shares in the other Member States.

In order to encourage the Europeanization of firms and thus to assure an optimal distribution of firms on the Community market, the Commission has already drafted three proposals attempting to lift the fiscal obstacles to transfrontier operations. In effect, the directives on mergers, parent companies and subsidiaries, and arbitration procedures aim to abolish differences in the fiscal treatment of the national and international operations of firms. With the same aim, the Commission intends to oppose all regulatory barriers against public share offers and share swaps which continue to exist in certain Member States. The regulation on the control of Community mergers has also been adopted. It will avoid the establishment of monopoly positions which would be against consumers' interests.

At the level of the Commission there is a political will to implement measures which will favour the realization of the first scenario. Beyond this, it is equally important for firms to accept having non-national representation at board level and that managerial mobility, in the geographic sense, become a reality. These conditions are also of critical importance if true European firms are to be created.

IV — Adjustment paths for the least developed Member States of the Community

Two adjustment scenarios can be postulated for the lessdeveloped countries of the Community: the first is of an inter-industry nature where they increase their specialization in those sectors where they currently enjoy comparative advantages and the second is an intra-industry scenario where the structure of industrial production converges towards that found in the more developed countries of the Community. Of course, a host of combinations of these two scenarios can be foreseen. Indeed, a country will not wholly adhere to one or other of the models presented below, but overall the form of industrial development that will ensue will be close to one or other of the two possibilities.

Inter-industry scenario

In the first scenario, the removal of non-tariff barriers allows the southern countries to increase the level of their Community exports of those products in which they currently have a comparative advantage, i.e. labour-intensive sectors such as clothing and footwear. This would result in an increase in the level of inter-industry specialization of these countries. This process would be reinforced by relocation of manufacturing investment away from the north towards the southern States. Indeed, surveys of European companies have demonstrated that such relocalization would only affect a limited number of sectors but that they would be particularly relevant for traditional industries where labour costs account for a large proportion of total production costs (IFO survey of German firms).

Studies have demonstrated that this first scenario could potentially provide significant gains to the southern States

(+ 0.5% GNP growth in the case of increased exports of clothing and footwear) but it also carries significant risks. Thus, under this first scenario, the southern States become further specialized in low demand growth industries whose markets are facing increasing competition from developing countries.

Another strategy open to the relevant Member States under this scenario consists of increasing product quality in traditional sectors (upgrading). Italian success in the footwear and quality clothing industries demonstrates this development path. Similarly, in Portugal and Spain one can observe a modernization of traditional industries such as footwear and clothing. The aim here is develop non-cost competitive factors such as quality, design and brands and to produce more sophisticated products in order to compete with producers from less-developed countries. For this scenario to occur it will require a strengthening of management skills, improving professional training and the modernization of productive capital.

Intra-industry scenario

Under the second scenario, it is assumed that the southern States will progressively transform their current industrial specialization patterns notably by seeking to strengthen their positions in high-tech industries where higher rates of demand growth can be expected. Under this scenario, there would be a reduction in inter-industry specialization in the southern States in those sectors where they have comparative advantages and an improvement of their performances in sectors where they have traditionally been net importers. This dual evolution would correspond with an increase of their level of intra-industry trade with the rest of the Community.

This second scenario is drawn from the recent export performances of the southern States. In effect, on the one hand one can observe a deterioration of exports on both intraand extra-EC markets of traditional industry products such as clothing, footwear and textiles whereas, on the other, there has been an improvement in their competitive position in those sectors with greater technology content such as domestic electrical appliances. The declining export performances of the traditionally strong sectors of the southern States can be explained by the sharp increase in extra-EC imports emanating from the less-developed countries.

The relocation of EC investment can encourage this restructuring process by introducing more modern production processes and by contributing to the increased specialization of southern countries on niche markets with higher technological content. Indeed such investment often entails technology transfer and an improvement in human capital.

Observed adjustment paths

Analysis of observed adjustment paths (national and foreign investment trends and corporate strategies) makes it possible to identify each southern country in one of the two scenarios. Thus between 1985 and 1989 the rate of investment was very significant in Spain and Portugal. During these four years, the volume of manufacturing investment rose by 79% in Spain and 43% in Portugal. In contrast, it fell by 18% in Greece over the same period. This helps to explain the near stagnation in growth of industrial production in Greece between 1988 and 1989 (6%) compared to the 17% increase in Spain and 19,5% rise in Portugal.

Greece can also be distinguished from the other two southern States in terms of the growth of foreign investment flows. Thus the level of the latter in Greece has stabilized over the last three years whereas it has increased by a phenomenal amount in Spain and Portugal (by approximately 200 to 300%). Consequently, whilst national and foreign investment have been helping Spanish and Portuguese industries to restructure, there has been no such impetus in Greece.

In Spain, 35% of manufacturing investment is accounted for by foreign-owned firms. Foreign direct investment tends to be centred on high demand growth sectors (computers, electronics, pharmaceuticals). Thus, between 1986-89, 88% of the investment in these sectors originated from foreignowned firms whereas in low demand growth sectors the corresponding percentage was only 11%. In Spain, foreign direct investment should therefore aid the progression of activities with a higher technology content in the framework of an intra-industry development scenario. The reactions of Portuguese and Spanish entrepreneurs in the context of 1992 are significantly different. Firstly, their priorities are not the same. Portuguese industrialists focus on production strategies whilst the Spanish emphasize the need to differentiate products. Next, Portuguese businessmen are more reticent than Spanish entrepreneurs about collaborating with their European partners, be it in the fields of distribution or R&D. In effect, they initially wish to strengthen their market position by reorganizing their production operations. Nevertheless, technological agreements between national and foreign firms are encouraged in developing Portuguese sectors. Another strategy consists of developing very specialized national small and medium-sized enterprises to supply foreign multinational subsidiaries.

Two Community policies, external trade policy and the structural Funds, can influence the adjustment paths of the southern States.

Thus, continued protection vis-à-vis less-developed countries could incite these countries to keep a specialized inter-industry structure. In contrast, a greater opening of the Community market would lead these countries to focus their specialization on growth sectors. In the short term, the first scenario (inter-industry development) requires less effort and carries lower adjustment costs for the southern States but in the medium to long term, it is questionable whether the second scenario would not be more effective in allowing these countries to catch up, notably by allowing for greater technology transfer as well as an improvement in the level of human capital. Regardless of which scenario is chosen the structural Funds must be used to reduce adjustment costs, but their role will differ according to the selected path.



Part B

The impact of the internal market by industrial sector

Contents

1.	Manufacturing industry in the Member States	19
1.1.	The share of manufacturing industry in the economy of the Member States remains limited	19
1.2.	but industrial products account for a major share of exports of goods and services	19
1.3.	Significant differences between Member States	19
2.	Identification of the sectors most affected by 1992	21
2.1.	Sectors identified at Community level	21
	<i>Box</i> : Criteria adopted for identifying at Community level those sectors most affected by the single market	21
	Box. Method of identification at national level	25
2.2.	Sectors identified at national level	27
3.	Share of the sectors most affected by 1992	27
3.1.	The 40 sectors identified at Community level	27
3.2.	Sectors with high non-tariff barriers	29
3.3.	The share of sectors identified at national level	30
4.	The static performances of Member States in the sectors most affected by 1992	30
	Box: An analytical approach	32
4.1.	Profile of performances in each Member State	33
4.2.	Global performances	38
4.3.	Limitations of the approach based on global performances	38
5.	Comparative advantages and intra-industry trade in the EC	38
5.1.	European integration and the nature of intra-Community trade	38
5.2.	Measurement of intra-industry trade	40
5.3.	Factors explaining intra-industry trade	41
5.4.	Industries where intra-Community trade is of inter-industry nature	41
5.5.	Industries where intra-Community trade is of intra-industry nature	43
6.	Performances of the Member States and comparative advantages	43
6.1.	Performances of the Member States: sectoral similarities	44
		11

6.2.	Factors determining trade	45
	Box: Presentation of estimated models	46
6.3.	Comparative advantages in the 40 sectors	50
7.	Adjustments in the most industrialized Member States	51
7 1	Sectoral performances and corporate competitiveness	51
7.2	Internal strategies implemented by firms	52
1.2.	Bow Internal strategies implemented by innis	54
	firms	54
7.3.	External strategies and company size	56
7.4.	Growth of merger operations within European industry	57
	Box: External strategies — Results of the survey among firms	61
7.5.	External growth policies within the Member States	64
7.6.	Fragmentation of EC stock markets	66
7.7.	Obstacles to the development of transnational operations in the European Community	68
7.7.1.	Fiscal barriers to transfrontier operations	69
7.7.2.	Regulatory and legal barriers	69
7.7.3.	Two scenarios in the Europeanization of enterprises	69
8.	Medium-term adjustments in the southern Member States	70
8. 8.1.	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries	70 70
8. 8.1. 8.1.1.	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances	70 70 71
 8.1. 8.1.1. 8.1.2. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances	70 70 71 73
 8.1. 8.1.1. 8.1.2. 8.2. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment	70 70 71 73 76
 8.1. 8.1.1. 8.1.2. 8.2. 8.2.1. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario	70 70 71 73 76 76
 8. 8.1. 8.1.1. 8.1.2. 8.2. 8.2.1. 8.2.2. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario	70 70 71 73 76 76 76 78
 8. 8.1. 8.1.1. 8.1.2. 8.2. 8.2.1. 8.2.2. 8.3. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario Inherent risks and advantages of these two scenarios	70 70 71 73 76 76 78 78 79
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.1. 8.2.2. 8.3. 8.4. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario Inherent risks and advantages of these two scenarios The dynamic adjustments observed	70 70 71 73 76 76 76 78 79 81
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario Inherent risks and advantages of these two scenarios The dynamic adjustment Direct foreign investment	70 70 71 73 76 76 78 79 81 81
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario Inherent risks and advantages of these two scenarios The dynamic adjustment Direct foreign investment Strategies of firms	70 70 71 73 76 76 76 78 79 81 81 81
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 	Medium-term adjustments in the southern Member States Heterogeneity of the least developed EC countries Macroeconomic performances External performances Two scenarios of dynamic adjustment Inter-industry scenario Intra-industry scenario Inherent risks and advantages of these two scenarios The dynamic adjustments observed Direct foreign investment Strategies of firms Box : Expectations of the internal market in the southern Member States — Results of the survey among European firms	70 70 71 73 76 76 76 78 79 81 81 85 86
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 9. 	Medium-term adjustments in the southern Member StatesHeterogeneity of the least developed EC countriesMacroeconomic performancesExternal performancesTwo scenarios of dynamic adjustmentInter-industry scenarioIntra-industry scenarioInherent risks and advantages of these two scenariosThe dynamic adjustment observedDirect foreign investmentStrategies of firmsBox: Expectations of the internal market in the southern MemberStates — Results of the survey among European firmsQualifications and training in support of the adjustment processes	70 70 71 73 76 76 78 79 81 81 85 86 89
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 9.1. 	Medium-term adjustments in the southern Member StatesHeterogeneity of the least developed EC countriesMacroeconomic performancesExternal performancesExternal performancesTwo scenarios of dynamic adjustmentInter-industry scenarioIntra-industry scenarioInherent risks and advantages of these two scenariosThe dynamic adjustments observedDirect foreign investmentStrategies of firmsBox : Expectations of the internal market in the southern MemberStates — Results of the survey among European firmsQualifications and training in support of the adjustment processesCompetitive positions, strategies and employment redistribution	70 70 71 73 76 76 78 79 81 81 81 85 86 89
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 9.1. 9.1.1. 	Medium-term adjustments in the southern Member StatesHeterogeneity of the least developed EC countriesMacroeconomic performancesExternal performancesExternal performancesTwo scenarios of dynamic adjustmentInter-industry scenarioIntra-industry scenarioInherent risks and advantages of these two scenariosThe dynamic adjustments observedDirect foreign investmentStrategies of firmsBox: Expectations of the internal market in the southern MemberStates — Results of the survey among European firmsQualifications and training in support of the adjustment processesCompetitive positions, strategies and employment redistributionIn the high-technology public procurement sectors	70 70 71 73 76 76 78 79 81 81 81 85 86 89 89 90
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 9.1. 9.1.1. 9.1.2. 	Medium-term adjustments in the southern Member StatesHeterogeneity of the least developed EC countriesMacroeconomic performancesExternal performancesExternal performancesTwo scenarios of dynamic adjustmentInter-industry scenarioIntra-industry scenarioInherent risks and advantages of these two scenariosThe dynamic adjustments observedDirect foreign investmentStrategies of firmsBox: Expectations of the internal market in the southern MemberStates — Results of the survey among European firmsQualifications and training in support of the adjustment processesCompetitive positions, strategies and employment redistributionIn the high-technology public procurement sectorsIn the traditional public-procurement and regulated markets	70 70 71 73 76 76 78 79 81 81 85 86 89 89 89 90 91
 8. 8.1. 8.1.1. 8.1.2. 8.2.1. 8.2.2. 8.3. 8.4. 8.4.1. 8.4.2. 9.1. 9.1.1. 9.1.2. 9.1.3. 	Medium-term adjustments in the southern Member StatesHeterogeneity of the least developed EC countriesMacroeconomic performancesExternal performancesExternal performancesTwo scenarios of dynamic adjustmentInter-industry scenarioIntra-industry scenarioInherent risks and advantages of these two scenariosThe dynamic adjustments observedDirect foreign investmentStrategies of firmsBox : Expectations of the internal market in the southern MemberStates — Results of the survey among European firmsQualifications and training in support of the adjustment processesCompetitive positions, strategies and employment redistributionIn the high-technology public procurement sectorsIn the traditional public-procurement and regulated marketsIn sectors with moderate non-tariff barriers	70 70 71 73 76 76 78 79 81 81 81 85 86 89 89 90 91 91

9.3.	Improved specialization	93
9.3.1.	Illicit work in industry and the prospect of the internal market	93
9.3.2.	Labour costs as a competitive factor, and the fear of social dumping	93
	<i>Box</i> : Wage costs as a factor of competitiveness: the case of two sectors sensitive to the completion of the single market: the textile and motor vehicle industries	94
9.3.3.	Qualifications and training	99
9.4.	Real convergence and virtuous interactions	101
9.5.	A forecast of the impact of the internal market on industrial employment	102
Annex	es	
1.	Sensitive sectors added to or removed from the list of 40 sectors by some countries	105
2.	External performances, demand trends and price competitiveness	107
3.	Results of the estimated models (1) and (2) presented in Box 4	109
4.	Classification of the 40 sectors according to their structural characteristics	110
Riblio	zranhv	111

List of tables

1.1.	Weight of manufacturing industry in GDP (except energy and construction) at current prices, in $\%$	19
2.1.	The industrial sectors most affected by the internal market — Community as a whole	24
2.2.	Major changes to the list of 40 sectors (Greece and Portugal)	26
3.1.	Weight of the 40 identified sectors at Community level	27
3.2.	Weight of the sectors identified at national level	30
5.1.	Share of intra-industry trade in intra-Community trade	41
6.1.	Estimates from equation (3)	47
6.2.	Factors explaining EC trade patterns of the four southern countries	49
6.3.	Comparative advantages and disadvantages of each Member State — Synthesis of the empirical analysis	49
6.4.	Comparative advantages of each Member State in the 40 sectors — Relative export/import ratio in the five groups	51
7.1.	Size of firms in the 40 sectors — Number of employees per firm in the period 1983-87 $$	58
7.2.	Mergers and acquisitions by nationality of the firms involved	59
7.3.	Mergers and acquisitions by size of the firms involved (cumulative turnover)	60
7.4.	Stock of foreign investment	64
7.5.	Acquisitions by firms (September 1988-September 1989)	65
7.6.	Sales of firms (September 1988-September 1989)	65
7.7.	Direct flow of investment in billions of ecus between Member States, 1975-83	66
7.8.	Enterprises quoted on the stock exchange - 1988	67
7.9.	Domestic enterprises quoted on the stock exchange - 1988	67
8.1.	Sectors most affected by 1992 where the share of intra-industry trade is high	75
8.2.	Strong sectors in the four least developed EC countries	75
8.3.	Sectors of the Irish manufacturing industry dominated by multi- national firms	76
8.4.	Average gross hourly earnings of workers and hourly labour cost (workers and employees) in industry	77
8.5.	Unit labour costs — 1989	77
8.6.	Trends in the external performances of the southern Member States	78
8.7.	Trends in the export/import ratio of labour-intensive industries	79

8.8	 Sectoral breakdown of foreign direct investment flow in Spanish manufacturing industry and contribution of these foreign invest- ments to total investments made in each sector — 1986-88 	84
8.9	 Comparison of performance of sectors which are the main benefici- aries of foreign direct investment with those of the rest of manufac- turing industry 	85
8.	10. Breakdown of Japanese companies in the southern Member States at 31 January 1989	85
9.	1. From intra-Community specialization scenarios to labour-skill scenarios for the Community	92
9.2	2. Labour costs and unit labour costs in the Member States	98
9.:	3. Structure of qualifications by sector (in %)	100
9.4	Level of skills in the sensitive industries in the United Kingdom	100
9.:	5 Level of education of the population aged 20 and over	101

List of tables in boxes

B .1.	Price dispersion: national and Community level	22
B .2.	Composite performance indicator for each country	33
B .3.	Historical evolution of the performances	33
B.4.	Influence of the completion of the internal market on the strategies of industrial firms	55
B .5.	Influence of the completion of the internal market on the strategies of industrial firms (net balance between positive and negative impacts)	56
B .6.	Influence of the completion of the internal market on the external strategies of firms	62
B .7.	Weight of labour expenditure supported by industrial firms, 1987 (in % of turnover)	94
B .8.	Number of women as a % of all manual and non-manual workers, 1984	94
B .9.	Textile and motor vehicle industries: weight of external purchases, 1987 (in % of turnover)	96
B .10.	Trends in labour-related costs relative to trends in the value added/ turnover ratio	97
B .11.	Relative position of textile industries compared to national industries in general	97

List of graphs

1.1.	Share of industrial products in total exports of goods — Intra-Community trade	20
1.2.	Indices of manufacturing investment in volume terms $(1985 = 100)$	20
2.1.	The industrial sectors most affected by the internal market	23
3.1.	Comparison of the weight of the 40 sectors in terms of industrial value added and employment levels	28
3.2.	Weight of the sectors with high non-tariff barriers in the 40 sensitive sectors	29
3.3.	Comparison of the weight of the 40 sectors and those identified at the national level	31
4.1.	Distribution of industrial employment relative to the performance of the sectors most affected by 19924.1.1. United Kingdom4.1.2. France	34 34 34
	4.1.3. Belgium	34
	4.1.4. Spain	35
	4.1.5. FR of Germany	35
	4.1.6. Italy	35
	4.1.7. The Netherlands	36
	4.1.8. Denmark	36
	4.1.9. Ireland	36
	4.1.10. Portugal	37
	4.1.11. Greece	37
4.2.	Position of countries in the run-up to 1992 — Share in industrial employment	39
5.1.	Industries in which intra-EC trade is of an inter-industry nature	42
5.2.	Industries in which intra-EC trade is of an intra-industry nature	43
6.1.	The Member States' performances in the 40 sectors — Results of the principal components analysis of the composite indicators	45
7.1.	Impact of the removal of non-tariff barriers on the value-added chain	52
7.2.	Number of mergers/takeovers undertaken by the 1 000 largest European industrial firms	59
7.3.	Breakdown of mergers by size of firms	60
7.4.	Number of takeovers, acquisitions of minority holdings and new jointly-owned subsidiaries (situation for the 1 000 largest European	
	industrial firms)	61
8.1.	Trend in GDP per head in the four least developed EC countries	71

8.2.	GDP indices at constant prices $(1985 = 100)$	72
8.3.	Investment indices in volume terms for manufacturing industry $(1985 = 100)$	72
8.4.	Balance of trade in % of GDP	73
8.5.	Extra-EC import penetration in the textile industry	80
8.6.	Evolution of foreign direct investment flows in southern countries	82
8.7.	Contribution of foreign investment to GDP in 1984 and 1988	83
8.8.	Geographical distribution of foreign investment flows during the period 1986-88	83
9.1.	Internal market strategies, employment redistribution and training requirements	90
9.2.	Virtuous interactions between quality specialization and the quality of labour	102
9.3.	Analytical model of trends in competitiveness and employment	103

List of graphs in boxes

B .1.	Acquisitions and jointly owned subsidiaries (EUR 12)	63
B .2.	Impact of the internal market on investment in industry	86
B .3.	Impact of the internal market on the internal strategies of firms	87
B .4.	Impact of the internal market on internal strategies	88
B .5.	Trends in labour costs	95

1. Manufacturing industry in the Member States

The purpose of this section is to briefly present an overall picture of manufacturing industry in the economy of the Member States and the recent trends with reference to which prospects for the development of the internal market should be seen.

1.1. The share of manufacturing industry in the economy of the Member States remains limited ...

Industry will be defined here as activities concerning the production of manufactured goods only, that is, excluding activities related to energy and construction. Considered as such, industry represents between 15 % of GDP at current prices in Greece and 30 % of GDP in Germany (Table 1.1). It is interesting to note that in the southern countries (Italy, Spain and Portugal) the share of industry in GDP is above the Community average. In this respect, Greece is, therefore, an exception.

1.2. ... but industrial products account for a major share of exports of goods and services

Although the share of industry in GDP remains limited overall-approximately one third at the most-industrial

Table 1.1

Weight of manufacturing industry in GDP (except energy and construction) at current prices, in %

Most recent year available1

BLEU	DK	D	GR	E	F	IRL	I	NL	Р	UK
21	17	30	15	24	20	23	23	19	27	23
¹ 1986 or 1987. Source: National accounts disaggregated by branch.										

products account for a considerable share of intra-Community exports of goods, ranging from 73 % in the case of Greece to 97 % for Germany (Graph 1.1). Goods other than manufactured goods (energy, agriculture) therefore represent, as a Community average, approximately 15 % of intra-Community trade. Trade in manufactured products is clearly central to trade in goods between the Member States.

If the analysis is now extended to services, we see that services account for some 20 % of total trade in goods and services between industrialized countries and that this share has remained more or less stable. The greater part of economic trade in goods and services between Member States therefore involves manufactured goods which represent almost 70 % of total trade.

1.3. Significant differences between Member States

Firstly, we must stress the importance of certain countries within the Community industrial fabric. German industry alone accounts for almost 25 % of the value added of Com-

munity industry as a whole (EUR 12). If this is combined with French, British and Italian industry, each with just under 20 %, we find that the four major countries account for almost 80 % of total Community industry.

Industrial production in the Community fell sharply between the first oil crisis and 1985, since which time it has made a marked recovery (see statistical annex). This stagnation and decline in industrial production between 1980 and 1984 affected virtually all the Community countries, with the exception of Denmark and Ireland which escaped any slowing down of the economy. The economic recovery of the years 1985 to 1989 did, however, affect all the Member States.

The volume of industrial production increased by 13 % in the Community between 1985 and 1989, with Portugal, Spain and Ireland experiencing the highest growth rates (+20%, +17% and +40% respectively). By contrast, Greece and the United Kingdom experienced a growth rate below the Community average $(+6\% \text{ and } +9,4\% \text{ respect$ $ively})$.





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This vigorous recovery of industrial production since 1985 has occurred against a background in which investment has been the most dynamic component of demand in the Community.

Surveys conducted among Community firms show that, between 1985 and 1989, the volume of investment in manufacturing industry increased by 106 % in Ireland, 79 % in Spain and 43 % in Portugal. By contrast, Greece experienced the most unfavourable trend (-18 %) (see statistical annex).

The major Community countries have experienced trends around the Community average, more favourable in Italy (+16% for industrial production and +32% for investment) and less favourable in the United Kingdom (+9,5% for industrial production).

An initial general conclusion may be drawn. Among the less developed Community countries, Spain, Portugal and Ireland, in which industry is relatively less important, trends have been particularly favourable in terms of investment and industrial production. By contrast, Greece shows notably mediocre performances, with falling industrial investment and stagnating industrial production. This heterogeneity of the southern Member States as regards macroeconomic performance will be discussed in Chapter 8.

Criteria adopted for identifying at Community level those sectors most affected by the single market

Several indicators were adopted :

- the level of non-tariff barriers (standards, frontier formalities, limited access to public procurement, differences in VAT and excise duties, etc.) measures the degree of protection of the sectors;
- (ii) the level of penetration of intra-Community imports (share of internal demand covered by intra-Community imports) is an indicator of the degree of internationalization of the sectors;
- (iii) the price dispersal for identical products between Member States describes the fragmentation of the Community market;
- (iv) the potential for economies of scale makes it possible to identify those sectors in which the enlarged market could bring a reduction in costs for European firms.

Two of these indicators play a fundamental role and were the subject of a major data-collecting operation: non-tariff barriers and price dispersal.

2. Identification of the sectors most affected by 1992

An initial identification of the industrial sectors most directly affected by 1992 was first of all carried out at Community level. It led to the selection of 40 sectors from the 120 considered. Subsequently, at a second stage, the pertinence of this list of 40 sectors was checked with respect to each Member State, taking account of their particular industrial structure and non-tariff barriers.

2.1. Sectors identified at Community level

Forty of the 120 sectors are likely to be more directly affected by 1992. These are industries which are at present protected by non-tariff barriers and in which these barriers either prevent economies of scale or allow large price discrepancies to remain between Member States. These sectors can be classified into four subgroups depending on their degree of openness to intra-Community trade on the one hand and price dispersion for identical products between Member States on the other hand. Graph 2.1 presents these four groups on the basis of whether, for the sectors considered, the criteria adopted are above or below the industry average.

The non-tariff barriers

To assess the importance of non-tariff barriers, several additional sources of information were used: a questionnaire completed by 11 000 European enterprises (Nerb, 1988), sectoral studies carried out for the Commission as part of its assessment of the costs of non-Europe (EEC, 1988) and a horizontal study of technical barriers in six industries (MAC, 1988).

The information thus collected has been used to classify all the industrial sectors (NACE-3 digits) into three groups according to the overall impact of non-tariff barriers: slight impact, moderate impact, major impact. Let us examine the case of sectors in which non-tariff barriers have a moderate or major impact.

Moderate impact of non-tariff barriers: this category covers a wide variety of sectors in which the principal obstacles are differences in standards or administrative and technical controls (e.g. different national quotas for imports from outside the Community). However, these barriers do not prevent intra-Community trade.

Major impact of non-tariff barriers: two major categories of sectors are identified here: those in which the public sector is the main purchaser and those in which differences in standards present a considerable obstacle to intra-Community trade. In these sectors, the non-tariff barriers not only lead to additional

direct costs which limit intra-Community trade, but they also reduce the efficiency of European firms by fragmenting and restricting competition on the Community market.

Price discrepancies between Member States

Price discrepancies between Member States constitute a second particularly useful indicator for examining the fragmentation of national markets.¹ Three main lessons can be learned from the analysis of price discrepancies between Member States:

(i) The abolition of tax frontiers will not eliminate price discrepancies between Member States, since differences in VAT contribute only slightly to these discrepancies.² Thus, the dispersion of prices net of all taxes is still 15,2 %, compared with 19,4 % for prices inclusive of all taxes.

- (ii) In those sectors in which there are non-tariff barriers, price dispersion has tended to increase slightly over the last 10 years (+5%), whereas it narrowed appreciably in those sectors more open to Community competition (-24 % over 10 years).
- (iii) The 'natural' dispersion of prices, i.e. the dispersion of prices for the same product within the same country (depending on the distribution network, the geographical location of the retailer, his profit margin, etc.), is appreciably less than that between Member States. Thus, a test carried out for a sample of durable goods in Germany showed that the dispersion of prices on the German market was half that on the Community market (see table).
- According to a regression analysis, the share of price differences explained by differences in VAT is from 4 to 8 %

Table B.1

Price dispersion: national and Community level

	Dispersion on the German market	FRC	Community ²	
	Dispersion on the Community market	FKG ⁷		
Radio-cassette recorders	45,1	7,3	16,2	
Video recorders	43,2	5,7	13,2	
Camera recorders	60,2	6,8	11,3	
Video cassettes	42,9	5,7	13,3	
Washing machines	24,6	3,3	13,4	
Colour TVs	47,4	6,4	13,5	

The dispersion has been calculated on the basis of the average prices recorded in major German cities. European Bureau of Consumers' Unions (EBCU) and Eurostat. The number of Member States included varies according to the products in question

Source: IFAV.

The Statistical Office of the European Communities gathers together a full set of price data in the form of the price review it conducts every five years with the help of national statistical offices (Eurostat, 1983). This survey, which constitutes the basis for calculating purchasing power parities, covers all final consumption products. The most recent survey is that for 1985; the results for 1970 and 1975 are also available. On the basis of the 1985 survey, price discrepancies—all taxes included and net of all taxes —have been measured for a sample of 113 groups of products.



High-technology public-procurement sectors (Group 1)

This group of activities concerns sectors such as office and data-processing equipment, telecommunications and medical equipment. These sectors are concerned with public procurement. However, they are also sectors in which there is strong growth in demand and in which products have a high technology content. Furthermore, the presence of American multinationals on the Community market and the large extent to which these sectors are open to the exterior (intra-Community penetration rate of 32 %) explains the low price dispersion between the Member States (9 %). In these sectors, Japanese and American companies today enjoy an advantage over their European counterparts in terms of productivity. In fact, these activities are characterized by considerable economies of scale which are not always properly exploited at Community level, and by large R&D budgets in which the lack of cooperation between European companies constitutes a handicap.

The expansion of the market could reduce costs for European companies through a more intensive use of economies of scale. European integration could further intensify cooperation between European companies in the field of

Table 2.1

The industrial sectors most affected by the internal market — Community as a whole

I ne n	industrial sectors most affected by the mo	eritar market —	- Community a	as a whole				(%)	
NACE Codes	Sector	Non- tariff barriers	Dispersion prices net of taxes	Share in value added	Share in employment	Share of intra-EC imports in demand	Share of extra-EC imports in demand	Extra-EC export/import ratio	
	High-technology public-procurement sectors								
330 344 372	Office machines Telecommunication equip. Medico-surgical equip.	high high high	7,44 8,89 21,12	2,45 4,29 0,38	1,28 4,33 0,45	30,91 22,44 31,48	36,30 28,76 31,38	57 117 139	
	Traditional public-procurement or regul	ated markets							
257 315	Pharmaceutical products Boilermaking, reservoirs, sheet-metal	high	32,65	2,48	1,63	10,61	6,40	248	
362	containers Railway equipment Wine & wine-based products	high high high	22,12 21,74	1,00 0,35 0,34	1,10 0,40	2,54 4,97	1,10 3,48	$\begin{smallmatrix}1&108\\&680\end{smallmatrix}$	
427 428	Brewing and malting Soft drinks & spa waters	high high	20,94 24,87	1,21 0,53	0,72 0,35	3,27 4,56	0,20 0,33	2 047 721	
341 342 361 417 421	Group 3 Electrical wires & cables Electrical equipment Shipbuilding Spaghetti, macaroni, etc. Cocoa, choc. & sugar confec.	high high high high high	8,89 8,86 10,12	1,40 3,42 0,78 0,14 0,72	1,52 3,71 1,16 0,14 0,79	11,21 17,91 7,75 6,72 12,98	8,79 13,04 21,72 0,38 2,83	163 182 178 1 038 214	
	Sectors with moderate non-tariff barrie	rs							
	Group 4								
	Consumer goods								
345 346 351 438 451 453 455 491	Electronic equipment Domestic-type elec. appl. Motor vehicles Carpets, lino, floor cov. Footwear Clothing Household textiles Jewellery, goldsmiths' & silversmiths	moderate moderate moderate moderate moderate moderate	7,65 7,67 10,61 15,76 14,28 10,17 13,42	1,84 0,88 7,21 0,23 0,81 1,98 0,21	1,86 1,09 6,64 0,30 1,24 3,61 0,30	19,71 22,68 22,82 44,85 44,65 13,43 26,05	28,80 11,37 10,44 23,65 36,84 18,37 31,68	63 130 201 122 106 57 59	
493 495	wares Photog. & cinemat. labs Games, toys & sports goods	moderate moderate moderate	22,06 10,12 12,07	0,27 0,16 0,26	0,25 0,16 0,33	15,99 23,95	10,23 43,41	157 128 48	
321 322 323 324 325 326 327 347 364	Agric. machin. & tractors Machine tools for metals Textile & sewing machines Machines for foodstuffs ind. Plant for mines, etc. Transmission equipment Other specific equipment Lamps & lighting equipment Aerospace equipment, manuf. and repairing	moderate moderate moderate moderate moderate moderate moderate moderate	8,30 10,73 10,97 12,26 18,06 12,92 15,70 17,10	0,66 1,22 0,53 1,28 1,68 0,73 0,76 0,36 2,20	0,81 1,36 0,56 1,25 1,89 0,85 0,74 0,42 2,05	19,75 17,91 34,96 31,45 29,40 23,79 38,66 31,84 18,05	5,40 16,25 23,26 14,63 14,81 13,48 20,92 12,70 24,25	442 191 369 400 342 178 330 252 121	
247	Intermediary goods	ma danata	21.46	1.11	1.05	21.20	7.20		
248	Ceramics Basic indust chemicals	moderate	21,40	0,90	1,05	20,93	7,39 8,62	213 255	
256 431	Other chemical products for industry Wool industry	moderate	23,02	1,81 0,62	1,15 0,78	30,39	11,41	249	
432 481	Rubber industry	moderate	23,02 17,85	0,94 1,48	1,17 1,57	20,45	8,43	175	

Sources: Panorama of EC industry and estimates from Commission services.

R&D, thereby promoting technological development in these industries.

Traditional or regulated public-procurement markets (Groups 2 and 3)

This classification covers two groups. Firstly, Group 2 concerns sectors such as rolling stock, energy-producing equipment and pharmaceutical products. To date, these sectors have been very protected through limited access to public procurement or national standards and regulations. As a consequence, intra-Community trade is undeveloped (intra-EC penetration rate of 8 % against an average for industry of 18 %) and price dispersion is considerable (25 % against a 15% average). In this group of sectors, the 'internal market' effect should be considerable. In the medium to long term, the opening up of public procurement should benefit the most competitive suppliers at European level and thus lead to increased intra-EC trade and reductions in prices. Such a change on the part of the public sector should bring major restructuring (mergers, concentrations, plant closures sites) in order to stimulate the emergence of production units of an optimal size for the integrated Community market.

Method of identification at national level

Firstly, we looked at each Member State to see whether there were sectors which, due to specific national characteristics, would be affected by 1992 although they had not been included in the list of 40 sectors identified at Community level. One example is activities which benefit from particular protection in one country due to the existence of non-tariff barriers imposed by that country alone. This is the case of the knitwear industry which is considered sensitive in Greece, where it benefits from export subsidies, and in Portugal, where it is protected by a quota. Both these forms of protection are destined to disappear by 1992. Similarly, sectors included at European level may be eliminated in the case of a particular Member State because its activity in this sector is insignificant and/or not protected. This is true of the wine sector in Belgium and the Netherlands.

Subsequently, the sensitivity of the sectors identified in each Member State was assessed by each national expert, by estimating the impact which the removal of non-tariff barriers could have. For each sector, five kinds of non-tariff barrier are common to all the Member States and a sixth category covers specific non-tariff barriers. The five kinds of non-tariff barrier are:

- (i) customs control and other administrative formalities,
- (ii) limited access to public procurement,
- (iii) national differences in standards and technical regulations,

Secondly, Group 3 concerns sectors such as shipbuilding, electrical equipment and some food-processing industries. These are industrial activities in which intra-Community trade is limited (11,2 % intra-Community penetration rate) but where, unlike the preceding group, price dispersal is relatively low (9,7 %).

In certain sectors in this group (shipbuilding or electrical equipment) there is substantial intra-Community trade, and competition from newly industrialized countries is a determining factor. This also explains why price dispersions are of such little significance despite the weakness of intra-Community trade and the fact that most restructuring has already been completed in these sectors independently of the large single market. There is still undoubtedly scope for further improvements in technical efficiency but they should be less than in the case of Groups 1 and 2.

Sectors with moderate non-tariff barriers (Group 4)

This last group alone accounts for 30,8 % of the industrial value added, i.e. more than the total share of the other three

- (iv) tax frontiers,
- (v) import quotas and other measures permitted by virtue of Article 115 of the Treaty of Rome.

In addition to these five kinds of trade barrier, two countries (Greece and Portugal) made reference to specific obstacles. Among these we find export subsidies in Greece and tariff barriers in Portugal, measures which will be eliminated not as a result of the completion of the internal market but of EC membership in itself. But, in these two countries, sectors which have hitherto been protected by this type of barrier have been included because they will be more vulnerable to increased competition. Also, it was impossible to dissociate the impact of these barriers from that of non-tariff barriers linked to 1992.

In order to evaluate the importance of these barriers by sector, two sources of information were used: surveys conducted among companies and discussions with sectoral experts. Each non-tariff barrier was awarded a score from 0 to 2 depending on the expected impact. By adding up the scores awarded to each barrier a total score per sector was obtained. On the basis of this total score the sectors were classified into two categories: industries with high non-tariff barriers (total score above or equal to 3) and industries with average non-tariff barriers (total score below 3).

Annex 1 lists the sectors most affected by 1992 which have been added to the list of 40 sectors, and those which are not included by certain countries.

Table 2.2

Major changes to the list of 40 sectors (Greece and Portugal)

Country	Sectors added to the list	Reason	Sectors eliminated from the list	Reason			
Greece	20 sectors		15 sectors				
	Steel, aluminium	Export subsidies National standards	Machines	Less developed activity			
	Structural metal products	National standards Specific taxes	High-tech public procure- ment (data processing equipment, precision in- struments)	Share of imported public purchases already high			
	Food processing (dairy products, oils and fats, bis- cuits)	Export subsidies Standards	Electronics Aerospace Shipbuilding Wine	No protection			
	Spirits	Specific taxes					
	Textiles (knitting industry)	Export subsidies					
	Leather goods	Administrative barriers (quality control)					
Portugal	13 sectors		6 sectors				
	Structural metal products	Standards	Transmission equipment	Activity not significant			
	Electrical equipment	Tariff barriers	Aerospace				
	Motor vehicles: Bodies	Public procurement (public road transport companies)	Photog. & cinemat. labs Toys				
	Motor parts	Tariff barriers					
	Cycles	Article 115, standards					
	Food processing	Customs control					
	Milling, bread and flour	Tariff barriers					
	Textiles	Quotas Tariff barriers					
	Man-made fibres Knitting	Quotas Tariff barriers					

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Sources: National studies and Commission services.
groups. This group includes a number of basic consumer products (radio, television, domestic-type electrical appliances, clothing, toys) and some intermediate and capital goods (motor vehicles, machines, glassware).

A priori, this group will be less affected by the removal of non-tariff barriers. In fact, there is already substantial intra-Community trade in this type of product (35,4% intra-Community penetration rate) and in many activities largescale enterprises are already operating on a large market. But a certain number of technical, administrative and fiscal barriers continue to impede intra-Community trade and allow quite a high level of price dispersion (almost 14%) to prevail.

The effect of the completion of the single market should be felt mainly downstream (distribution networks) rather than upstream (production). The purchasing centres of the major distributors will be able to seek more competitive suppliers at Community level, which should favour greater price convergence in these industries.

2.2. Sectors identified at national level

It is the southern Member States, principally Portugal (13 sectors added) and Greece (20 sectors added) and also, to a lesser extent, Spain (6 sectors added) and Italy (6 sectors added) which made the most substantial changes to the list of 40 sectors. Generally speaking, the sectors added to the list in these countries are in the textiles, food-processing and (except Spain) motor vehicle branches.

By way of example, Table 2.2 gives the changes made in the case of Greece and Portugal. In these two countries the changes are due, on the one hand, to maintaining tariff barriers and export subsidies for a transitional period following EC membership and, on the other hand, to their particular industrial structure. In these countries, the more traditional and labour-intensive industries make a greater contribution to employment and the creation of value added than in the rest of the Community and therefore often enjoy greater protection. Also, sectors such as knitwear and metal goods are considered as sensitive in Greece and Portugal where they account for almost 10 % of industrial employment. By contrast, more capital-intensive industries with a high technology content are less developed in these countries and are therefore very little protected. Thus, the high-technology public procurement sectors account for just 0,6 % of the industrial value added in Greece and 2,7 % in Portugal, compared with an EC average of 6,1 %.

3. Share of the sectors most affected by 1992

Firstly, we will consider the share in the value added and industrial employment of the 40 sectors identified at Community level. Subsequently, we will evaluate in the same way the importance of the sectors identified as sensitive at national level. Finally, the extent of the changes made by the Member States will be assessed by comparing these indicators for the 40 sectors adopted at national level.

3.1. The 40 sectors identified at Community level

The share of the 40 sectors in the value added of Community industry varies, depending on the Member States, between 60 % (Ireland) and 40 % (Spain) (see Table 3.1). In four Member States, these 40 sectors account for a share above the Community average (50 %): Ireland (59,6 %), Germany (54,6 %), France (53,4 %) and the United Kingdom (52,5 %). In Belgium, Italy and the Netherlands their share is close to the Community average. On the other hand, in the southern countries and in Denmark, these 40 sectors account for a smaller share of industrial value added: 40 % for Denmark, 41 % for Spain and 45 % for Greece and Portugal. But these are precisely the countries which have made substantial changes to the list of 40 sectors identified at Community level.

Table 3.1

Weight of the 40 identified sectors at Community level

Country	Share in industrial value added	Share in industria employment
IRI	59.6	43.3
D	54.6	54.5
F	53,4	50,8
UK	52,5	50,0
В	48,8	50,1
I	47,7	48,6
NL	47,0	44,9
Р	45,3	48,1
GR	44,8	45,4
E	40,9	39,1
DK	39,6	39,4

In general, the share of industrial employment in the 40 sensitive sectors is close to their share of industrial value added: it lies between 55 % (Germany) and 39 % (Spain). As can be seen from Graph 3.1, there is just one exception:



Ireland, where the 40 sectors which account for 60% of industrial value added account for just 43% of industrial employment.

In Ireland, this difference between the share of value added and of employment in the 40 sensitive sectors originates in high-technology public procurement and pharmaceuticals. These industries have two common characteristics. On the one hand, foreign multinationals dominate, accounting for 86 % of industrial employment in data processing, 85 % in telecommunications, 93 % in medico-surgical equipment and 82 % in pharmaceuticals. On the other hand, profits expressed as a percentage of sales are very high in these sectors: 42 % in pharmaceuticals, 32 % in medico-surgical equipment and 22 % in data processing. A substantial part of these profits is returned to the country of origin by these foreign companies. As a consequence, the figures for value added overestimate the relative importance of the sensitive sectors in the Irish economy, as a part of this value added leaves the country.

3.2. Sectors with high non-tariff barriers

In the northern Member States, the impact of 1992 will be more marked in two groups of sectors where there are high non-tariff barriers: high-technology sectors concerned by public procurement and traditional and regulated markets hitherto very closed to both intra-EC and extra-EC trade (Groups 1 and 2 of Chapter 2). These two groups account for a higher share in four Member States: Ireland (15,6 % of industrial employment), Germany (14,2 %), the Netherlands and Denmark (12,1 %) (see Graph 3.2).

By contrast, in the four southern countries, these two groups of sectors have a relatively less important share in terms of industrial employment, around 7 % in Italy and Spain, and around 6 % in Greece and Portugal. This phenomenon is even more apparent in the case of high-technology public procurement alone. This accounts for 3,5 % of industrial employment in Italy, 1,5 % in Spain, 0,6 % in Greece and 0,3 % in Portugal, while in Ireland, Germany and the Netherlands this percentage is above 8 %.

This latter result does not mean that the impact of 1992 will be less strong in the southern countries. But the sensitivity of these countries is different to that observed in the northern countries. Generally speaking, it is also apparent that sensitivity to 1992 is different in the northern countries than in the southern countries. In the northern countries, the sectors most affected are the capital-intensive industries and industries concerned by public procurement to which access has



previously been limited. In particular, the main competitors in high-technology public procurement are American and Japanese companies, and the real challenge is to become competitive on world markets. In sectors of this kind where the northern countries are much in evidence, major restructuring is at present in progress and this is partly geared to 1992. On the other hand, limited access to public procurement affects fewer sectors in the southern countries. This is notably the case in Greece. Thus, in the Greek industries where the public sector dominates, imports satisfy a large part of demand and this is even true of traditional public procurement such as the rolling stock sector. In data processing, rolling stock and telecommunications, the share of imported public purchases amounts to 100 %, 80 % and 55 % respectively.

By contrast, as stated above, in the southern countries limited access to public procurement is just one of several types of barrier which play an important role and, furthermore, it is the more traditional labour-intensive industries, such as textiles, clothing and footwear, which are protected the most. Here too, the main competitors lie outside the Community, but these are newly industrialized countries whose imports are often still limited by quotas.

3.3. The share of sectors identified at national level

After revising the Community list, the share in industrial employment of those sectors most affected by 1992 varies between 68 % (Portugal) and 45 % (The Netherlands) (see Table 3.2). This share is higher in three Member States: Portugal (68,1 %), Greece (61,5 %) and Germany (56,7 %).

Table 3.2

Weight o	of the	sectors	identified	at	national	level
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Country	Share in industrial employment	Share in industrial value added
Р	68.1	60.2
GR	61.5	56.7
D	56,7	60,4
I	52,2	50,0
F	50,8	53,4
В	50,1	48,9
UK	50,0	52,5
DK	49,4	42,1
E	48,1	48.5
IRL	46,7	60,9
NL	44,9	47.0

On the other hand, it is lower in Ireland (46,7 %) and in the Netherlands (44,9 %). In the other countries, it lies between 48 % and 52 %.

Graph 3.3 makes it possible to compare the share of industrial employment of the 40 sectors with the sectors identified at national level. It reveals that following changes to the list, the share of those sectors most affected by 1992 increases very clearly in two southern countries, namely Greece and Portugal. This result can also be seen, to a lesser extent, in four other countries: Denmark, Spain, Ireland and Italy.

By contrast, in five Member States (Germany, Belgium, France, the Netherlands and the United Kingdom), the share of the sectors identified at national level is very close to, if not identical to, the share of the 40 sectors on the Community list. For these countries, where the industrial structure is the same as the Community average, the changes made to the Community list are minor and often consist of the elimination of sectors in which activity is virtually non-existent (the railway equipment industry in the Netherlands for example). But even for these countries, the degree of sensitivity of a sector to 1992 may differ from that estimated at Community level. Thus, for example, French sectoral experts considered that the Community list was appropriate for France but that two sectors, motor vehicles and consumer electronics, are considered more sensitive in France than on average for the Community and the opposite is true for shipbuilding, a sector which is already very internationalized (see the French study, Table 2 which compares the very sensitive sectors in France with those in the Community).

4. The static performances of Member States in the sectors most affected by 1992

In this chapter, the external performances of each Member State in the sectors most affected by 1992 are analysed over recent years (see box for definition of the methodology used). This provides us with an initial picture of the position of each Member State with respect to the single market prior to the removal of non-tariff barriers. However, this initial picture suffers from being both global and static. Thus, in the subsequent chapters, this initial analysis will be completed and refined by, on the one hand, identifying and explaining structural similarities in external performances (Chapters 5 and 6) and, on the other hand, a priori evaluating the processes of dynamic adjustment at work in the framework of the possible scenarios (Chapters 7 and 8).



An analytical approach

Three stages may be distinguished in the analysis of the structural impact of 1992:

First stage: Static approach

In order to evaluate the sectoral effects of 1992, we must first establish the present external performances of each Member State in those sectors most affected by the opening up of the internal market. This initial picture of the country/sector situation is obtained by using four indicators calculated for recent years (average 1985-87):

- the intra-Community coverage ratio, being the ratio of intra-EC exports to intra-EC imports;¹
- the extra-Community coverage ratio, which is of interest in that it is not influenced by intra-Community non-tariff barriers;
- (iii) an export specialization index, being the ratio of the share of one sector's exports in the total exports of a country's manufacturing industry to this same share for the EC² and making it possible to compare a country's export specialization to its EC partners;
- (iv) a production specialization index, being the share of one sector in a country's industrial production compared with the share of this same sector in Community production, making it possible to compare the structure of a country's industrial production to the Community average and thereby highlight another aspect of economic performances than that related to trade.

For each of these four indicators, a score of between -1 and +1 is awarded per sector (see Table B.2) and it is then possible to compile a composite indicator which summarizes a country's performances across this range of indicators.

The static performance of each Member State is summarized in a diagram (see Graphs 4.1.1-4.1.11) showing the distribution

Xij: exports of country j in branch i

Xindj: total exports of country j in manufactured goods With EC instead of j-same indicators for the EC zone.

If this index is above 1, it indicates that the export specialization index of the Member State in this sector is stronger than for the EC countries overall.

of industrial employment in those sectors most affected by 1992 on the basis of their score for the four indicators. The effects of integration into the internal market should a priori be positive for those sectors in a favourable position (score of +4 or +3), in contrast to sectors in an unfavourable position (score of -4or-3). It is more difficult to decide for sectors in an intermediate position.

Finally, this static analysis of external performances can be completed taking into account sectoral characteristics in terms of demand growth or price competitiveness (see Annex 2).

Second stage: Historical trends in external performances

Historical trends in external performances make it possible to highlight the process of specialization at work prior to adopting the White Paper and they complete the initial picture of the static position per country/sector faced with 1992. For this purpose, and for each of the performance indicators adopted, we calculate trends between 1980-82 and 1985-87. As during the first stage, it is possible to construct a composite indicator of historical trends in performances (Table B.3)

Third stage: Current dynamic adjustments

The approach adopted in the first two stages has two short-comings:

- (i) it is based on past performance and does not take account of the current strategic reactions of economic agents;
- (ii) it is a sectoral approach which does not provide scope for describing the specific advantages of certain firms within a sector.

It is therefore important to complete and refine the analysis if we want to obtain a more prospective view of the sectoral impact of 1992. Thus, even in sectors where external performance is mediocre overall, the most dynamic firms may have competitive advantages (Abd el Rahman, 1988). This is all the more apparent in the case of sectors in which intra-branch trade dominates (Grubel, Lloyd, 1975). In this case, the external performance measured by the indicators adopted will depend primarily on the individual performance of firms.

In the analysis of these dynamic structural adjustments, the first task is therefore to supplement the information at a macroeconomic level and to highlight the strategies of European firms faced with the internal market (P. Buigues, A. Jacquemin, 1989). For this, there are several possible sources of information:

Direct investment made in the Member States: their Community or extra-Community origin may correspond to different strategies (north/south relocation within the EC, restructuring at European level, fear of increased protection of the Community market, interest vis-à-vis growth prospects offered by the single market, etc.)

¹ In the framework of this study, we will consider the coverage ratio in value only due to the lack of sufficiently reliable volume indicators at NACE-3 levels. It should be remembered that an improvement in the value coverage ratio may reflect two different phenomena:

an improvement in export prices compared to import prices which could be the result of an upgrading of goods exported or the effects of the exchange rate;

⁽ii) a faster growth in the volume of exports compared to the volume of imports. Xij/Xindj $% \left({{{\rm{N}}_{\rm{N}}}} \right)$

XiEC/XindEC

Company takeovers, minority holdings, joint ventures: these external growth or cooperation strategies between firms constitute an additional element compared with the flow of direct investments which only take account of holdings above a certain threshold. Surveys of companies: these provide information on their expectations of the internal market and on the accompanying strategies which they would wish to implement: R&D, production, marketing, distribution, etc.

Table B.2

Composite performance indicator for each country

Sector	NACE Code	X/M (intra)	X/M (extra)	SI (intra)	SI (prod.)	Global score	
		Score: -1 if the v 0 if 90% +1 if the v	alue of the indicator is \leq value of the indicator alue of the indicator is $>$	<pre> 90% ≤ 110% 110% </pre>		9	
ource: Commission servic	es.						
able B.3							
listorical evolution	of the performances	1					
Sector	NACE Code	$\Delta X/M$ (intra)	Δ X/M	(extra)	Δ SI (export)	Global score	
Score:		-1 if $\Delta X/M$ intra extra < -5% 0 if -5% $\leq \Delta \Sigma$ intra or extra \leq 5% +1 if $\Delta X/M$ intra extra > +5%	X/M + +		$-1 \text{ if } \Delta \text{ SI (export)} < 0$ 0 if $\Delta \text{ SI (export)} = 0$ +1 if $\Delta \text{ SI (export)} > 0$		
The difference is calcula ource : Commission servic	ted for the periods 1980-82 es.	and 1985-87.					

4.1. Profile of performances in each Member State

The use of four indicators (intra- and extra-EC coverage ratio, export and production specialization indexes) provides a fairly complete picture of performances, at a given moment in time, of each Member State in the sectors most affected by 1992. Graphs 4.1 to 4.11 illustrate the distribution of industrial employment in these sectors, on the basis of the total score obtained for these four indicators. They reveal the profile of the performances of each Member State, each sector being ranked between -4 (poor performance for the four indicators) and +4 (good performance for the four indicators).

This profile of performances shows wide variation from one country to another but, overall, two types of distribution may be distinguished: firstly, a relatively balanced distribution of employment on the scale of -4 to +4 and, secondly, distribution showing one or more (maximum three) modes, that is, a concentration of employment at one or more points on the scale -4 to +4.

These profiles of the distribution of employment are not easy to interpret because they combine a range of information relative to just a part of the industry of each Member State, namely industry in those sectors most affected by 1992. Nevertheless, these profiles do provide us with an initial idea of the present position of a country in these sectors.

The question can consequently be asked as to whether the distributions provide an initial picture of the magnitude of the impact on the Member States of removing non-tariff barriers. Thus, a country where industrial employment is concentrated in the high-performance sectors should a priori encounter fewer difficulties in adjusting than another country where employment is concentrated primarily in the poorperformance sectors. It should, however, be remembered that this analysis is based on present performances and therefore suffers from certain limitations (see Section 4.3) which we will endeavour to overcome in the following chapters.



4.1.3. Belgium



NB: For more information and details about the sectors, see the national reports in Part C. Source: Commission services. An initial group of countries with a relatively balanced distribution of employment consists of:

- (i) the United Kingdom where, taken overall, the share of industrial employment in the poorly-placed sectors (25 %) is greater than in the well-placed sectors (18 %). However, in this country, the greater part of employment is in fact concentrated in sectors with recorded scores from -2 to +2. Few sectors show either very good or very poor performances and they account for a relatively smaller share of industrial employment, giving the United Kingdom a normal pattern of distribution. The few very poorly-placed sectors mainly comprise the traditional industries of textiles/clothing/footwear. On the other hand, in the high-performance sectors we find mainly high-technology industries such as chemicals/pharmaceuticals and telecommunications.
- (ii) France where, unlike the United Kingdom, sectors showing a good performance account for a greater share (29,5%) of industrial employment than those with a poor performance (16%) and where we find more sectors with contrasting performances (scores of -3 and +4). Thus, 9,3% of French industrial employment is found in sectors with a score of -3, the machinery, footwear and clothing industries among them. By con-

trast, 12,8% of industrial employment lies in sectors showing very good performances (scores of +3 or +4), notably the drinks industry and sectors concerned by public procurement (rolling stock, aerospace, etc.).

- (iii) Belgium shows a quite balanced profile of performances but with a greater share of employment in sectors with a positive (29 %) or zero (10,5 %) score. In this country, the sectors with the worst performances (7 % of employment) are not only the traditional industries (footwear, clothing) but also the high-technology sectors (data processing, medico-surgical equipment, domestic-type electrical appliances).
- (iv) Finally, Spain is also included in this first group but, unlike Belgium, the greater part of its industrial employment is found in sectors with a negative score (19%), the share of sectors with a zero and positive score being 6% and 14% respectively. Among the well-placed sectors, we find traditional industries (wine, footwear, etc.) together with industries such as domestic-type electrical appliances and the motor vehicle industry with a higher technological content (see also Chapter 8).

The second group of countries where the distribution presents one or more modes can be broken down into three categories:







NB: For more information and details about the sectors, see the national reports in Part C.





¹ The sectors considered here are the 40 sectors identified at Community level.

- (i) countries where employment is concentrated in sectors showing very positive performances: Germany and Italy;
- (ii) countries where employment is concentrated in sectors with either very good or very poor performances (U pattern of distribution): Denmark, the Netherlands, Ireland;
- (iii) countries characterized by the large share of employment in the zero-score sectors: Greece and Portugal.

Of the countries where employment is concentrated in sectors showing good performances, Germany is the most striking example: 29,4 % of German industrial employment is in sectors with a score of +4. These sectors are largely made up of industries with a high capital and technology content, such as the machinery, motor vehicle and telecommunications industries. By contrast, industries with a very poor performance (agri-foodstuffs, clothing, footwear) account for just over 3 % of industrial employment.

Italy shows the same performances profile as Germany with 21,5% of its industrial employment in sectors with a score of +4. But, unlike Germany, most of these high-performance industries are labour-intensive (clothing, knitwear, footwear, etc.). However, the share of weak sectors (16\%) is higher in Italy than in Germany (9\%).







Share in industrial employment (%) 12 13 10,1 10,2 10,





Denmark and the Netherlands both show a similar U pattern of distribution, with 25 % and 21,5 % respectively of their industrial employment in high-performance sectors (score of +4 or +3) and just over 7 % in very poor-performance sectors (score of -4).

In Ireland, the distribution of employment shows a more pronounced U pattern than in the two aforementioned countries. At one extreme, there are 10 sectors with good performances (score of +4 or +2) totalling 23 % of employment, and at the other extreme 20 sectors accounting for 14,7 % of employment which show very poor performances (score of -4 or -3). Graph 4.1.9 provides quite a good picture of the dichotomy within the Irish economy characterized, on the one hand, by very competitive high-technology sectors dominated by foreign multinationals (data processing, telecommunications, pharmaceuticals, etc.) and, on the other hand, local, more traditional industries (footwear, clothing, etc.) which are not very competitive at all (see also Chapter 8).

The two final countries, Portugal and Greece, differ from the rest mainly in that a large share of their industrial employment is located in sectors with a zero score. For these sectors, the scores obtained for the four indicators ultimately cancel each other out: strong specialization in exports and production offset low intra- and extra-EC coverage ratios, or alternatively a high coverage ratio on extra-EC markets and a strong production specialization offset poor export performances on the Community market.

In Portugal, the distribution of industrial employment is concentrated in two areas. Firstly, in sectors with a zero score (23,5%), and secondly, in very high performance sectors (28% of employment in sectors with a score of +4). In the first group, two sectors account for a major share of employment: the wool and cotton industry (11%) and the metal goods industry (7%). In the second group of highperformance sectors, we find primarily labour-intensive industries such as clothing which alone accounts for 13% of employment, or almost half of the total for this group. Finally, many sectors show very poor performances (score of -4) but some of these are in fact virtually absent from the Portuguese industrial fabric (the data-processing or machinery sectors for example), their global share being just 10,6%.

In Greece, the distribution of employment is concentrated around three poles, at -4 (12,5%), 0 (16,7%) and +4(14,4%). There are just four high-performance sectors, in which two industries dominate, namely clothing and knitwear which together account for 13,3% of industrial employment, indicative of the great fragility of the Greek economy (see also Chapter 8). Of the zero-score sectors, two account for a high share of industrial employment: the cotton industry (7,1 %) and metal goods (4,1 %). Finally, as in Portugal, at the other extreme we find many sectors, the majority of which account for but a small part of Greek industry.

4.2. Global performances

In order to provide a composite picture of the positioning of each Member State in the face of 1992, we have grouped the sectors into two categories: sectors with a positive composite indicator score, and sectors with a negative or zero score. Graph 4.2 illustrates the position of each Member State according to the share of these two categories in industrial employment.

This graph shows four groups of countries:

- (i) Portugal and Greece, where the strong sectors account for a much smaller share of employment than the poorperformance sectors and for which the scores for the four indicators cancel each other out.
- (ii) The United Kingdom and Spain, where the share of the weak sectors is slightly higher than the other group.
- (iii) Belgium, Denmark, France, Ireland, Italy and the Netherlands, where the situation is reversed.
- (iv) Finally, Germany stands out as the country where the share of well-placed sectors is the highest and the share of poor or average-performance sectors is the lowest.

4.3. Limitations of the approach based on global performances

This picture has the advantage of presenting the position of one Member State relative to another but suffers from the serious disadvantage of being an oversimplification. The static performance of a Member State does not constitute a good indicator of its likely ability to seize the opportunities of the internal market in a sector of activity showing good performance. There are several different reasons for this:

Firstly, this picture of performance is too static. There are structural factors which can modify the position of one sector by either upgrading or downgrading its performance. It is therefore necessary to take account of historical trends in sectoral performances, as there are no sectors in which a country can be credited with definitively enjoying a strong position.

Secondly, the nature of trade between Member States is not the same for all sectors. In certain sectors it is inter-industrial, the countries clearly being net exporters or net importers. In other sectors it is inter-branch, countries trading between themselves in similar products without any dominating flow in one direction. The structural adjustments which will come with the removal of non-tariff barriers will vary in kind and possibly in magnitude in these two cases. A country showing good performance in a sector where inter-industrial (footwear, textiles) trade dominates in Europe is not in the same situation as another country with good performance in a sector where intra-branch trade dominates. A priori, structural adjustments could be greater in sectors where interindustrial trade dominates. This point will be further developed in the following chapter and in the chapter on adjustments in the southern Member States.

Thirdly, the removal of non-tariff barriers could radically alter the status quo. Thus, for a Member State protecting its national market in a particular sector, the significance of performance indicators would be very relative and in any event of little relevance if compared with those of another Member State already practising a policy of free trade in this same sector. The removal of non-tariff barriers could therefore change the whole map of sectoral specializations. This point will be analysed in detail in Chapter 6.

Finally, firms may have internationalized, to a greater or lesser extent, their production through policies of acquisition or direct investment. In this case, the performance of one Member State measured by external trade indicators alone could lead to significantly different results than those obtained by measuring the performances of national firms. Let us suppose, for example, that the firms in Member State A transfer production to Member State B as a result of the comparative benefits offered by the latter. The trade balance between A and B could be favourable to country B while the firms would be controlled from country A. This aspect will be the subject of a more detailed examination in the chapter on the most industrialized Member States.

For all these reasons, it is necessary to go beyond this static approach. The following chapters will seek to shed additional light on the subject from this point of view.

5. Comparative advantages and intra-industry trade in the EC

5.1. European integration and the nature of intra-Community trade

The effects of economic integration have been the subject of many studies (Balassa, 1961; Mayes, 1978). These studies



have shown that the structural effects of the removal of nontariff barriers are complex. International trade does not in fact simply result from an interplay of comparative advantages as economies of scale and product differentiation play at least an equally important role.

In the traditional analysis of international trade which supposes conditions of perfect competition and constant returns to scale, the removal of non-tariff barriers implies greater specialization by countries on the basis of their respective comparative advantages. Integration into the internal market would therefore favour an upsurge in inter-industrial trade, each Member State specializing primarily in the sectors where it is relatively efficient or which draw intensively on its abundant resources.

In cases where large-scale production is advantageous, we would also see an increase in intra-Community trade, but this would vary depending on whether the products concerned are homogeneous or heterogeneous. For homogeneous products, the removal of non-tariff barriers will favour the concentration of production at a limited number of geographically localized sites depending on the comparative advantages of the Member States. We would then see an increase in inter-industrial trade. If, on the other hand, the products are heterogeneous, several production units could be maintained in several Member States, each one specializing in different kinds of products and intra-branch trade would be favoured (Sapir, 1989).

Originally, the common market consisted of six Member States with comparable industrial structures, wages, productivity or capital-labour ratio (except for southern Italy). Trade in similar goods, close substitutes which may be differentiated on the basis of brand, quality or marketing network, dominates in many activities between countries which are characterized by similar factor endowments and technological development. The growth in intra-Community trade in manufactured products therefore continued through to the mid-1960s due to increased intra-industrial rather than interindustrial trade (Padoa-Schioppa, 1987).

With the entry of the southern European countries to the EC, partners with varying industrial structures and levels of productivity, salaries or capital-labour ratios were included in intra-Community trade. The trade between these southern and northern Member States is, however, more of the inter-industrial type. In fact, the southern Member States tend to specialize in industries with a high labour but low technology content, and the northern Member States in industries with a high technology, capital and skilled labour content.

It is quite evident that the removal of non-tariff barriers will not have the same effect on countries and sectors where inter-industrial trade dominates as it will on countries and sectors where intra-branch trade dominates. We must therefore distinguish between the two if we are to describe the effects of the internal market on the industrial structure of the Member States. This then is the object of this chapter.

5.2. Measurement of intra-industry trade

Balassa (1966) was the first to propose that a ratio be established, per sector, comparing net trade, that is exports less imports (X - M), with total trade (X + M). A ratio of +1 means that the country exports without importing, and a ratio of -1 means that the country imports without exporting. A ratio of zero shows two-way trade in similar products, with exports equalling imports. In this case, we are dealing with intra-branch trade.

For the sectors as a whole, we can construct a summary indicator, known as the Grubel and Lloyd coefficient:

$$B = 1 - \frac{\sum_{k=1}^{n} |X_{k}^{i} - M_{k}^{i}|}{\sum_{k=1}^{n} (X_{k}^{i} + M_{k}^{i})}$$

in which, k = 1, ... n branches,

 X_k^i = exports of product k by country i.

1

The closer this indicator is to 1, the greater the share of intra-branch trade. Table 5.1 gives the share of intra-branch trade in intra-Community trade in industrial products.

We can see that the countries can be classified into several major categories:

France (0,83), the United Kingdom (0,77), Belgium (0,77), Germany (0,76) and the Netherlands (0,76) have the highest intra-branch ratios. These ratios have changed little over recent years, having reached a certain ceiling.

Denmark (0,57%), Spain (0,64%), Ireland (0,62%) and Italy (0,57%) show comparable levels but varying trends. Intra-branch trade saw a marked rise in Spain and Ireland between 1970 and 1987, while in Italy it declined over the same period. As for Denmark, it experienced significant growth even if it does not quite match that of Spain and Ireland.

Finally, Greece (0,31) and Portugal (0,37) continue to show a low intra-branch ratio in their intra-Community trade. The increase in the Grubel and Lloyd coefficient is certainly considerable between 1970 and 1987, but intra-Community trade remains essentially of the inter-industrial variety.

Table 5.1

Share of intra-industry trade in intra-Community trade

					(as % of total trade)
Country	1970	1980	1	987	Difference
	Total	Total	Total	40 sectors	Dungo
BLEU	0,69	0,76	0,77	0,74	+ 0,03
DK	0,41	0,52	0,57	0,59	+ 0,05
D	0,73	0,78	0,76	0,70	- 0,02
GR	0,22	0,24	0,31	0,18	+ 0,07
E	0,35	0,57	0,64	0,61	+ 0,07
F	0,76	0,83	0,83	0,83	+ 0,00
IRL	0,36	0,61	0,62	0,55	+ 0,01
Ι	0,63	0,55	0,57	0,53	+ 0,02
NL	0,67	0,73	0,76	0,73	+ 0,03
Р	0,23	0,32	0,37	0,36	+ 0,05
UK	0,74	0,81	0,77	0,75	- 0,04
Source : Commission services.		、 、			

This first kind of analysis therefore shows the degree to which intra-Community trade varies in nature depending on the countries involved. Greece and Portugal show a marked inter-industrial specialization. They import certain kinds of products for which they enjoy no comparative advantages and specialize strongly in certain products for which, on the contrary, they enjoy considerable comparative advantages.

5.3. Factors explaining intra-industry trade

The explanations lie in both supply and demand, as well as market structure. Intra-branch trade is distinct from interindustrial trade because, in intra-branch trade 'goods traded are close substitutes in their consumption, production or both' (Grubel, 1970). Countries with a high level of intrabranch trade are also countries which are structurally similar, as can be seen in the case of the Community countries with the highest intra-branch coefficients (Belgium, Germany, France, the Netherlands, United Kingdom). These countries produce similar goods with similar cost structures-similar goods, but not identical goods. French cars are not the same as German cars and it is the consumers' demand for 'differences' which engenders the trade (Muchielle, 1989). The opening up of trade thus corresponds to the demand for an increase in the number of varieties of the same product.

Economies of scale are another important factor in explaining intra-branch trade. Each country specializes in the production of a specific product because increases in the production of this product engender economies of scale. Economies of scale occur on markets with imperfect competition. The multinational companies present on markets in several Member States are multi-product and may therefore have chosen to specialize a particular factory in a particular country on a particular product and another factory in another country on another product. Examples of this are to be found in the chemicals industry, data processing and motor vehicles. In other words, rather than explaining intra-branch trade primarily in terms of demand which stresses the diversity of consumer tastes, the emphasis here is on the role of supply.

Thus, there is no shortage of explanations for intra-branch trade. Another approach explains the existence of intrabranch trade in terms of innovation and technological discrepancies. When a country innovates with respect to a product which can be substituted for an imported product, imports of this product will progressively fall and the new product will be exported. As the two goods are products of the same industry, for a certain period we will see a crossflow of trade between these two products.

5.4. Industries where intra-Community trade is of an inter-industry nature

There are four industrial sectors identified as sensitive to the removal of non-tariff barriers and in which inter-industrial trade dominates: wines, footwear, clothing, machine tools (Graph 5.1).



In the case of wine, four countries are the principal producers (Portugal, Spain, Italy, France) and they supply the other Community countries which are all net importers. In the footwear industry, Portugal, Spain, Italy and Greece export to other countries which are net importers. The situation is the same for clothing, with the exception of Spain.

Finally, in the case of the machine tools industry, Italy and Germany are both producers and have a large surplus *vis*- \dot{a} -*vis* other Community countries, except for Spain which is in an intermediate position.

Taken overall, inter-industrial trade dominates in a very limited number of sectors. The traditional comparative benefits which essentially explain this type of trade vary: natural resources (wines, champagnes), labour costs (footwear, clothing). The situation is, however, less clear in the case of machine tools where the specialization of Italy and Germany is not, a priori, based on evident comparative advantages.

5.5. Industries where intra-Community trade is of an intra-industry nature

Similarly, there are only a few sectors where intra-Community trade is almost exclusively of the intra-branch variety, such as the basic chemicals and electronic appliances industries (Graph 5.2).

In the case of domestic-type electrical appliances, all the northern Member States show average performances (composite indicator score of 0 or 1). By contrast, in this sector, the four southern Member States are all net importers. This confirms the fact that trade between the northern and the southern Member States still tends to be principally interindustrial and that intra-branch trade is most developed between the northern Member States.

In the case of basic chemicals, one country, the Netherlands, is characterized by a very favourable performance, and four countries, Denmark, Spain, Greece and Portugal, are characterized by a very unfavourable performance. The other Member States obtain scores of between 0 (United Kingdom, France) and +2 (Belgium, Germany).



6. Performances of the Member States and comparative advantages

The previous chapter highlighted the nature of trade between Member States. We saw that inter-industrial trade was dominant in a limited number of sectors and that intra-branch trade was dominant in another limited number of sectors. For the majority of sectors, and depending on the nature of the bilateral trade considered, a predominantly 'intra' or 'inter' form of trade could be detected. For example, if we take chemical products, we find intra-branch trade between France and Germany (trade in similar products) and interindustrial trade between Germany and Greece (asymmetric trade in different products). In this chapter we will therefore initially endeavour to go beyond the global performances of the Member States in the 40 sectors and identify structural similarities in their external performances. This will reveal groups of countries with comparable performances.

The question nevertheless remains as to whether or not, in upsetting present mechanisms for protecting national markets, the removal of non-tariff barriers will change the map of sectoral specializations. In a second section we will therefore consider the full 120 industrial sectors and highlight the comparative advantages of the different Member States in labour-intensive sectors, sectors with a high capital or R&D content, sectors with economies of scale, etc. The profile of the Member States' performances across the full range of industrial sectors, including the 40 sectors most affected by 1992, highlights the specific structural characteristics of each national economy. The comparison for each Member State of performances in the 40 sectors alone will show that overall their performances correspond to their comparative advantages across the full range of industrial sectors and that the removal of non-tariff barriers should not alter the map of industrial specializations.

6.1. Performances of the Member States: sectoral similarities

The global approach to performances has not yielded an explanation for the different positions of each Member State. These positions are due, in part, to their structural differences. In effect, faced with the opening up of the internal market, the countries do not possess the same comparative advantages.

In order to better appreciate the positions of the Member States in terms of industrial structures, groups of countries can be identified as showing similar performances in comparable sectors. Our purpose here is not so much to identify those countries which are in a strong or weak position in the 40 sectors as to establish a typology of resemblances in terms of industrial structures.

To this end, analysis of principal components allows us to summarize the information on the commercial performances of the 11 Member States in terms of a more limited number of explanatory variables. It is a question of grouping together those countries which show comparable sectoral performances in the 40 sectors. The average composite score based on the four performance indicators will be used to position the countries with reference to one another.

Graph 6.1 shows the first factorial plan. The first factorial axis (vertical axis) incorporates 32 % of the initial information, that is, it alone explains a third of the differences in performance observed between the 11 Member States in the 40 sectors. This factorial axis separates the countries very distinctly into two groups.

On the one hand, there are the countries showing a clearly positive ordinate *vis-à-vis* this axis, above 0,25 (F, B, IRL, NL, D, UK) and on the other hand, countries for which this ordinate is clearly negative, i.e. below -0.6 (E, P, GR, I). The significance of this first factorial axis is quite clear. It separates the Member States with good performances in

labour-intensive sectors, such as footwear, leather goods, clothing, household linen, etc. from countries with good performances in sectors with a high technology content.

The second factorial axis (horizontal axis) accounts for approximately 20 % of the differences in performances observed between the 11 Member States in the 40 sectors. Together, these two factorial axes therefore explain 52 % of the differences in performances observed in the 40 sectors. which is, as a whole, satisfactory. This second axis separates the Member States in a less clear fashion. A priori, three groups of countries should be taken into account: an initial group of countries with a score of above 0.25 (D, I), a second group with a score between -0.2 and +0.2 (F, UK, E) and a third group of countries with a clearly negative score, under -0,3 (P, NL, B, IRL, GR). This second factorial axis is rather more complex to interpret than the first. It contrasts countries with good performances in capital goods (D,I) with countries with poor performances in these sectors (GR, P, IRL, B, NL) and better performances in consumer goods. The countries located in the centre (F, UK, E) show an average performance in these types of activity.

Overall, if the Member States are projected onto the first factorial plan, it is possible to distinguish groups of countries with comparable performances in the 40 sectors. There are four groups of countries which show generally comparable structural performances.

- (i) The first group consists of highly industrialized Member States, with a limited presence on markets for capital goods due to their size, but showing a good performance in consumer goods: The Netherlands, Belgium and Ireland.
- (ii) The second group consists of less developed Member States which are rather weak in high-technology sectors but strongly placed in labour-intensive sectors, in particular basic consumer goods: Greece, Portugal and Spain.
- (iii) The third group consists of highly technological Member States (Germany, United Kingdom), and in the case of one of them (Germany), performance in equipment goods.
- (iv) Italy is atypical in that it shows good performances in labour-intensive and capital goods sectors.

This initial typology of the static performances of the Member States in those sectors most affected by the single market therefore reveals varying profiles of structural performances depending on the country in question.

This similarity revealed by the factor analysis can be largely explained by the comparative advantages of the Member



States in certain types of activity. We will therefore initially attempt to determine the principal factors explaining the performances of each Member State.

6.2. Factors determining trade

This analysis first of all deals with the 120 sectors of manufacturing industry. Subsequently, we will check whether the comparative advantages identified for industry as a whole also apply, for each Member State, to the 40 sectors most affected by the internal market. The models tested here (see Box) are based on an approach which attempts to reconcile the two principal theoretical approaches to international trade. According to this approach, international trade is determined both by differences in factors of production (neo-factorial approach), a distinction being made between skilled and unskilled work, and by differences in technology (neo-technological approach), often measured by R&D content (see Mucchielli, 1987). Furthermore, an indicator of economies of scale is also included in one of the models tested. In fact, in so far as the Community market is still fragmented, the size of the national market can influence the size of companies and conse-

quently the larger countries perform well in sectors with economies of scale, unlike the small countries where the size of the national market is not sufficient to allow companies to achieve an optimal size (see Chapter 7). However, in expanding the market to which European companies have access, the completion of the internal market should put an end to this advantage enjoyed by the large countries.

The dependent variable is the coverage ratio by sector and country. The explanatory variables represent labour, capital and technology content and a measure of economies of scale in each industry.

These characteristics are measured as an average for the four major Member States (Germany, France, Italy, United Kingdom) for which reliable data ara available at such a level of disaggregation.¹

Due to the lack of disaggregated data for the other Member States, we assume here that the production technologies used in the four larger countries apply to the rest of the EC. This hypothesis may be proved inaccurate for certain sectors (ceramics and clothing for example).

Presentation of estimated models

The estimated equations are as follows:

Log TC ij = a + b Log (K/Q)i + c Log (L/Q)i + b Logd Log RDi + ui (1)

Log TC ij = a + b Log (K/L)i + c Log RDi + ui (2)

Log TC ij = a + b Log(K/Q)i + c Log(L/Q)i + d Log RDi + d Log RDe Log EOSi + ui (3)

The index i relates to the sector¹ (defined at NACE-3 positions), and the index j to the country.

The dependent and explanatory variables are:

TC = Coverage ratio

K/Q = index of capital intensity, investment in relation to production (weighted average of the last three years).²

L/Q = index of labour intensity, number of jobs per unit of production (weighted average of the last three years).

K/L = index of capital intensity, total investment from 1980 to 1987 in relation to employment.

EOS = indicator of economies of scale, number of employees per establishment (weighted average of the previous three years). This indicator of economies of scale has a close affinity to that proposed by Pratten (1988), namely additional production costs for a company which is half the optimal size. It is preferred to the latter because it is available for a greater number of sectors.

RD = index of technology content, expenditure on R&D related to production (1987).

LQ = index of concentration of skilled staff, skilled staff as a part of total workforce.3

Table 6.1. gives the results of equation (3) only, the estimates of the other equations are given in Annex 3.

The estimates are based on 90 observations because certain indicators are not available for certain industries. The most recent year available is 1987.

The skilled labour force is the sum of managers, craftsmen, workers and skilled staff. Unlike the other variables, the index of intensity in skilled labour is calculated as an average for EUR 9. The data were provided by the most recent survey of wage structures (1978-79) and were only available for NACE-2 positions.

The results of one of the estimated equations are presented in Table 6.1 and are briefly commented upon below for each Member State.

Germany

Germany shows good external performances in sectors with a high R&D content and the coefficient for this variable is the highest, along with the United Kingdom, of any Member State (elasticity of 0,22 to 0,27 depending on the equations). It is also interesting to note that Germany is the sole Member State in which economies of scale have a significant and positive effect (elasticity of 0,18). By contrast, high capital and labour contents are of no significance to German trade. Other studies confirm these results. Wolter (1977), who analyses the specialization of Germany with respect to the rest of the world, finds that the important variables are the qualification of labour which is measured by the sum of differences between the hourly wages of skilled and unskilled workers, innovation taken as expenditure in R&D as a percentage of sales, and economies of scale represented by the number of firms with 500 or more employees as a percentage of the total number of firms. Similarly, Hufbauer (1970) shows that the net exports of Germany are higher in sectors with economies of scale and a high level of skilled jobs.

Two additional equations corresponding to models (1) and (2) and including a variable measuring the concentration of

Table 6.1

Estimates from equation (3)

Country			Independe	ent variables		
	K/Q	L/Q	RD	EOS	R ^{2c}	F
BLEU	0,27 (1,23)	- 0,23 (1,23)	-0,05(0,70)	0,07 (0,64)	0,59	F4,89 = 34,6
DK	0,17 (0,46)	- 0,39 (1,27)	-0,01 (0,11)	-0,26 (1,50)	0,07	F4,90 = 2,9
D	-0,21 (1,04)	0,19 (1,11)	$0,22^{-1}$ (3,40)	$0,18^{-1}$ (1,84)	0,70	F4,89 = 54,3
GR	0,52 (0,93)	- 0,72 (1,53)	-0,53 ¹ (2,93)	(1,13) - 0,31	0,32	F4,90 = 12,3
E	0,30 (0,74)	0,37 (1,09)	$-0,40^{-1}$ (3,05)	0,13 (0,66)	0,16	F4,90 = 5,6
F	0,31 (1,39)	- 0,31 ¹ (1,67)	0,11 (1,56)	-0,03 (0,31)	0,46	F4,90 = 20,6
IRL	0,14 (0,38)	-0,39 (1,31)	0,15 (1,30)	-0,26 (1,54)	0,09	F4,90 = 3,4
Ι	0,19 (0,43)	$0,70^{-1}$ (1,94)	-0,02 (0,13)	$-0,37^{-1}$ (1,82)	0,46	F4,90 = 21,3
NL	-0,05 (0,21)	- 0,34 ¹ (1,81)	0,003 (0,05)	0,04 (0,40)	0,35	F4,90 = 13,8
Р	0,70 (1,29)	$1,31^{-1}$ (2,90)	$^{-0,65}_{(3,72)}$	-0,008 (0,03)	0,31	F4,90 = 11,8
UK	$^{-0,50}_{(1,74)}$	0,43 ¹ (1,79)	$0,24^{-1}$ (2,56)	0,17 (1,26)	0,52	F4,90 = 26,5

Significant at 10%.

skilled staff have been tested for Germany. The results given in Annex 3 correspond to those of Wolter and Hufbauer and show the positive effect of a high skilled labour content.

France

The results of the equations allow us to conclude that France enjoys comparative advantages in sectors with a high capital and R&D content and comparative disadvantages in labourintensive sectors. Finally, economies of scale play no role.

Hanel and Roncin (1977) examined the nature of French exports with reference to 11 characteristics of 102 groups of manufactured products divided up into four major groups depending on their dominant characteristics (intensive in natural resources, highly intensive in skilled labour, pronounced technical differentiation, residual group). The authors show that the factors determining trade vary depending on the type of products and the partner geographical zones (EC, .developing countries, USA). Overall, France is relatively well placed for 'products having attained a certain maturity in the life cycle' and which have a high capital content.

United Kingdom

The external performances of the United Kingdom are positively affected by a high R&D content and negatively affected by a high capital content. The economies of scale variable is not significant but when it is included in the equation the positive coefficient on the variable for labour intensity becomes significant.

These results are quite similar to those obtained by Hughes (1986), who finds that a high technology and labour content has a positive effect on United Kingdom exports, a high capital content has a negative effect, and economies of scale are not significant.

As in the case of Germany, the effect of a high level of skilled personnel on the external performances of the United Kingdom was also tested. Contrary to the findings of Hughes, this variable is not significant when it is associated with a high R&D content.

Italy

The comparative advantages of Italian industry are markedly different to those of the three other large countries. In fact, such advantages are enjoyed by labour-intensive industries. By contrast, economies of scale and a high capital content have a negative effect on Italy's external performances. It should be noted that the comparative disadvantage in the capital-intensive sectors is less evident. In fact, although the capital coefficient per job is significant in equation (2) given in Annex 3, this is not the case for the coefficient on the K/Q variable in equations (1) and (3).

These results are consistent with the characteristics of Italian industrial activity. In fact, it is in the fragmented sectors that the small, labour-intensive and highly flexible companies which are the strength of the Italian economy dominate.

Small countries

The four small economies of the north of the EC all present a comparative disadvantage in labour-intensive sectors.

Belgium and the Netherlands are at a comparative advantage in the capital-intensive industries (see also Annex 3 for The Netherlands). For Belgium, this result is confirmed by the Culem study (1984) which focuses on the position of the BLEU countries compared with other industrialized countries. By contrast, neither high technology content nor economies of scale help to explain the external performances of these two countries. This result thus indicates that these two countries show good external performances in the traditional industries rather than capital-intensive industries. Furthermore, in these two already very open economies, the smaller size of the domestic market does not really constitute a handicap.

This is not so for Ireland and Denmark which are at a comparative disadvantage in sectors with economies of scale. However, for these two countries, it is more difficult to come to any conclusion regarding the factors explaining trade due to the poor overall quality of the estimate ($\mathbb{R}^{C2} < 0,1$).

Southern Member States (excluding Italy)

Spain, Greece and Portugal share the common feature of a comparative disadvantage in industries with a high R&D content. However, it should be noted that the negative effect of the variable of a high-technology content is less strong for Spain than for Portugal and Greece. Of the three countries, only Portugal possesses a comparative advantage in labour-intensive industries. But if we consider the determining factors of intra-EC trade (see Table 6.2), labour intensity becomes an explanatory factor for Spanish external performances. The positive effect of a high labour content (coefficient of 0,79) is below that estimated for Portugal (coefficient of 1,67), as expected, but is also below that for Italy (coefficient of 0,97), which is more surprising.

Table 6.2

Factors explaining EC trade patterns of the four southern countries¹

Country			Indepen	dent variables		
	K/Q	L/Q	RD	EOS	R ^{2c}	F
GR	- 0,21 (0,32)	0,34 (0,61)	- 0,44 ² (2,06)	-0,08 (0,24)	0,18	F4,90 = 6,3
E	-0,10 (0,23)	$0,79^{-2}$ (2,13)	- 0,32 ² (2,24)	0,04 (0,19)	0,29	F4,90 = 10,7
Ι	-0,06(0,14)	$0,97^{2}$ (2,70)	-0,15 (1,08)	- 0,34 ² (1,64)	0,25	F4,90 = 8,9
Р	0,29 (0,44)	1,67 ² (3,05)	$-$ 0,58 2 (2,75)	-0,11 (0,36)	0,19	F4,90 = 6,4

¹ The equation tested is the same as equation (3) but the dependent variable is the intra-EC export/import ratio instead of total export/import ratio. ² Significant at 10%.

Source : Commission services.

This result also shows that the comparative advantages of Spain are different depending on whether considered *vis-à-vis* the world or the EC. Thus, within the EC, Spain still enjoys a comparative advantage in labour-intensive sectors. However, at world level, this is no longer the case due to competition from certain developing countries where wages are low. Martin (1989) reached a similar conclusion, showing that compared with the non-OECD countries, Spain has an advantage in sectors with a high natural resources content and a disadvantage in sectors with a high human capital content. On the other hand, compared with the OECD zone, the contrary is the case and, furthermore, Spain has an advantage in capital-intensive sectors.

The principal points arising from this empirical analysis are summarized in Table 6.3. We can conclude that:

(a) the northern Member States have an advantage in sectors with a high R&D content (Germany, France, United Kingdom) and/or with a high capital content (Belgium, France, the Netherlands) and are at a disadvantage in labour-intensive sectors (Belgium, Denmark, France, Ireland, the Netherlands);

(b) the southern Member States have an advantage in labour-intensive sectors (Italy, Spain, Portugal) and the three least advanced among them a disadvantage in R&D-intensive sectors (Greece, Spain, Portugal).

Finally, economies of scale have a positive effect on the trade of just one country, Germany, which has a large national market. On the other hand, they have a negative impact in Italy where the fragmented sectors dominate, and in Denmark and Ireland where the small size of the national market can constitute a handicap. In the other countries this variable is of no significance.

Table 6.3

Comparative advantages and disadvantages of each Member State¹ — Synthesis of the empirical analysis

Country/independent variable	B + L	DK	D	GR	E	F	IRL	Ι	NL	Р	UK
Capital intensity	+					+		_	+	_	_
Labour intensity	-	—			+ 2	-		+	-	+	
R&D intensity			+	—	-	+				—	+
Economies of scale			+				-				

A '+' sign corresponds to a positive influence on the explanatory variable and thus a comparative advantage. A '-' sign corresponds to a negative influence on the explanatory variable and thus a comparative disadvantage.
 A the intra-EC level.

Source : Commission services

6.3. Comparative advantages in the 40 sectors

For the 40 industrial sectors where non-tariff barriers are at present particularly high in the Community countries, the external performance indicators can be of limited significance because these barriers constitute an obstacle to trade. This is, for example, true of those sectors related to the traditional national markets where intra-Community trade is very low. In this case, high coverage ratios or specialization indices may simply indicate that a particular Member State has a national market which is more protected than those of other Member States. Also, when the non-tariff barriers are eliminated, the new map of performances may be very different to that based on positions acquired in the past, when protected by these barriers.

In response to this criticism, we tried to check whether the comparative advantages observed at the level of the 40 sectors conform to the findings of the empirical analysis encompassing manufacturing industry as a whole. To do so, we classified the 40 sectors into five groups on the basis of their structural characteristics and subsequently measured the external performances of each Member State in each of these groups.

The structural characteristics adopted for the purposes of this classification are capital, labour and R&D content, as defined in the previous section. In order to classify each sector into one of the five groups, the value of each of these indicators is compared with the average value for manufacturing industry.

The five groups are as follows:

Sectors with a high capital and R&D content¹

For these sectors, the coefficients of capital and R&D intensity are above the industry average. We find mainly those industries which supply the high-technology markets (data processing, telecommunications) together with capital goods (machine tools, aerospace, etc.), consumer goods (motor vehicles, domestic-type electrical goods, pharmaceuticals, etc.) and intermediate goods (chemicals, glassware, etc.).

Sectors with a high capital content but low R&D content

These are essentially the food processing industries (beer, water, confectionery) which are very capital-intensive but where R&D expenditure is below the industry average.

Sectors with a high skilled labour content

These are labour-intensive industries where R&D expenditure is relatively high, although not as high as in sectors with a high capital and R&D content. This category includes industries such as rolling stock, electrical equipment, lighting equipment and textile machinery.

Sectors with a high labour content

These sectors are characterized by a labour coefficient which is considerably above the average and have, on the other hand, a low capital and R&D content. The main sectors in this group are textiles (cotton), footwear and clothing together with shipbuilding and toys.

Sectors with a low labour and capital content

This is a heterogeneous group with a labour and capital intensity slightly less than the industry average.

After having classified the 40 sectors most affected by 1992 into five groups on the basis of their factorial scores, it is possible to define the comparative advantages of each Member State in each of these groups. These advantages are measured by the total coverage ratio of one sector compared with that of industry in general. These relative coverage ratios are calculated, on average, for each group and we will consider that a country possesses comparative advantages in those groups where its relative coverage ratio is above 110 %.

Table 6.4 describes the relative coverage ratio in the five groups, for each Member State. The second section of this table summarizes the comparative advantages of each country in the 40 sensitive sectors. It is consistent with the principal conclusions of the empirical analysis for manufacturing industry as a whole, that is:

- the comparative advantages of the northern Member States are in sectors with a high R&D and/or capital content;
- (ii) the comparative advantages of the southern Member States are in labour-intensive sectors.

We can therefore conclude that, taken overall, the positions of each Member State in the 40 sectors conform to their comparative advantages and thus that the removal of nontariff barriers does not threaten to upset the EC specialization map.

However, certain divergences do appear between the results of the empirical analysis carried out for industry as a whole

 $^{1 \,}$ Annex 4 describes the 40 sectors classification in terms of structural characteristics.

Table 6.4

Comparative advantages of each Member State in the 40 sectors - Relative export/import ratio in the five groups

Country-group	B + L	DK	D	GR	E	F	IRL	I	NL	Р	UK
Capital and $\mathbf{R} \ & \mathbf{D}$ -intensive sectors	110	61	118	25	85	105	112	65	103	49	109
Capital-intensive sectors	147	216	83	83	118	105	143	120	310	41	85
Skilled-labour-intensive sectors	83	101	197	27	68	152	41	120	88	31	130
Labour-intensive sectors	75	88	37	196	379	71	52	345	52	416	87
Less capital and labour-intensive sectors	141	108	186	29	53	103	48	189	89	36	137
		Compa	rative ad	lvantages							
Capital intensity	х	х			х		Х		х		
Labour intensity				Х	х			Х		Х	
R&D intensity			Х			Х	Х				Х
Source: Commission services.											

and those as they apply to the 40 sectors most affected by 1992. For Denmark and Ireland, the poor quality of the estimate for industry as a whole does not allow us to draw any clear conclusions as to the comparative advantages of these two countries. By contrast, as regards the 40 sectors, Denmark and Ireland enjoy comparative advantages in capital-intensive industries and Ireland also shows good performances in high-technology sectors. This last result derives from equation (3) in Table 6.1, but the variable of intensity in R&D is only significant at the 20 % level.

The analysis of the 40 sectors also shows an advantage for Spain in capital-intensive sectors and for Greece in labourintensive sectors, which does not conform to the results obtained for industry as a whole. For these two countries, these advantages may be due to the protection of both tariff and non-tariff barriers and it is not clear whether they will continue to apply if these barriers are removed. Other reasons could also account for the differences between the results obtained for the 40 sectors and industry as a whole. Thus, if the share of intra-branch trade is higher in one particular case, it will be more difficult to distinguish the comparative advantages.

7. Adjustments in the most industrialized Member States

7.1. Sectoral performances and corporate competitiveness

For the most industrialized Member States, economic integration within the European market has a longer history, the means of production are comparable, and intra-branch trade dominates. Between themselves, these countries largely trade in substitutable goods. In this case, the comparative and collective advantages and disadvantages discussed in Chapter 6 may not be applied uniformly to all firms in a given branch or country. At their own level and regardless of sector, firms may enjoy competitive advantages that enable them to improve their share of the market, even if these enterprises belong to weaker sectors in the countries where they are established.

Amongst Member States enjoying a comparable level of economic development (Belgium, Germany, Denmark, France, Italy, the Netherlands and United Kingdom), there are no collective disadvantages from a general perspective which would affect the performance of firms to an excessively negative extent. The nature and quality of the infrastructures, the training of the workforce, and access to financing are comparable, and the unit wage costs do not differ greatly. The per capita dispersion of gross domestic product fluctuates within a limited margin: 102 in the United Kingdom and 113 in Germany, compared with a reference of 100 for the Community.

This explains why a country's performance at the sectoral level (coverage ratios, specialization index) does not necessarily correspond to the competitive position of all firms active in these sectors.

Thus, at any given moment in time, a Member State may find itself in a weak position in one sector (weak coverage ratio and specialization index) whereas certain national enterprises which are extremely competitive compared with the sectoral average may be successfully exporting and may begin to compete with firms in other Member States which are in a strong position in the same sectors. With the lifting of non-tariff barriers, it would therefore be a mistake to adopt too static a vision of comparative advantages and disadvantages. The competitive advantages of certain enterprises may in the medium term be extended to other enterprises, giving rise to a dynamism of comparative advantages (Abd El Rahman, 1988).

For industrialized Member States between which intrabranch trade dominates, the impact of the internal market is therefore of a less sectoral nature. With intra-branch trade dominating (economies of scale, product differentiation), firms influence market structures through their strategic decisions. Confronted with a burden of global restraints, firms have recourse to a wide range of possible strategies which produce different results in terms of both growth and profitablity (Abd El Rahman, 1988). Basically, these strategic choices can be of two different kinds: on the one hand, internal strategies for allocating the factors of production (of R&D, financing, production and distribution) and, on the other hand, external strategies (mergers, acquisitions, joint ventures).

For this reason, it is necessary in this respect to highlight, for the most industrialized Member States, the type and nature of the strategies applied by firms.

7.2. Internal strategies implemented by firms

From the perspective of the firm, the impact of the removal of non-tariff barriers will be felt across the full range of the

Component of value added	Possible nature of the impact
1. Research and development	Growth in the number of joint projects More homogeneous environment at European level
2. Supplies	Wider range of suppliers Lower prices
3. Logistics	Lower transport costs Relocation of storage facilities (better adapted to an integrated market)
4. Production	Increased production at each plant Reduction in the number of production plants
5. Marketing and distribution	Centralization of product management at European level Community-wide marketing campaigns
6. Consumers	Availability of a wider range of products Increased demand (growth effect) and lower product prices

value-added chain, that is, for all of a firm's activities which, taken together, produce value added.

Research and development

Community policy with respect to technical standards, whether the chosen approach is European standards or mutual recognition, will provide firms with a more homogeneous technological environment and will further promote cooperation between Community enterprises.

Moreover, the Community has adopted R&D programmes that touch on a large number of activities: information technology (Esprit, with an ECU 1,6 billion budget for the 1988-98 period), communication infrastructure (RACE, with an ECU 550 million budget for the period June 1987-May 1992) and industrial technologies (Brite, with an ECU 500 million budget for the 1989-92 period). Participating firms assume a share of the burden for research funding, the Community contribution usually being approximately 50 %.

Supply

Price reductions which are likely to result from the single market and reductions in transport costs will foster growth in intra-Community trade. We are therefore likely to see firms extending their range of suppliers. This is especially true for wholesale/retail operations. The creation of joint purchasing groups amongst large-scale European distributors clearly points in this direction.

The alliance concluded between Casino (France), Argyll (No 4 in the United Kingdom) and Royal Ahold (the Netherlands) is a good example. Between the three of them, these distributors represent 4 000 retail outlets in Europe, 1 600 of which are supermarkets. Total turnover for the three distributors amounts to ECU 17 billion. Other collaborative efforts have taken place. In association with the German Rewe Zentrale Handelsgesellschaft and the Dutch Vendex Food company, the GIB group (Belgium) and Paridoc (France) have formed a purchasing group known as Eurogroup.

Logistics

The lowering of transportation costs and the removal of customs controls facilitates the movement of goods between Community countries. According to the report on the cost of non-Europe, the internal market would permit an 8 to 15% reduction in transportation costs, which should likewise lead to a reduction in the number of storage depots required.

In the case of Philips, the value of stocks represent more than 23 % of total annual sales compared with approximately 14 % for manufacturers in the United States and Japan (Sleuwagen, 1989). This situation is in part explained by the necessity of maintaining an excessive number of storage depots. Today, large multinationals such as Kodak own 22 storage depots for their production. In the context of the single market, the corporate managers of this group intend to have only six storage depots for the entire Community market within five years. In the USA, for example, which has an equivalent market size, Kodak currently maintains only five storage depots and has a turnover three times as great as in Europe (Fitzgerald, 1989).

Production

For the large industrial groups, the completion of the internal market will facilitate, on the one hand, coordination of activities at the European level—since trade between parent companies and their subsidiaries will be facilitated —and, on the other hand, the growth of direct investment and foreign acquisitions. With decreased transport costs and a simplified coordination of production activities at the European level, the large European groups will choose to rationalize their production by reducing the number of plants and by increasing the volume of production per site.

Let us take the example of Unilever which is active in the detergents sector. In 1973, Unilever ran nine production units for detergents in nine different Member States of the European Community. In 1989, there were just four facilities left located in four different Member States (Italy, Portugal, Germany, the United Kingdom). The volume of production did not increase but productivity rose sharply (over 200 % in nine years) between 1978 and 1987 (*Financial Times*).

Nevertheless, it is impossible to generalize this type of business behaviour for all activities. If we use the approach suggested by Porter (1986) concerning international corporate strategy, we should make a distinction for products characterized by highly divergent national preferences in terms of taste, style, or culture and which would involve a different approach for each national market. In this case, corresponding not to volume markets but to differentiated markets (Buigues, Jacquemin, 1989), the groups could grant their national subsidiaries greater autonomy to adopt strategies with a national emphasis, free to centralize or specialize their European plants on different market niches.

The Swiss group Jacobs Suchard recently carried out a complete restructuring of its European production network. In fact, 11 small production units were closed or sold and

1 500 salaried staff were redeployed. Each country's supply will, from now on, be met by six factories ultra-specialized in each type of chocolate: one in Switzerland for Toblerone, one in Belgium for Côte d'Or, etc.

Marketing and redistribution

Here, the completion of the internal market could lead to an increased centralization of product management at the European level. Several examples of centralization strategies for commercial operations at the European level can be given.

The example of Colgate-Palmolive is revealing. Until 1988 this American multinational enterprise managed each national market independently. Colgate-Palmolive's subsidiary in each Member State was vertically integrated and self-sufficient, and distribution and marketing were independent for each national market. In September 1988, the group announced the creation in Brussels of a Board of Management for all European operations 'in order to be better prepared for 1992'.

Minnesota Mining and Manufacturing (3M), the American multinational that produces adhesive tape and a large number of domestic and commercial products, restructured its European production long ago (one or two factories for all of Europe). Thus no possibilities for establishing additional economies of scale remain. On the other hand, the company has set up a pan-European team charged with the task of re-evaluating the structure of the distribution networks. It will be a matter of moving from national networks to an integrated European network.

Commercial operations and advertising

Some European manufacturers are already applying a global marketing strategy at the European level. This is true, for example, of the Italian confectionery company Ferrero, which sells its products (Nutella, Tic Tac) all over Europe using the same marketing approach. L'Oréal adopts the same approach for all Community markets with certain of its hair care products.

Nevertheless, the brand images of one and the same product may also differ substantially depending on the Member State: Barilla noodles are viewed as a high-quality product on certain markets and an average-quality one on others. Advertising campaigns and sales strategies must therefore differ depending on the market.

This fragmentation according to tastes, history, or culture has fostered the application of market-dependent price policies. Unlike the conclusions drawn by the Cecchini report on the internal market, some critical economists (John Kay, 1989) stress that this fragmentation of markets will persevere after 1992 and that the internal market will therefore alter nothing with respect to the commercial strategies adopted by firms. This is in fact only possible to the extent that similar price policies are applied regardless of Member State. Otherwise, parallel imports within traditional distribution networks will render a medium-term convergence of prices probable.

Internal strategies-Results of the survey among European firms

In June 1989, a survey of European industrialists, by the Commission services, concerning the impact of 1992 on their future actions and projects was held. Three countries were not covered: Denmark, Luxembourg and Greece.

Firstly, the internal market's effect is clearest in the area of product adaptation and restructuring of production plants. Sixty-three per cent of firms surveyed thought the internal market would influence product decisions and 61 % believed this to be true for production. However, there was also a clear effect on distribution decisions (56 %) and those concerning research and development (55 %).

The considerable differences between answers from one Member State to another should also be noted. German industry put the greatest weight on decisions concerning production plant (82 %). This was also true of Portuguese industrialists and Italian industrialists who expected the internal market to have a marked influence on production strategy. By contrast, Belgian, French and British industrialists expected the main strategy decisions to concern the adaptation of products to the internal market. Finally, we can note that French industrialists expected most changes to affect strategic decisions relating to research and development (73 %).

Answers to the survey also provided information on the internal market's effect for each category of decision:

Research and development strategy

The firms gave equal weight to greater cooperation (net balance of 42 %) and greater utilization of the firm's resources (net balance of 44 %). Of course, these two answers are not mutually exclusive and firms could give a positive reply to both options proposed. In most Member States, the net balance for each of the two options was similar except in the case of German firms

Table B.4

Influence of the completion of the internal market on the strategies of industrial firms¹

									(%)
	B1	D	E1	F	I ²	NL	P ²	UK	EUR
Production plant									
Effect	50	82	25	73	62	36	52	43	61
No answer	1	3	6	14		3		10	6
Products									
Effect	70	64	61	77	55	45	18	66	63
No answer	1	3	8	_	—	5	_	7	3
Distribution									
Effect	57	64	53	58	53	42	28	53	56
No answer	3	0	10			6		10	5
Research and development									
Effect	53	50	56	73	49	36	18	61	55
No answer	5	6	9	_	—	3	—	7	4

As the questions were not worded in exactly the same way in Belgium and Spain, the results for these two countries cannot easily be compared with the others. In the case of Italy and Portugal, the non-respondents were eliminated from the sample and the percentages were calculated on the basis of the firms which replied only. Source: Commission services

which gave greater weight to internal R&D efforts, and Spanish firms, which in contrast felt a greater need for more cooperation between firms.

Production strategy

There was a clearly positive net balance in favour of increasing the size of production units rather than their number. In most countries the firms surveyed expected as a rule that the number of production units would remain more or less stable or even fall. Italy and Germany were the only clear exceptions. For these two countries we saw a net balance of some 15 % for an increase in the number of production units.

Product strategy

Overall, most of the firms surveyed expected the influence of 1992 to result in the need to adapt products to suit each new

national target market. Thus, a net balance of 38 % of firms expected it would be necessary to adapt their products while just 24 % expected demand for standardized products to increase.

The survey also provided information for different groupings of companies on the basis of size. The comparison of the questionnaire results for these size categories provides some interesting information.

Thus, in research and development, the large firms (over 1 000 employees) and the smallest firms (under 200 employees) least expect the internal market to have a positive effect on their cooperation with other firms. In this respect, a feasible explanation would be that while the larger firms have sufficient internal resources to finance projects themselves, the smallest firms are not involved in this area of activity to a significant extent. It is also interesting to note that in the field of production it is the smallest firms which expect to increase in the size of plants (30 % against 25 % for the larger firms).

Table B.5

Influence of the completion of the internal market on the strategies of industrial firms (net balance between positive and negative impacts)

										1.0
	В	D	E	F	IRL	I	NL	Р	UK	EUR
Research and development										
Greater coopertion Greater use of the firm's	26	30	39	44	63	47	20	18	66	42
resources	27	46	15	43	59	43	27	16	66	44
Production of plant										
Increase in size of production units	13	30	8	17	37	38		22	17	24
units	2	14	0	- 2	- 4	17	_	10	1	7
Products										
More standardized products More specialized products	19	21	9	29	34	33	16	14	28	24
(adapted to each market)	39	36	38	40	64	49	31	14	32	38

7.3. External strategies and company size

The external strategies (company acquisitions and mergers) observed since 1986 have been largely aimed at achieving an optimal size within the Community's internal market (Eighteenth Report on Competition Policy, 1989). External growth through acquisitions has been the preferred approach, since these are quicker and eliminate potential competitors. This desire for company growth basically poses the problem of the ratio between company size and the size of the market covered.

For Scherer (1975), the average size of industrial units is generally smaller in Europe than in the USA. The ratio between company size and market size is explained in the following way:

For one, some markets may be too small to support even a single plant of minimum optimal scale. And if buyers and government policy-makers prefer some diversity of supply sources, two or more independent plants may survive in small markets, each plant too small to enjoy all economies of scale. The smaller the market is for any given (positive) growth rate, the more time it takes to accumulate a demand increment sufficient to absorb the capacity of a lumpy new MOS plant. Also, in markets small relative to the minimum optimal scale, oligopoly is likely, and the resulting concern for pricing interdependence and strategic position can aggravate propensities toward investment in inefficiently small plants' (Scherer *et al.*, 1975, pp. 92-93).

The above Scherer quote is particularly relevant to sectors protected from external competition by non-tariff barriers. This is the case for those sectors tied to public-procurement markets where the policy of supporting 'national champions' has reinforced this sort of development. The impact of removing non-tariff trade barriers by enlarging the size of markets should therefore lead to growth in the size of firms operating on these markets.

In an initial econometric study, Müller and Owen (1985) demonstrated the positive impact of trade growth on company size. In the research conducted on the cost of non-Europe, Schwalbach (1988) for Germany and R. Helg and P. Ranci (1988) for Italy followed the approach taken by Müller and Owen to measure the impact of growth in intra-Community trade created by the internal market on the size of production units in the sectors where unexploited economies of scale existed.

For Schwalbach (1988), a 10% growth in exports could entail a growth in company size of 8,5% in Germany and 19,4% in the United Kingdom on the basis of structural data from 1982.

For the 40 sectors most affected by the internal market, information is available for the four largest countries on the average size of non-craft enterprises (over 20 employees). Table 7.1 presents a comparison of this average company size (number of employees per enterprise). In general, Germany has the largest average size but these results are not systematic.

In the case of France, average company size is greater than the German 'standard' in certain high-technology sectors (office equipment, medical/surgical equipment), in activities associated with the food-processing industry (beer, water, noodles) where BSN plays an important role, and in certain intermediary goods industries where France has been traditionally well-positioned: glassware (Saint Gobain) and rubber (Michelin). On the other hand, the size of French companies is limited in capital goods, especially in machine tools.

Italian industry is generally characterized by medium-sized enterprises with the exception of those sectors already mentioned in the case of France of office equipment (Olivetti), medical/surgical equipment, or beer.

For these three industries, medium-sized enterprises smaller than those of the three other major countries are especially prevalent in Germany. Italian industry performs especially well in the machine-tool industry where the average size of its enterprises is limited. As has been shown elsewhere (Abd el Rahman, 1986), medium-sized enterprises can obtain good export results. This is, of course, all the more true for fragmented sectors, i.e. those sectors where product differentiation is great with respect to quality, design, after-sales service and where economies of scale remain limited (P. Buigues and A. Jacquemin, 1989).

In the United Kingdom, one generally finds larger-sized enterprises, situated midway between the French and German positions. This is especially true in the area of shoes, clothing and ready-to-wear clothing (Courtaulds is second largest in the world), several food-processing industries (Unilever, Hanson Trust, Dalgety), pharmaceuticals, and medical/surgical equipment.

For the medium-sized industrialized countries (Belgium, Denmark, the Netherlands), we unfortunately do not have sufficient data to draw conclusions on sectoral disaggregation at this level. It is nevertheless clear that, with the exception of the Netherlands where multinationals are omnipresent in the industrial fabric (Philips, Shell, Unilever), the average company size is smaller than in the larger countries. This is, therefore, the context in which recent developments in corporate mergers are to be viewed. In fact, if one were to accept the hypothesis that the internal market will foster growth in company size, external growth is one of the possible responses for enterprises faced with this new challenge. Restructuring measures primarily involve transfrontier operations, which are required to facilitate rapid access to other markets.

7.4. Growth of merger operations within European industry

In its annual report, the Directorate-General for Competition (European Commission) comments on the growth in the number of operations involving takeovers, minority holdings, and joint ventures carried out by the top 1 000 European industrial enterprises. We thus have a comprehensive source of information for the 1982-89 period, enabling the following conclusions to be drawn:

The total number of acquisitions (majority holdings or mergers) effected by the largest European industrial enterprises is constantly growing. The number of such operations has doubled every three years, rising from 208 in 1984-85 to 492 in 1988-89.

National-type operations (between two enterprises belonging to the same Member State) largely dominated between 1983 and 1987. Almost two-thirds of the number of acquisitions recorded involved this type of operation. Since 1987, more rapid growth has been noted in the number of acquisitions involving Community enterprises belonging to two different Member States. In 1988-1989, such operations represented 40 % of the total number of acquisitions effected. International-level operations involving two enterprises —the one Community, the other non-Community—accounted for approximately 15 % of the total number of operations recorded. This figure is more or less stable for the period under review.

One can measure acquisitions by taking into consideration the combined turnover resulting from the merger of the two enterprises involved. Overall, acquisitions involving two enterprises whose cumulated turnover is in excess of ECU 1 billion represented 75 % of the total number of operations carried out by the top 1 000 European industrial enterprises. During the 1983-89 period, these two categories of operations (total operations and operations of over ECU 1 billion) experienced parallel development. In 1989-90, 170

Table 7.1

Size of firms in the 40 sectors - Number of employees per firm in the period 1983-87

			(reference: Germany		
		D	F	1	UK
	High-technology public-procurement markets				
	Group 1				
330	Office machines	100	107	146	36
344	Telecommunication equip.	100	40	62	57
372	Medico-surgical equip.	100	110	135	157
	Traditional public-procurement or regulated markets				
	Group 2				
257	Pharmaceutical products	100	75	70	142
315	Boilermaking, reservoirs, sheet-metal containers	100	38	57	68
362	Railway equipment	100	68	84	226
425	Wine & wine-based products	100	97	53	:
427	Brewing and malting	100	232	232	249
420	Soft drinks & spa waters	100	189	/0	135
	Group 3				
341	Electrical wires & cables	:	:		:
342	Electrical equipment	100	11	34	58
301 417	Snipbullding	100	45	53	96
421	Cocoa, choc. & sugar confec.	100	64	42	107
	Sectors with moderate non-tariff barriers				
	Group 4				
	Concerner goods				
245	Electronic goods	100	20	27	20
345	Domestic type elec. appl	100	39	27	39
351	Motor vehicles	100	41	42	
438	Carpets, linoleum, floor cov.	100	59	38	95
451	Footwear	100	92	32	116
453	Clothings	100	86	66	122
455	Household textiles	100	:	90	158
491	Jewellery, goldsmiths' & silversmiths' wares	100	115	69	98
493	Photog. & cinemat. labs	:	:	:	:
TTT	Games, toys & sports goods	100	95	00	95
221	Capital goods	100			
321	Agric. machin. & tractors	100	29	26	48
322	Textile & serving machines	100	55	40	46
323	Machines for foodstuffs ind	100	55	30 53	32
325	Plant for mines, etc.	100	64	43	75
326	Transmission equipment	100	57	43	37
327	Other specific equipment	100	40	26	43
347	Lamps and lighting equipment	100	101	75	115
364	Aerospace equipment, manuf. and repairing	100	98	96	66
	Intermediary goods				
247	Glassware	100	155	49	90
248	Ceramics	100	62	34	84
251	Basic indust, chemicals	100	33	13	19
230	Wool industry	:	:	:	:
432	Cotton industry	100	60	55	65
481	Rubber industry	100	108	33	50
	,	100	100	57	50

Source: Eurostat.



Table 7.2

Mergers and	acquisitions	by	nationality	of	the	firms	involved	
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Year	National	EC	International
1983-84	101	29	25
	(65,2)	(18,7)	(16,1)
1984-85	146	44	18
	(70,2)	(21,2)	(8,7)
1985-86	145	52	30
	(63,7)	(23,0)	(13,3)
1986-87	211	75	17
	(69,6)	(24,8)	(5,6)
1987-88	214	111	58
	(55,9)	(29,0)	(17,8)
1988-89	233	197	62
	(47,4)	(40,0)	(12,6)

NB: Figures in brackets show the percentage of the total number of operations surveyed. *Source:* European Commission.

operations involved enterprises whose cumulative turnover amounted to over ECU 5 billion, that is, the threshold chosen by the regulation on mergers adopted in December 1989. Not all these operations will be affected by the new regulations which also include other restrictive clauses.

Analysing the growth in the level of acquisition operations according to the nature of the operation (national, Community, international) and the combined turnover of the enterprises involved (threshold of ECU 2, 5 and 10 billion) provides an interesting source of information. In 1988-89, national-level operations accounted for 41 % of the total number of acquisitions recorded for a threshold of ECU 2 billion, but only 27 % for a threshold of ECU 10 billion. On the other hand, Community-level acquisitions comprised 38 % of all operations in excess of ECU 2 billion and 50 % of all operations exceeding ECU 10 billion. National-level operations comprise, a priori, acquisitions involving sums less than those at Community level, which underscores the importance of the regulation on mergers adopted in December 1989.



Table 7.3

Mergers and acquisitions by size of the firms involved (cumulative turnover)

1988-89	National	EC	International	Total	
More than					
ECU 2 billion	118	110	60	288	
	(41)	(38)	(21)	(100)	
More than					
ECU 5 billion	60	72	38	170	
	(35)	(42)	(23)	(100)	
More than					
ECU 10 billion	29	53	24	106	
	(27)	(50)	(23)	(100)	

NB: Figures in brackets show the percentage of the total number of operations. *Source:* European Commission.

A distinction may also be made between the types of aforementioned acquisition operations and other types of operations (minority holdings and joint ventures). Developments recorded for the period 1982-89 clearly indicate the extent to which acquisitions are coming to be increasingly preferred to other forms of control. In 1985-86, minority holdings accounted for approximately 57 % of all acquisitions recorded, whereas in 1988-89 they only represented 32 %. Finally, the creation of joint ventures takes place primarily at international or Community level and more rarely at national level.



External strategies-Results of the survey among firms1

The results of the questionnaire confirm that mergers and acquisitions of majority holdings are generally preferred to minority holdings or jointly-owned subsidiaries as far as the impact of the internal market is concerned. Thus, for the Community as a whole, almost 50 % of the firms surveyed expected an increase in takeovers compared with less than 20 % opting for minority holdings and less than 30 % for jointly-owned subsidiaries.

As regards takeovers, equal weight was given to operations at national (48 %) and Community (52 %) level. However, in certain countries, the accent was above all on national operations (Italy or Spain). By contrast, in other countries, the emphasis was on operations at Community level (Belgium, the Netherlands, United Kingdom). These results confirm the dominant position of British and Dutch industrialists in transfrontier acquisitions inside Europe.

Acquisitions of minority holdings are, on the other hand, primarily envisaged at Community level. An average of 19% of firms envisaged an increase in the acquisition of minority holdings at Community level compared with just 11% at national level. Acquisitions of minority holdings are often a first step in working with a partner situated in another Member State and they can ultimately lead to the acquisition of a majority holding.

¹ See preceding box.

Between 20 and 25 % of firms surveyed in Germany, France, Italy, the Netherlands and the United Kingdom also expected to increase acquisitions of holdings at Community level.

Finally, creations of jointly-owned subsidiaries are even more clearly oriented towards the Community market than acquisitions of minority holdings. It is in the most industrialized countries of the Community (Germany, France, the Netherlands or the United Kingdom) where expectations regarding the creation of jointly-owned subsidiaries are the highest (over one third of the firms surveyed).

Finally, it should be stressed that it is in Germany that the highest percentage of firms expect to create jointly-owned subsidiaries at the national level (20%). This can be explained by a national market of sufficient size to provide these companies with greater opportunities within their own market.

Graph B.1 illustrates the differences in behaviour as regards external strategy depending on the size of firm. It is clear that the bigger the category of firm the more firms envisage takeovers at the Community level.

The comparison of the percentages of firms expecting to increase takeovers at the national and Community levels is interesting. For firms with under 200 employees, more firms expect to

undertake takeovers at the national level, while the reverse progressively applies as the size of the firms increases. This clearly shows that such transnational operations are more expensive and more complex for smaller firms than for larger firms. The examination of the results for the creation of jointly-owned subsidiaries on the basis of size provides less discriminating information. Irrespective of size, firms are in fact equally numerous in anticipating the creation of jointly-owned subsidiaries at the Community level.

Table B.6

Influence of the completion of the internal market on the external strategies of firms¹

									(%)
	В	D	E	F	Ι	NL	Р	UK	EUR
Increase in number of mergers and acquisitions of majority shareholdings									
In the country	40	54	21	51	75	29	43	29	48
In the European Community	63	54	15	56	. 67	46	45	51	52
In the world	46	33	17	27	47	15	23	18	30
Increase in acquisitions of minority shareholdings									
In the country	3	14	0	11	15	16	12	8	11
In the European Community	5	20	2	20	24	25	13	23	19
In the world	4	12	0	6	17	9	4	10	10
Increase in jointly-owned subsidiaries									
In the country	5	20	1	18	12	13	_	13	14
In the European Community	9	33	3	32	25	42		32	28
In the world	8	20	4	13	12	8	_	9	13

¹ The firms questioned could tick more than one box; the sum of the percentages is therefore greater than 100. *Source:* Commission services.


7.5. External growth policies within the Member States

In the most industrialized Member States of the Community, the large industrial enterprises mentioned above have implemented active strategies of external growth. Of course, this development has also occurred on a worldwide level, but growth in the number of acquisitions since 1982 has been strongest in Europe, higher than in Japan, the USA and the rest of the world (BIPE, Cambridge, IFO, Prometeia, 1990).

Nevertheless, the individual Member States have not all been affected in the same way by these restructuring processes. A comparison of the direct foreign investment stocks of the most industrialized Member States reveals substantial differences which cannot be explained solely by differences in accounting systems (Table 7.4). British and Dutch enterprises own direct investment stock abroad that lacks any correlation with the economic weight of these countries compared with other Member States. Thus, in 1988, direct investment stock represented 36 % of the GDP in the Netherlands and 23 % in the United Kingdom, compared with 7 % in Germany and France and 4 % in Italy. The capacity to respond strategically to the sectoral impact of the internal market will be greater for those enterprises that already have a substantial international orientation than for those traditionally restricted to their national market.

For a more precise comparison of external growth strategies adopted by industrial enterprises within the Member States, data are available on the volume of transfrontier transactions (company purchases or sales) thanks to KPMG data (1990). As regards the purchase of non-national enterprises (Table 7.5), the data available for the past 12 months (September 1988 - September 1989) serve as an interesting source of information. First of all, confirmation is given of the fact that British enterprises are the most active with USD 41,9 billion in acquisitions of non-British companies, or 60 % of the total number of transnational acquisitions within the Community. French enterprises rank second with a total of USD 16,1 billion (23,2 % of the total), followed by Dutch enterprises with USD 3,8 billion, and German and Italian enterprises with USD 2,4 billion (3,5 % of the total). This situation reveals substantial disparities among Member States resulting from specific factors of a differing nature, which will be discussed below.

If the examination of transfrontier acquisitions is limited to those operations carried out within the Community, the resulting classification is considerably different. For the period under review, French enterprises were the most active (USD 6,8 billion) followed by British (USD 5,2 billion), Italian (USD 1,5 billion) and German enterprises (USD 1,3 billion).

As regards the countries in which company purchases are effected (Table 9.6), once again we can see the importance of the United Kindgom with USD 18,3 billion in foreign sales of British enterprises (55,7 % of the total), France taking second place (USD 3,9 billion or 11,9 % of the total), the Netherlands third place (USD 2,7 billion and 8,2 % of the total), and Germany fourth place (USD 2,5 billion and 7,6 %).

Of a total of USD 32,7 billion dollars spent on the acquisition of Community enterprises, three countries (United

Table 7.4

Stock of foreign investment¹

	Direct inves (billion cu	tment stocks rrent USD)	Growth rate	Direct investment stocks as % of GDP 1988
	end 1982	end 1988	in %	
D	39	89	128	7
F	24	66	175	7
[17	33	94	4
NL	53	82	55	36
UK	87	183	110	23
Total five countries	220	453	106	-
USA	222	326	47	7
Japan	48	129	169	5

¹ These figures are approximate because there are differences in the accounting definition of direct investment stocks. Thus comparability is not guaranteed. Source: Europe in 1994, Economic outlook by sector 1990.

Table 7.5

Acquisitions by firms (September 1988-September 1989)

Nationality of purchaser	EC	On the markets of North America	Rest of the world	Total Sept. 1988- Sept. 1989	Total year 1988
В	60	726	_	786	
DK	396	69	6	471	
D	1 344	1 081	39	2 464	2 752
E	150	102		252	—
F	6 788	8 328	985	16 101	11 162
IRL	773	114	93	980	
I	1 538	689	228	2 455	1 377
NL	737	2 605	504	3 846	1 276
UK	5 190	35 686	1 028	41 904	44 530
Other	17	100	46	163	1 229
EUR 12	16 993	49 500	2 929	69 422	62 326

Kingdom, France, the Netherlands) account for 76 % of this total and 52 % of this amount derives from purchases carried out by Community enterprises. American enterprises accounted for 26,8 % of these purchases and the remainder came for the most part from the EFTA countries (Switzerland, Austria, Finland, Norway, Sweden, Iceland).

These data provide an initial insight into the status of the company acquisition market within the European Community. They show that the Member States are not in a similarly open position on the corporate market and that substantial asymmetries remain.

Table 7.6

Sales of firms (September 1988-September 1989)

					(million USD)
Nationality of seller	EC	On the markets of North America	Rest of the world	Total Sept. 1988- Sept. 1989	Total year 1988
В	191	_	134	325	
DK	13		20	33	_
D	1 565	15	930	2 510	1 709
E	1 780	62	278	2 1 2 0	_
F	2 811	799	291	3 901	4 280
IRL	573			573	_
I	1 354	51	125	1 530	2 888
NL	1 822	810	88	2 720	2 656
UK	6 478	7 043	4 782	18 303	17 741
Other	406	30	318	754	2 149
EUR 12	16 993	8 810	6 966	32 769	31 423
Source: KPMG.					

As various surveys of company managers (see box on p. 61) have indicated, the completion of the internal market clearly involves the need for an active presence in a considerable number of Member States. This presence may be obtained through acquisitions or holdings in foreign firms already present on the targeted geographical market, or through direct establishment on the market (commercial subsidiary or production unit).

In order to be aware of all possible types of operation, it would be useful to have further information on the flows of direct investment between Member States. These direct investment flows comprise holdings exceeding a certain amount, reinvested profits from foreign subsidiaries, and the start-up capital required for creating subsidiaries. Unfortunately, the differences in definition here, too, complicate all forms of meaningful comparisons. W. T. Molle and R. L. A. Morsink (1989) calculated a double entry matrix for the flow of Community capital for the 1975-83 period (Table 7.7).

These data confirm the dominant role played by British and Dutch firms but, for the period under review, award most importance to Germany. A more detailed analysis of financial market structures in the Member States will enable us to shed more light on these differences.

7.6. Fragmentation of EC stock markets

The fragmentation of the stock markets may be illustrated by first taking the top 100 enterprises with respect to turnover for each Member State and then separating enterprises quoted on the stock exchange from those which are not, that is, those whose shares cannot be purchased on the stock market (family businesses or subsidiaries). The figures differ considerably between the Member States where the majority of the large groups are quoted (United Kingdom, France) and those where only a minority, less than one third, are quoted (Belgium, Denmark, Spain, Ireland, Italy, the Netherlands). As quantitative data may be deceptive, it is useful to supplement such information with value data.

In order to ascertain the economic importance of companies quoted on the stock exchange, one often takes the market value of all companies quoted on the exchanges of one country and compares this with the gross domestic product. Using this indicator, Table 7.8 presents a comparison for each Member State since 1988. The index of 100 for the Community corresponds to a global market value of ECU 1 370 billion, calculated for all companies quoted on European stock exchanges, compared with a gross national product for the Community of approximately ECU 4 000 billion, or around 34 %. The differences between Member States

Table 7.7

Direct flow of investment in billions of ecus between Member States, 1975-83

From/to	B/L	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12	Others	Total	(%)
B/L		0.0	0.6	0.0	03	1.0	0.0	0.5	0.4	0.0	0.2	3.0	23	53	49
DK	0.0		0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.7	1.1	1.0
D	1.8	0.2		0.1	0.7	1.8	0.1	0.6	0.3	0.1	1.1	6.8	16.9	23.7	22.0
GR	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
E	0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.0	0.1	0.0	0.2	1.0	1.2	1.1
F	0,9	0,0	0,9	0,0	1.3		0,0	1.0	0,4	0.2	0.7	5,4	11.0	16.4	15.1
IRL	0,0	0,0	0,0	0,0	0,0	0,0		0,0	0,0	0,0	0,1	0,1	0,1	0,2	0,2
Ι	0,1	0,0	0,1	0,1	0,1	0,5	0,0	_	0,0	0,0	0,0	0,9	3,7	4,6	4,2
NL	1,1	0,0	0,3	0,0	0,4	1,3	0,5	0,2		0,0	3,4	7,2	13,6	20,8	19,2
Р	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0		0,0	0,0	0,0	0,0	
UK	0,6	0,2	1,4	0,1	0,5	1,4	0,7	0,5	1,2	0,1		6,7	28,5	35,2	32,4
EUR 12	4,5	0,4	3,5	0,3	3,3	6,1	1,3	2,8	2,3	0,5	5,7	30,7	77,8	108,5	
Others	4,0	0,5	5,2	0,9	3,4	5,8	2,4	3,0	6,8	0,2	16,2	48,4			
Total	8,5	0,9	8,7	1,2	6,7	11,9	3,7	5,8	9,1	0,7	21,9	79,1			
(%)	10,7	1,0	11,0	1,5	8,5	15,0	4,7	7,3	11,5	_	27,7				
C. WTM M	(P		C 1	1.14.14	000 5 4							

Source: W.T.M. Molle and R.L.A. Morsink, European direct investment in Europe, Greenback, May 1989, pp. 5-6.

are also considerable in this regard, since the economic importance of companies quoted in the United Kingdom (287) and the Netherlands (151) lies above the 150 index, compared with an index of less than 61 for countries such as France, Germany, Italy and Greece.

However, many countries are quoted on the British and Dutch stock exchanges which do not originate in these countries, a fact which could lead to false comparisons. If we restrict ourselves for the moment to national enterprises quoted on the stock exchange (Table 7.9), the same imbalance exists because British companies occupy a dominant position on the Community market with a stock-exchange capitalization of ECU 594 billion in 1988 or 43,4 % of the total stock-exchange capitalization in the Community and 42,8 % of all firms quoted on the stock exchange. This factor in itself indicates that British enterprises are very much present on the stock-exchange markets, both as the target of takeover bids and as the companies most active on the acquisitions market. In the United Kingdom, a study carried out by the Bank of England (quoted in Benje, 1989) on the issuing of shares by 95 British enterprises between July 1986 and August 1987 demonstrates that 50% of the funds raised as a result of these issues were used for company acquisitions within the six months that followed. The importance of a large stock market is thus a necessary condition for growth in company transactions. Indeed, nearly 50% of direct investments abroad made by British enterprises involve company acquisitions.

By contrast, in Germany, numerous medium-sized enterprises tend to be family businesses and prefer to procure financing from banks rather than enter the financial markets. The legal form adopted by German companies (GmbH, companies in individual or collective ownership) does not facilitate their admission to the stock exchange.

Furthermore, takeover bids are hard to imagine in Germany due to the sizeable stake of the banks in company capital.

Table 7.8

Enterprises quoted on the stock exchange - 1988

	В	DK	D	E	F	IRL	I	NL	UK	EC
Number of enterprises ¹ quoted on the stock exchange in the top 100 groups	27	30	45	33	55	12	26	23	67	_
Relative economic weight of enterprises quoted on the stock exchange (in % of GNP). Base EC = 100	107	87	58	84	61	89	26	151	287	100
¹ Of the top 400 enterprises in the USA, 99% are quoted on the stock exchang <i>Source:</i> Booz Allen.	e compared	d with 54%	in the EC.							
Table 7.9										
Domestic enterprises quoted on the stock exchange - 198	8									

	BLEU	DK	D	E	F	GR	IRL	Ι	NL	Р	UK	EC
Stock exchange capitalization (billion ECU)	58	23	207	75	192	4	8	115	89	5	594	_
Number of companies quoted on the stock exchange as % of Community total	5,1	5,6	8,6	7,9	13,2	2,6	1,3	4,5	5,0	3,4	42,8	100
Number of domestic companies quoted on the stock exchange (December 1989) ¹	_	_	628	368	462	_	_	211	251	_	2 015	_
Number of international companies quoted on the stock exchange (December 1989) ¹	_	_	535	0	223		_	0	229	_	544	_
Data not available for BLEU, DK, GR, IRL, P.												

Source: Booz Allen, International Stock Exchange, London.

In this manner, the Deutsche Bank holds a major share in Daimler Benz, the largest German construction firm (Philipp Holzmann), and the Karstadt chain. Moreover, smaller shareholders can entrust their voting rights to the bank holding their securities in deposit. During general meetings, banks enjoy an extremely high percentage of voting rights on the numerous supervisory boards of limited companies. Deutsche Bank thus has a seat on several hundred supervisory boards of German enterprises.

In the case of France (Banque de France, 1989; Fleuriat, 1989), a very high concentration of acquisitions and new operations abroad has been noted. Twenty companies account for 50 % of overall direct investments made by French enterprises abroad and these 20 companies have direct control over 360 foreign companies.

Finally in Italy (Booz Allen, 1989), five companies alone account for 64 % of the total value of the Milan stock exchange (Generali, FIAT, IRI, Ferruzzi, De Benedetti). Here, too, one finds a very high concentration of market capital distributed among a limited number of companies which, in the case of several of them, are in turn directly or indirectly controlled by a small number of important families.

The financial markets are thus structured in very different ways, which incontestably influences the strategies adopted by companies faced with the impact of the internal market. The choice between internal or external growth and of the means of financing this growth (through banks or via financial securities) will therefore depend in part on the financial environment in which the enterprise is developing. The Commission has already proposed a whole series of measures to facilitate the free movement of capital and to harmonize at least some of the stock-exchange regulations. This is the case for the directive involving the obligation to report substantial holdings in companies quoted on the stock exchange. As soon as an enterprise exceeds the holding thresholds set by the directive, it must report that these thresholds have been exceeded. This is also the case for the draft directive which provides that the potential purchaser of more than one third of a company's shares is under the obligation to make an offer for the total sum of its capital.

In addition to these structural differences among stock markets, which require a greater amount of transparency, there are also regulatory and legal barriers which are currently being examined attentively by the services of the Commission.

7.7. Obstacles to the development of transnational operations in the European Community

The creation of an integrated internal market in Europe comparable to that existing in the USA entails the creation of truly European enterprises which operate in a non-discriminatory manner throughout the Community. In fact, one of the aims of the internal market is to allow enterprises to operate anywhere in the Community without being subject to regulatory or institutional barriers. One of the principal benefits of the internal market derives from this capacity for enterprises to become truly European enterprises, that is, to extend their activities to include all other Member States.

In the majority of sectors, even those traditionally open, one finds enterprises that enjoy a substantial market share in their Member State of origin and more or less marginal market shares in the other Member States. Even in an already open market sector such as that of motor vehicles, Fiat dominates the Italian market, Renault and Peugeot the French market, and Volkswagen-Audi and Mercedes the German market. This is also the case for computers where each national manufacturer is most present on the national market: Bull in France, ICL in the United Kingdom, Olivetti in Italy, Siemens-Nixdorf in Germany. Manufacturers with a comparable market share in each of the Member States are, in effect, quite often multinational American companies (IBM, Coca-Cola), which explains why these companies are sometimes more adept than their European counterparts in taking advantage of the opportunities offered by the integrated internal market.

The internal market could, of course, present considerable dangers for European consumers, namely the creation of dominant positions on certain markets. As a recent report emphasized, merger and takeover operations are not always guided by a quest for economic efficiency and can also lead 'to the creation of multinational oligopolies, whether controlled by third countries or not, which are susceptible to abusing their dominant position; to new collusive behaviour involving the division of geographic or sectoral markets; to an intensification of State subsidies to protect "public or private national champions" (*European Economy*, May 1989). The adoption in December of the regulation on the control of mergers at European level constitutes a vital first step which will make it possible to respond to risks of this kind.

On the other hand, in order to ensure optimal transfrontier cooperation and an optimal presence on different markets, barriers obstructing the development of transfrontier operations must be removed. Structural barriers resulting from the nature of the markets themselves will be more difficult to remove, whereas other legal or regulatory barriers can be dealt with by national or Community authorities.

7.7.1. Fiscal barriers to transfrontier operations

Current corporate fiscal legislation in the Member States differentiates between national and transfrontier company activities, the latter being penalized with respect to the former. The Commission has already drawn up three proposals which aim to facilitate cooperation between firms belonging to different Member States.

'Mergers' directive: as a general rule, when a merger, a sale or purchase of assets, or share swaps occur between enterprises of the same Member State, the capital gains generated through the operation are only taxed when these asset values have actually been realized. In contrast, such treatment is not provided for transfrontier operations of a similar kind. There is, therefore, a substantial fiscal cost involved which could eliminate all interest in transfrontier merger operations. The directive put forward by the Commission proposes that capital gains not be taxed until the asset values have actually been transferred. This directive is aimed primarily at the creation of European companies through mergers, as provided for in the European company statute presented by the Commission in August 1989.

'Parent companies and subsidiaries' directive: in the vast majority of Member States, a deduction at source is applied to dividends paid by a subsidiary of a Member State to a parent company in another Member State. This directive aims at eliminating this double taxation and provides that the Member State of the subsidiary abolish all deductions at source and that the Member State of the parent company deal with this dividend in an appropriate manner.

'Arbitration procedure' directive: many Member States do not have national provisions permitting an enterprise to make a compensation between the profits and losses of its established branches or foreign subsidiaries. The Commission's proposal plans for provisions enabling the elimination of double taxation within a predetermined time period, either by generalizing amicable procedures already provided for in bilateral agreements, or by introducing an arbitrational procedure in the event that amicable procedures fail.

In more general terms, the different corporate tax systems, rules relative to establishing taxes or determining profits, directly influence where a company chooses to set up its transfrontier subsidiaries (A. Chevalier, GUPTA, 1990). Nevertheless, in conformity with the principle of subsidiarity, Member States remain free to establish their own taxation systems, unless this results in a substantial distortion which would then justify the transfer of these responsibilities to Community authorities. This also explains why the Commission withdrew its 1975 proposal concerning the harmonization of systems of corporate tax and the taxing of dividends at source.

7.7.2. Regulatory and legal barriers

Substantial barriers to takeover and exchange bids exist in a certain number of Member States. Hostile takeover bids are impossible in practice.

In this area, the Commission is preparing a draft communication on the regulatory obstacles which make it possible for 'preferred shareholders' to retain control of an enterprise at the expense of those launching a hostile takeover bid, that is, a bid contested by the Board of Directors of the company attacked. From this perspective, it is possible to distinguish between two major categories of regulatory obstacles.

The first category involves possibilities afforded by certain national legislation of derogating from the principle of 'one share—one vote'. If these derogations become too substantial, they enable a predominant share to be allocated to preferred shareholders.

The second category concerns a company's right to protect its capital, either by granting its managers the possibility of purchasing their own shares during a takeover bid, or by allowing them to issue new shares or sell part of the assets. For these latter two points, existing provisions in the 'company law' directives of the Community already forbid managing bodies to obstruct the successful completion of a takeover bid by using measures of this kind without the approval of the general meeting of shareholders.

7.7.3. Two scenarios in the Europeanization of enterprises

All of the obstacles discussed here clearly show that, in the medium term, two scenarios are possible:

The 'Europeanization of enterprises' scenario

Within the framework of this scenario, the Member States will adopt the measures to permit the creation at Community level of a fiscal and regulatory environment adapted to intensifying the internal market. This scenario does not, of course, imply a complete harmonization at Community level of the fiscal and legal systems which apply to enterprises (harmonization of taxes, of regulations applied with respect to takeovers, etc.). The Member States must remain free to determine their own legislation in this area to the extent that distortions among the various systems do not give rise to substantial asymmetries amongst Member States. Moreover, tax or regulatory barriers that would apply different treatment according to whether a part of a company's activity is located in the company's Member State or in another Member State must be eliminated in the medium term.

For the most industrialized countries of the Community already widely involved in intra-industry trade between themselves, this is an essential factor. In the final analysis, it means that enterprises in these countries may operate on all Community markets without discrimination of any kind, and that the choice of location for their registered office and production units may be made without discrimination between these countries. After 1992, the integration of Member States within an economic and monetary union will eventually mean that the trade deficits or unfavourable coverage ratios of one Member State in one sector will, of itself, be insignificant. The Community as a whole should benefit from enhanced economic efficiency. Truly European enterprises will, over and above the nationality of their shareholders, be able to implement strategies contributing to the collective well-being of the Community. This scenario also implies that enterprises accept that national representation at their highest levels of management must be in balance with their presence on the markets of the different Member States. At the moment, inquiries into the nationality of managers within the largest European industrial groups have revealed that the nationality of the parent company is predominant in the uppermost echelons. This scenario therefore involves not only that a whole series of regulatory and legal barriers be eliminated, but also that the geographic mobility of managers become a reality and that all provisions that could facilitate such a development be implemented.

Outside the Community market, these European enterprises will therefore be perceived as such by their partners, whereas today they are too often seen as enterprises of a single Member State.

'National champions' scenario

In the context of this scenario, a certain number of tax or regulatory obstacles will persist at a level where they will interfere with a firm's choice of where to establish its offices, and will give rise to a situation incompatible with an integrated market. Of course, in some cases, the play of market forces alone between competing national regulations could, in the end, eliminate highly flagrant distortions. However, some Member States would be able to engage in tactics that could prove harmful to all, for example by excessively lowering corporate taxes in order to attract foreign investors or by introducing protective measures against transfrontier takeovers while their enterprises were capable of operating in other Member States.

It is clear that in the context of this scenario the policy of national champions would gain prevalence over transfrontier transactions. Several recent operations have indicated that when faced with the demands of the internal market, public authorities sometimes seek to bring together national enterprises in order to achieve the critical size to confront enterprises from other Member States. This national logic, which is at times contrary to a firm's interests in terms of its activities portfolio or plans for geographic expansion, sometimes runs counter to collective interests.

The most industrialized countries of the Community where large groups have the highest visibility and where the 'national champions' policy has been the rule to date are more concerned than others by the development towards one scenario or the other. In particular, the opening of publicprocurement markets to non-national suppliers will be a test of the real volition to overcome the logic of 'national interest'. The adoption of directives represents a first step which must be followed by concrete changes in the behaviour of the economic agents.

In conclusion, it is important to stress that the two scenarios presented here have been over-contrasted in the interests of clarity. Thus, as already mentioned at the beginning of this section, not all alliances between firms of different Member States are necessarily beneficial and the new regulations controlling Community-wide concentrations must make it specifically possible to avoid certain alliances which could harm competition on the Community market. Also, not all restructuring at national level is to be rejected as a bad thing and those in the interest of technical and economic efficiency may also have a positive impact.

8. Medium-term adjustments in the southern Member States

8.1. Heterogeneity of the least developed EC countries

It is clear that the four less developed EC countries can be distinguished from the eight other Member States by virtue of their industrial structure and standard of living measured by per capita GDP. In this section, we are going to concentrate on their distinguishing characteristics both as regards macroeconomic performances and industrial structure.

8.1.1. Macroeconomic performances

Per capita GDP in the four less developed EC countries is below the Community average. In 1989, it represented 54 % of the Community average in Greece and Portugal, 66 % in Ireland and 76 % in Spain. Greece can be distinguished from the three other Member States in that the catching-up process has ended and even reversed. In fact, per capita GDP has fallen in Greece since the early 1980s when it represented 58 % of the Community average (Graph 8.1).

In Spain, Portugal and Ireland, recent economic trends have been largely favourable. Thus, in the period 1985-89, these three countries showed a growth in GDP above or equal to (in the case of Ireland) the Community average (3,1%), i.e. 4,6% in Spain, 4,4% in Portugal and 3,1% in Ireland (Graph 8.2). The source of this relatively high growth lies in the dynamism of investment activity, which is particularly evident in the manufacturing sector: +15,7% in Spain, +9,3% in Portugal and +19,8% in Ireland (Graph 8.3). In Spain and Portugal, this trend reflects most notably the major drive by firms to restructure and modernize during the period following membership. In Ireland, the upturn in private investment can be attributed to greater confidence in the general economic environment among entrepreneurs, due to the recovery of the public sector and improved profitability resulting from wage restraints.

In Ireland, these wage restraints have also helped to increase the competitiveness of firms and thus to stimulate exports. Also, the Irish economy is the only one to show an improvement in the balance of trade from 1985-89, achieving a surplus of 8,4% of GDP in 1989.

By contrast, in Spain and Portugal, the growth in domestic demand and the progressive removal of tariff barriers and quotas with respect to EC Member States following membership brought a considerable worsening of the balance of trade *vis-à-vis* the EC. A surplus in 1985 (1,2% of GDP) was transformed into a deficit of -0,2% by 1986, subsequently falling to -3,6% by 1989. In Portugal, this worsening balance of trade *vis-à-vis* the EC is even more marked, the deficit falling from -0,1% of GDP in 1985 to -8,5% in 1989.









In Greece, we again find a worsening of the balance of trade, culminating in a deficit of 25,7 % of GDP in 1989. The situation is, however, worse vis-à-vis the extra-Community countries than vis-à-vis the EC and can be explained by the loss of competitiveness of Greek firms rather than the pressure of domestic demand. In fact, in Greece, the real growth in GDP during the period 1985-89 was considerably less than the Community average. In particular, investment in manufacturing industry fell, in volume terms, at the rate of 4,8 % per year during this period. This weakness in private investment is largely due to the unfavourable expectations of economic agents as a result of the worrying situation of the public sector (budget deficit amounting to approximately 20 % of GDP in 1989) and the public debt (around 92 % of GDP in 1989) coupled with an inflation rate of 14,3 % in 1989, which is three times the Community average. An improvement in the economic situation is therefore absolutely essential for Greece if it is to restore confidence in its economic agents, particularly entrepreneurs. This is a prerequisite for the success of any policy seeking to modernize and restructure the industrial sector, with private and public investors coming together in a joint effort.

8.1.2. External performances

Firstly, it should be noted that not all the less developed countries are engaged in the same type of trade at Community level. In fact, the share of intra-branch trade is less important in Portugal and especially in Greece than in the other Member States. By contrast, Spain and Ireland are in an intermediate situation, together with Italy (see also Table 5.1).

We therefore find that intra-branch trade is less developed in Member States where the per capita GDP differs most from the Community average. This result confirms the hypothesis formulated by Helpman (1981) according to which intra-branch trade between two countries is negatively correlated to the difference in their GDP per head. A similar result was econometrically shown in Balassa and Bauwens (1989).

Greece is clearly engaged in inter-industrial trade with the other Member States and the only sectors with a high intrabranch trade indicator (Grubel-Lloyd index above 0,60) are footwear, leather goods and textiles (see Table 8.1). These are also the only sectors in which Greece shows a good external performance (positive composite indicator of static competitiveness). Yet even in these sectors with a high unskilled labour content and where Greece enjoys comparative advantages, imports remain high.

As regards external performances, Greece today finds itself in a rather critical situation. In fact, there are few highly competitive sectors, apart from footwear, clothing and textiles, among the traditional industries such as electrical wires and cables or aluminium production (see Table 8.2.). On the other hand, there are many sectors in which the competitiveness of Greek industry is very poor: the high-technology sectors (data processing, telecommunications equipment, consumer electronics etc.), traditional public-procurement markets (rolling stock, boilermaking, electrical equipment), the machinery, motor vehicle, and chemicals/pharmaceuticals sectors.

The overall external performances of Portugal closely resemble those of Greece: its few strong points are found among those sectors which are intensive in unskilled labour (textiles, clothing, footwear, etc.) and where this country enjoys comparative advantages. On the other hand, unlike Greece, it is developing an inter-industrial form of trade in its strong points. Furthermore, its intra-branch trade is high (Grubel-Lloyd index above 0,7) in a few sectors where it is a net importer, such as motor vehicles and electronics, but where its export/import ratio has been improving over recent years. These sectors with a higher technology content are characterized by a significant presence of foreign subsidiaries oriented towards exports. These are often 'incomplete' sectors in so far as Portugal has not developed the full range of activities of these sectors. Consequently, despite their low coverage ratio, they do include pockets of competitive intrasectoral specialization thanks to the initiative of foreign investors or collaboration between national and foreign firms.

Spain differs from the two other southern Member States to the extent that its strong points are not confined to the traditional industries but also include industries with a higher capital or skilled labour content, such as, for example, domestic-type electrical appliances, lighting equipment and motor vehicles (see Table 8.2). In this respect, it is important to remember that among the 40 sectors, the comparative advantages of Spain lie not only in sectors with a high unskilled labour content—as in Greece and Portugal—but also in capital-intensive sectors (see Table 6.4). Finally, another characteristic which differentiates external Spanish performances from those of the two other southern Member States is their relative weakness in certain industries in the textile/clothing area. Thus, in sectors such as clothing, carpets and the cotton industry, the composite indicator of static competitiveness is negative.

Taken overall, Spanish industry is also more involved in intra-industrial trade with the other European countries than Greece and Portugal. Table 8.1 shows that 16 of the 40 sensitive sectors of Spanish industry have a Grubel-Lloyd index of over 0,7, compared with just 9 for Portugal and 3 for Greece. These 16 sectors include strong points which are not traditional industries—domestic-type electrical appliances and motor vehicles (Grubel-Lloyd index of 0,9) and lighting equipment (Grubel-Lloyd index of 0,7)—together with industries with a higher technology content where the external performances of Spain are average (pharmaceuticals) or poor (data processing, aerospace).

Ireland shows external performances which are distinctly different from those of the three other less developed countries of the EC. This country is in fact well placed in high-technology sectors such as data processing, telecommunications equipment, medico-surgical equipment and pharmaceuticals (see Table 8.2). By contrast, its external performances are poor in traditional industries in the area of textiles, clothing and footwear.

Although it is one of the four less developed EC countries, Ireland enjoys, in these 40 sectors, comparative advantages in industries with high capital and R&D contents. This is explained by the presence of foreign multinationals which dominate its industrial structure in areas of high technology. In fact, Table 8.3 shows that foreign multinationals account for more than 80 % of employment in these sectors. These foreign companies are essentially oriented towards export and are very competitive internationally. Thus, on average, foreign companies export 83 % of their production compared with 27 % for local companies, and they account for three-quarters of Irish exports of manufactured goods. The intra-branch trade coefficient is high in the majority of sectors dominated by foreign multinationals. This result corresponds to that presented in the survey by the National Economic and Social Council (1989). It can be explained by the existence of high levels of intra-firm trade, as in pharmaceuticals where Irish industry essentially produces ingredients used in the composition of drugs, or by specializing on certain market niches such as domestic-type electrical appliances where Irish companies focus on the production of small devices.

This dominating role of foreign firms in its strong areas is synonymous with a certain fragility of the Irish economy to the extent that future growth will depend on the strategies

Table 8.1

Sectors most affected by 1992 where the share of intra-industry trade is high1

Greece			Portugal				Spain	Ireland			
NACE Code	Sector	G-L index	NACE Code	Sector	G-L index	NACE Code	Sector	G-L index	NACE Code	Sector	G-L index
442	Leather goods	0.94	491	Jewellerv	0.99	493	Photog. & cinemat. labs	0.98	346	Domestic-type electr. appl.	0.99
417	Spaghetti, macaroni, etc.	0,85	428	Soft drinks	0,91	364	Aerospace	0.97	364	Aerospace	0.98
451	Footwear	0,72	345	Electrical equipment	0,86	481	Rubber goods	0,96	481	Rubber goods	0,91
			344	Telecommunications	0,84	346	Domestic-type electr. appl.	0,91	361	Shipbuilding	0,91
			315	Boilermaking	0,81	351	Motor vehicles	0,89	342	Electrical equipment	0,86
			351	Motor vehicles	0,75	455	Household linen	0,88	247	Glassware	0,85
			438	Carpets	0,73	257	Pharmaceutical products	0,87	345	Electronic equipment	0,85
			256	Other chemical products	0,70	491	Jewellery	0,85	257	Pharmaceutical products	0,84
			494	Toys, games	0,70	322	Machine tools	0,79	252	Petrochemicals	0,83
						421	Cocoa, chocolate	0,77	438	Carpets	0,82
						438	Carpets	0,77	256	Other chemical products	0,80
						361	Shipbuilding	0,76	455	Household linen	0,80
						248	Ceramics	0,74	427	Brewing	0,80
						330	Office machines	0,74	322	Machine tools	0,79
						347	Lighting equipment	0,72	421	Chocolate	0,79
						247	Glassware	0,71	248	Ceramics	0,76
									325	Plant for mines	0,72
									327	Other machines	0,70
									494	Games, toys	0,70
									428	Soft drinks	0,70

¹ Grubel-Lloyd (G-L) index equal to or above 0,70 Source: Commission services.

Table 8.2

Strong sectors in the four least developed EC countries¹

	Greece			Portugal		Spain		Spain			
NACE Code	Sector		NACE Code	Sector		NACE Code	Sector		NACE Code	Sector	
341	Electr. wires & cables	(+ 4)	248	Ceramics	(+ 4)	248	Ceramics	(+ 4)	257	Pharmaceuticals	(+ 4)
417	Spaghetti, macar., etc.	(+ 4)	341	Electr. wires & cables	(+ 4)	346	Domestic-type appl.	(+ 4)	372	Medsurgical equip.	(+ 4)
436	Knitwear	(+ 4)	415	Tinned fish ²	(+ 4)	425	Champagne and wines	(+ 4)	413	Dairy products ²	(+ 4)
453	Clothing	(+ 4)	425	Champagne, wines	(+ 4)	451	Footwear	(+ 4)	421	Chocolate	(+ 4)
224	Non-ferrous metals	(+3)	439	Various textile prod.2	(+ 4)	481	Rubber goods	(+ 4)	427	Brewing	(+ 4)
451	Footwear	(+3)	451	Footwear	(+ 4)	351	Motor vehicles	(+ 3)	428	Soft drinks	(+ 4)
438	Carpets	(+ 2)	453	Clothing	(+ 4)	341	Electr. wires & cables	(+ 2)	330	Office machines	(+ 2)
431	Wool industry	(+1)	455	Household textiles	(+ 4)	347	Lamps	(+ 2)	341	Electr. wires & cables	(+ 2)
455	Household textiles	(+1)	315	Boilermaking	(+ 1)	455	Household textiles	(+ 2)	344	Telecommunications	(+ 2)
						494	Toys, games	(+ 2)	346	Dom. type elec. appl.	(+ 2)
						493	Photog. & cinem. labs	(+1)	494	Toys, games	(+2)
									251	Chemicals	(+1)

A sector is considered strong if it has a positive score for the composite indicator of static competitiveness. This score is given between brackets after each sector. Sectors not included in the list of 40 sectors.

Sources: National reports (Part C of this issue); Commission services.

Table 8.3

Sectors of the Irish manufacturing industry dominated by multinational firms

NACE Code	Sector	Share of employment in foreign-owned firms — 1987 (%)
345	Radios TVs consumer electronics	97.6
427	Brewing and malting	94.4
372	Medical and surgical equipment	92.7
481	Rubber goods	92.3
330	Office and data-processing machinery	86.5
344	Telecommunications equipment	85.2
257	Pharmaceuticals	82,0
346	Domestic electrical appliances	79.0
421	Cocoa, chocolate and sugar confec-	
	tionery	77,6
341	Insulated wires and cables	73,1
Total	of sensitive sectors	56,0
Total	of manufacturing industry	40,8
Source:	O'Malley (1989), Irish study, Part C of this issue.	

adopted by foreign investors. However, the recent growth in foreign investment, particularly of American and Japanese origin, seems to indicate that the prospect of the completion of the internal market will bolster foreign investments in Ireland (see Irish report).

In the more traditional industries of clothing, textiles and footwear, where Irish firms dominate, the poor external performances (static competitiveness indicator score of -4 in the wool industry and footwear, of -3 for clothing, and of -1 for the cotton industry) are due to the increased penetration of imports following EC membership and the inability of certain local firms to meet this increased competition. In these industries, the most dynamic Irish firms have already reviewed their strategies, by specializing on luxury market niches or, on the contrary, by turning their attention to mass production by adopting modern production technologies. However, it should be pointed out that in these sectors the coefficient of intra-branch trade is relatively low (0.25 in footwear) and, according to the NESC survey (1989), it suffered a further fall during the 1980s. Consequently, we are witnessing an overall withdrawal of Irish industry from these sectors.

8.2. Two scenarios of dynamic adjustment

Two scenarios of dynamic adjustment can a priori be envisaged for the less developed Community countries. Firstly, a scenario of inter-industry specialization with growth in those sectors where they currently enjoy comparative advantages, and, secondly, a scenario of intra-industry specialization with industrial production becoming similar to that of the most developed Community countries. In fact, any combination of these two scenarios is of course possible. A country does not in practice adhere to one of the two models proposed here but, taken overall, the logic of its industrial development ultimately tends to correspond to one or other of these options.

8.2.1. Inter-industry scenario

If trade is of the inter-industry variety, that is, obeying the law of comparative advantages, the removal of non-tariff barriers will have the effect of reducing the price of imports from Community countries¹ and will encourage domestic goods to be replaced by imported goods. Intra-EC trade will then grow, each Member State specializing in those sectors where it enjoys comparative advantages.

This first scenario therefore supposes that the lowering of non-tariff barriers is going to allow the three southern Member States to boost their exports to the other EC countries in those sectors where they at present enjoy comparative advantages, that is, for the most part, industries with a high unskilled labour content, such as footwear and clothing. In this case, we will witness an intensification of inter-industry trade between the northern and the southern Member States, the latter increasing their inter-industry specialization which is already above that of the rest of the EC, especially in the case of Portugal and Greece.

This inter-industry specialization will be reinforced by investments for relocating from the north to the south, precisely in an attempt to benefit from those comparative advantages offered by the southern Member States. The completion of the internal market could theoretically benefit these north/ south relocations. The removal of these non-tariff barriers coupled with lower transport costs could indeed cause European firms to concentrate their production units in those countries which would allow them to minimize their production costs. The desire for greater control over production costs could also be felt as a result of increased price competition. Thus, certain firms will be obliged to reduce their sales prices in order to bring them into line with those of the most competitive suppliers. In order to maintain their margins, they will be encouraged to locate their production units in countries with low wage costs.

¹ And even extra-Community, for example in the case of standards harmonization (see EEC, 1988).

In this respect, the southern Member States will present a certain attraction. The average gross hourly earnings of workers in industry is much lower in these countries than in the northern Member States: the gross hourly wage of Spanish workers was approximately 50 % of that of Danish workers in 1987, while in Greece the figure was 25 % and in Portugal 14 % (see Table 8.4). Similarly, wage costs expressed in ecus also show major differences, varying from ECU 2,4 in Portugal to ECU 14,2 in Germany.

Table 8.4

Average gross hourly earnings of workers and hourly labour cost (workers and employees) in industry

	Average earning (gross hourly s of workers 1987)	Hourly labour cost (workers and employees) (1984)			
	In ECU	Denmark = 100	In ECU	FRG = 100		
В	7,1	67,5	13,4	94,1		
DK	10,5	100,0	11,9	83,9		
D	8,5	81,6	14,2	100,0		
GR	2,6	24,6	5,8	41,1		
E	5,2	49,3	n.d.	n.d.		
F	5,8	55,8	12,4	86,9		
IRL	6,0	57,7	8,9	62,5		
I	5,9	56,8	10,7	75,4		
NL	7,4	71,2	13,7	96,1		
Р	1,5	14,4	2,4	16,7		
UK	6,0	57,1	9,0	63,5		

Source: Eurostat cited in EEC, November 1988.

However, the phenomenon of north/south relocation should remain limited. In fact, the inadequacy of infrastructures, less qualified labour and the resultant lower level of productivity may cancel out the advantages of lower wage costs. Thus, if wage costs are adjusted to take account of differences in productivity, the southern Member States lie below the Community average (see Table 8.5).

Surveys also indicate that we should not expect any largescale north/south relocation. According to the KPMG (1988)¹ survey, this strategy will only be adopted by 19 % of the European firms contacted and will be particularly favoured by German firms. According to the same survey, the heads of European industry generally prefer other strategies: 27 % would like to improve productivity and 21 % envisage reorganizing their production units.

Table 8.5

Unit labour costs - 1989

	In ECU per 1 000 ECU of GDP	Netherlands $= 100$
В	743	113
DK	745	114
D	699	107
GR	844	129
E	833	127
F	675	103
IRL	713	109
I	829	127
NL	655	100
Р	761	116
UK	694	106

A survey carried out by IFO² among German entrepreneurs sheds additional light on their reactions in the context of 1992 (see in particular the German study, Section 5). When questioned on the strategies they proposed to adopt, 50 % of German entrepreneurs replied that they intend to defend their presence in the Federal Republic by rationalizing existing production units, 20 % replied that they intend to cooperate with other Community firms, 14 % would like to increase production capacities in Germany and 14 % envisage relocating a part of their production to other Member States. It is clear that opportunities for direct investment in the Eastern Bloc countries and the unification of Germany could change the attitude of German entrepreneurs as regards investment in the southern Member States.

This survey also shows that the strategies of German firms vary greatly from one sector to another. Thus, in the strong sectors of German industry, we find more firms ready to defend their location in the Federal Republic. By contrast, in the weaker sectors, such as textiles and clothing, there is a greater propensity for firms to relocate. It therefore seems that relocation will only affect a limited number of sectors. Such a conclusion can also be drawn from a survey conducted by the Commission Services which has shown that only some industrial sectors are vulnerable to the risk of north/ south relocation (see Ilzkovitz (1989)).

¹ Survey conducted among 700 European companies.

² Survey conducted during the summer of 1988 among 1 400 firms within German manufacturing industry.

If the southern Member States move towards the first scenario, they may either further exploit their comparative advantages on the Community market or decide to implement a policy of restructuring their traditional strong sectors. In fact, at the global level, the southern Member States today face competition in these sectors from the developing countries in so far as their wage costs are lower: the ratio is 1 to 5 between India and Portugal and 1 to 4 between Pakistan and Portugal.

Faced with this competition from the developing countries, the southern Member States would abandon their low-quality products in favour of market niches with more potential for value added (upgrading). In this event, the costs of relocation could favour this restructuring by introducing more modern methods of production. Another option is also open to the southern Member States: to increase specialization in sectors which are more intensive in terms of human capital and technology. It is this second option which corresponds to the second scenario as proposed here.

8.2.2. Intra-industry scenario

The removal of non-tariff barriers should also permit a more intense exploitation of economies of scale and increased competition leading to greater product differentiation. The more marked integration of the European economies will therefore lead to an increase in intra-branch trade on the Community market. This second scenario also supposes that the completion of the internal market will permit the southern Member States to increase their intra-branch trade with the rest of the Community.

In this respect, it should be stressed that the less developed Member States have seen an increase in their intra-branch coefficient (see Chapter 5), to the benefit of their economic integration. During the period 1980-87, Greece (+0,07), Spain (+0,07) and Portugal (+0,05) were the countries which recorded the highest intra-branch increase.

An increase in intra-industry trade supposes a reduction in the inter-industrial specialization of the southern Member States in those sectors where they enjoy comparative advantages, and an improved competitiveness in those sectors where they are traditionally net importers. Recent trends in the external performances of these countries do indeed seem to correspond to such a pattern (Table 8.6).

On the one hand, we are witnessing a worsening of the external position of the southern Member States, on both the Community market and external markets, in certain of their traditionally strong sectors which are labour-intensive industries. Table 8.7 shows that the intra- and extra-EC

Table 8.6

Trends in the external performances of the southern Member States

NACE Code	Sector	Composite indicator of historical competitiveness for the three countries ¹
	(a) Deterioration in the strong s which are labour-intensive indu	ectors stries
431	Woollen industry	-9
432	Cotton industry	- 9
438	Carpets	- 5
451	Footwear	- 3
453	Clothing	- 3
455	Household linen	- 8
	(b) Improvement in the strong s with a high technology conte	ectors nt
257	Pharmaceuticals	+ 2
346	Domestic electrical appliances	+ 2
372	Precision equipment	+ 1
	en Carrie Destural	

Source: National studies and Commission services

export/import ratios of these three countries are falling in industries in the area of textiles, clothing and footwear. On the other hand, their position is improving in industries with a high technology content or which use a more skilled workforce. Thus, in Portugal, external performances are improving in sectors such as chemicals/pharmaceuticals (increase in intra- and extra-EC export/import ratios of 11,2 % and 18,5 % respectively), electrical equipment (+9,7 % and 14,7 % respectively), domestic-type electrical appliances (+6,7 % and 35,5 % respectively) and motor vehicles (+42,7 % and +31,5 % respectively). This phenomenon is less evident in Greece where the export/import ratios of sectors with a higher capital or technology content continue to remain low, even if showing some improvement.

In Spain, this phenomenon is more difficult to detect as there was a general decline in external performances in the period following EC membership. However, among the few sectors where performances are not deteriorating, we do find industries with a high technology content, such as pharmaceuticals, precision equipment and aerospace. A similar result is found in the Vinals survey (1988) which shows that, following membership, the fall in Spanish exports was concentrated in sectors with low demand growth (-6,8 % during the period 1985-87), while in sectors such

Table 8.7

Trends in export/import ratio of labour-intensive industries

NACE	Sector	▲ Intra-EC export/import ratio ¹			▲ Extra-EC export/import ratio			
Code		 Greece	Spain	Portugal	Greece	Spain	Portugal	
431	Woollen industry	-133	-186	2 - 20	- 35	- 189	- 57	
432	Cotton industry	-11	-637	j 20	- 51	-152	1 31	
438	Carpets	- 54	- 35	- 99	+ 103	- 354	- 66	
451	Footwear	- 27	-976	-3 031	-65	-2 968	-3 560	
453	Clothing	- 9	- 82	-1 351	+ 324	-114	-103	
455	Household linen	- 244	-206	-3747	-4	-191	-434	

as chemicals/pharmaceuticals and electronics, these exports increased by 3 % and 13,3 % respectively.

This trend in the external performances of the southern Member States in their traditionally strong sectors can be explained by increased competition from extra-EC imports from developing countries. Thus, Graph 8.5, taken from the Booz Allen survey (1989) shows that in the case of textiles the extra-EC import penetration rate increased from 38% in 1985 to 47% in 1987, the survey predicting a rise to between 52 and 55% in 1992. Similarly, the Portuguese survey shows that the import penetration rate increased, between 1980 and 1982 and from 1986 to 1987, by 33% in the footwear sector, by 19% in various textile products, and by approximately 5% in the clothing, knitwear and household linen sectors, while the average increase for industry as a whole was just 1,7%.

This trend is also in keeping with the logic of comparative advantages in so far as labour costs are even lower in the developing countries than in the southern Member States. Furthermore, these labour-intensive industries are more protected in the southern Member States and have suffered more as a result of the reduction in protection in order to conform with the common external tariff.

These industries are still protected from extra-EC competition by the CET, which averages 7 % for textiles and 13 % for clothing (see Jacquemin and Sapir (1990)). Despite this protection, the completion of the single market should further increase the pressure of extra-EC competition. Thus, according to Sapir (1989), these sectors are among those where the external impact of 1992 will be felt the most. Faced with this development, the southern Member States which are most affected by competition from the developing countries—and that is the option of this scenario—will seek to improve their specialization in the most capital-intensive sectors with the highest technology content. In this case, foreign investments can help to increase the specialization of southern Member States in these sectors. In fact, these investments are often accompanied by a transfer of technology and an improvement in human capital. In so doing, they help to modify the comparative advantages of the southern Member States and favour the development of intra-industry trade.

8.3. Inherent risks and advantages of these two scenarios

In the first scenario, an increase in inter-industrial trade between the northern and the southern Member States could lead to significant economic gains for the southern Member States. These gains would be due to the increase in exports and therefore of production in sectors where these countries have comparative advantages. Using a model of partial equilibrium incorporating elements of imperfect competition, D. Neven calculated the benefits which would result from an increase in exports from the south to the north in the clothing and footwear sectors (see Neven (1989)). According to this model, a fall in the costs of intra-EC trade of $2,5 \%^1$ would increase the production of these sectors by

¹ This assumption was adopted in the studies of Venables and Smith which use a similar methodology to measure the benefits of market integration to that in the Commission's study on the costs of non-Europe (see EEC, 1988). It is rather modest in so far as the costs of customs formalities alone account for 1,5 % of intra-EC trade.



15,5% and their exports by 18,2%. Overall, GDP would increase by 0,6% in Greece and Portugal and by 0,3% in Spain.¹ In the northern Member States, the imports of these two sectors would increase by no more than from 0,3 to 0,5%. The differences in size of the northern and southern markets explain why considerable gains are possible in the south without the northern Member States being significantly affected.

However, the first scenario presents risks for the southern Member States. Firstly, they would remain specialized in industries with a low R&D content and with limited growth prospects. In fact, despite the protection of the Community

¹ This result is obtained on the basis of the two following assumptions:

market, European producers have lost market shares, usually to the developing countries, which possess comparative advantages greater than the southern Member States in industries with a high unskilled labour content. Also, on removing Community protection in the textile, clothing and footwear sectors, the southern Member States would be the first to suffer from increased competition from the developing countries.

However, in the framework of this scenario, the southern Member States could also adopt a strategy of upgrading their traditional output in order to effectively compete with the developing countries. Italy provides the best example of a successful strategy of upgrading in these traditional sectors.

The second scenario supposes that the southern Member States adapt to this new international division of labour by progressively transforming their fields of specialization. Furthermore, according to this scenario, these countries would seek to strengthen their position in industries with a higher technology content with more extensive possibilities for growth. This second scenario implies a strengthening of the levels of human and physical capital in the southern countries and foreign investment could contribute towards

⁽i) in terms of production costs, the southern Member States hold the same advantages as third countries over the northern Member States;
(ii) third countries also benefit from the falling cost of intra-EC trade. The first of these assumptions is open to discussion in so far as certain third countries today have labour costs which are much lower than those of the southern Member States. The second assumption supposes that extra-EC countries benefit from the removal of non-tariff barriers. For certain barriers, such as technical ones, this will probably be the case.

this process by favouring technology transfer and more modern management methods. The Irish experience, for example, shows that foreign investment permitted high-tech industries to develop in this country. The improvement in Ireland's trade performance can be largely attributed to this choice of industrial development.

However, the Irish experience can also teach us a great deal about the risks inherent in this second scenario. In fact, the industrial policy pursued following membership did not succeed in strengthening the position of the national firms most exposed to external competition while, on the other hand, incentives introduced to attract foreign capital did have a very significant effect (see NESC (1989)). The result has been a dichotomy in the structure of Irish industry with, on the one hand, highly efficient high-tech sectors dominated by multinationals and, on the other hand, local industries which are much less competitive. Thus, in those sectors where the multinationals are concentrated, the volume of production increased by 15,9 % per annum during the years 1980-87 while in the rest of manufacturing industry this growth was just 0,3 % per annum (see Irish survey). The Irish experience highlights the weakness of an industrial policy essentially based on foreign investment. In order to draw maximum benefit from such investment it is necessary to maintain an industrial base founded upon local firms and to promote links between these firms and the foreign investors.

Furthermore, greater specialization in the high-tech sectors need not necessarily lead to increases in human capital and technology. One example of this are multinationals' subsidiaries limiting themselves to assembly operations. Certain conditions must be respected for a positive interaction between, on the one hand, improved specialization and, on the other hand, improved quality of employment and production techniques. This question is considered in more detail in Section 9.

Finally, there is the question as to which of these two scenarios will burden the southern Member States with the heaviest costs of adjustment. Many authors (Balassa (1966); Krugman (1987)), consider that the costs of adjustment resulting from the liberalization of trade are higher if interindustry rather than intra-industry specialization results. They propose two supportive arguments. Firstly, the reallocation of factors of production within industries (intra-industry specialization) is easier if it consists of flows from declining sectors subject to competition from imports towards export growth sectors (inter-industry specializations in factor prices will be less if, at the outset, countries have similar factor endowments.

For the southern Member States, an intensification of trade based on their comparative advantages would pose fewer problems of adjustment in the short term than the transition from an economy based on labour-intensive industries towards an economy more specialized in industries which are intensive in human and physical capital. In fact, in the second case, it would not only be necessary to move factors of production into new sectors but also to improve their quality. This could be achieved by training the workforce, having the potential to acquire new technological skills, and modernizing the production system. However, if the southern Member States pursue the first scenario, they run the risk, in the medium to long term, of coming up against more critical problems of adjustment because the dynamic of comparative advantages works in favour of the developing countries.

8.4. The dynamic adjustments observed

The analysis of the overall performances of the southern Member States in the sectors most affected by 1992 (see Chapter 4) showed that Greece and Portugal are in a more unfavourable situation than Spain. The question now arises as to whether an analysis of the observed dynamic adjustments gives reason to modify this conclusion. This analysis should also make it possible to position each of the southern Member States in terms of the two proposed scenarios.

The following section concentrates on two particular aspects of dynamic adjustments: direct foreign investment¹ and corporate strategies.

8.4.1. Direct foreign investment

Since 1986, the year following EC membership, there has been a strong growth in foreign direct investment in Spain and Portugal (see Graph 8.6). Between 1984 and 1988, this flow of foreign investment virtually tripled in Portugal and quadrupled in Spain and subsequently made a considerable contribution to the major investment drive observed (see Section 8.1). Thus, in Spain, this flow of foreign investment represents 1,7 % of GDP and 7,8 % of the gross fixed capital formation in 1988 as against 0,7 % and 3,8 % respectively in 1984 (Graph 8.7). Similarly, it is estimated that 35 % of investments made in Spanish manufacturing industry during the period 1986-88 were financed by foreign capital (Torres (1989)). In Portugal, the share of foreign investment also

¹ Foreign direct investment projects are those made in order to acquire a lasting influence over a company active in an economy other than that of the investor, the aim being to exercise effective influence on company management.



82





other Member States, particularly the United Kingdom and the Netherlands where many American and Japanese multinationals have their financial centres. Furthermore, in manufacturing industry, Spain, along with the United Kingdom and the Netherlands, is one of the principal beneficiaries of Japanese investment, receiving 17% of Japanese capital stock invested in Community industry in 1988.

Several factors can help to explain this inflow of foreign investment to Spain and Portugal. Firstly, EC membership and the prospect of the completion of the internal market certainly had a positive effect by permitting access to a larger market and a reduction in transport and marketing costs on the Community market. Also, the strong growth recorded since 1986 has made these countries increasingly attractive to foreign investors. Finally, their advantages in terms of wage costs, the incentives offered and, in certain sectors, the absence of local competitors, have also played a part. In this respect, the empirical studies on Spain¹ (see Torres (1989)) have shown that the size and growth of the market together with Spanish membership of the EC have had a significant effect on the growth of foreign investment in this economy.

The analysis of the sectoral breakdown of foreign investment in Spanish manufacturing industry yields interesting information on the role of this investment in current adjustments of this economy (see Vinals, Torres (1989)). Thus, Table 8.8 shows that, in the period 1986-88, this foreign investment was destined primarily for the average-growth and highdemand sectors, which benefited from 51 % and 38 % respectively of total foreign investment in Spanish manufacturing industry. The main beneficiaries were chemicals (30,1 %), agri-foodstuffs (15,5 %), paper (14,1 %), and motor vehicles (13,6%). By contrast, industries such as textiles, clothing and footwear only received a small part of this investment.

It is also noteworthy that foreign investment accounted for the largest contribution to investments in high demand growth sectors. Thus, in these sectors, 88 % of investments are financed by foreign capital as opposed to 52 % in average demand growth sectors, and 11 % in low growth sectors (second column, Table 8.8). In four sectors, foreign invest-

Table 8.8

Sectoral breakdown of foreign direct investment¹ flow in Spanish manufacturing industry and contribution of these foreign investments to total investments made in each sector - 1986-88

	% of foreign direct investment per sector	% of foreign direct investment in total investments of each sector
Sectors with a strong growth demand	38.0	87.6
Office and data-processing	0.4	26.8
Electrical and electronic equipment	7 5	52.4
Chemicals	30,1	108,9
Sectors with moderate growth demand	50.6	52,0
Rubber, plastics	1,3	13,8
Motor vehicles	13,6	89,4
Mechanical equipment	5,8	64,7
Other transport equipment	0,1	
Food-processing	15,5	36,7
Paper products	14,1	68,5
Sectors with weak growth demand	11,4	10,8
Ferrous metals	0,4	1,3
Metallic products	2,1	10,3
Manufacturing of non-		
metallic minerals	4,5	22,8
Wood and cork	0,3	3,0
Textiles	0,8	10,2
Leather	0,1	3,8
Clothing, footwear	0,1	3,0
Metallic minerals	0,4	15,7
Non-metallic minerals	1,9	34,6
Other	0,7	42,6
Total	100,0	35,0
¹ Investment approvals.		

ment represents more than half of total investments, namely chemicals, motor vehicles, paper and electrical and electronic equipment.

In Spain, foreign investments also seem to have a positive impact on the performance of those sectors which benefit the most from them. Thus, the seven industrial sectors² which received 86 % of foreign investment during the period 1986-88 show a stronger growth in production, exports and labour productivity (see Table 8.9). These good performances may result from the introduction of more modern management methods and technologies by foreign investors. These results therefore seem to indicate that foreign invest-

The following model was estimated over the period 1960-88:

 $I_t = a + bGDP_{t-1} + GGDP_{t-1} + dINF_t + eCUA_t + fW_t + gD + u_t$ where:

I = gross per capita levels of foreign direct investment

GDP = per capita gross domestic product GGDP = real growth in GDP

INF = rate of inflation

CUA = current account balance

W = relative unit wage costs

D = variable dummy to take account of the impact of integration (D = 0 before 1986 and then D = 1).

² Chemicals, agri-foodstuffs, paper, motor vehicles, machinery, electrical equipment, electronic equipment.

ment in Spain contributes towards the modernization of industry and favours the development of new specializations in the advanced sectors. Spain is therefore already developing the intra-industry scenario.

Table 8.9

Comparison of performance of sectors which are the main beneficiaries of foreign direct investment with those of the rest of manufacturing industry

	% variation of exports (in real terms) ¹	% variation of net exports (in real terms) ¹	% variation of production (in real terms) ¹	% variation of labour productivity ¹
Seven sectors receiv- ing 86% of foreign direct investment in				
the period 1986-88	28	- 27	27	22
Rest of manufactur- ing industry	- 9	- 36	16	7
Total of manufac- turing industry	10	- 32	22	15
¹ For the period 1985-88.				

For Greece and Portugal, the breakdown of foreign investment does not permit a similar analysis. However, the Jetro survey on Japanese companies established in Europe shows that they are located principally in Spain and Portugal in chemicals/pharmaceuticals, electrical and electronic equipment, and transport equipment (see Table 8.10). This survey therefore confirms, for Spain, a localization of foreign investments in developing industries and seems to indicate that the same is true for Portugal.

8.4.2. Strategies of firms

The survey carried out by the EC among 9 000 firms provides information on the strategies envisaged by firms with a view to 1992. Our particular concern here is with the reactions of Spanish and Portuguese firms, no similar survey having been carried out among Greek firms. The information provided by the survey is described in more detail in the box below and it will be supplemented by the national studies.

Firstly, it appears that the northern Member States are more inclined to invest in other Member States than the southern

Table 8.10

Breakdown of Japanese companies in the southern Member States at 31 January 1989

	Spain	Greece	Portugal
Chemicals/			
pharmaceuticals	8	1	2
Electrical and electronic			
equipment	10	1	1
Transport equipment	10		2
Total	28	2	5
Total Japanese companies	41	4	7

Member States. In fact, Spanish and particularly Portuguese firms seem to want to concentrate their investments on their national market. This initial result seems to suggest that the completion of the internal market will favour the process of catching up on the part of the southern Member States as it stimulates the flow of intra-EC investment.

Faced with 1992, there is a quite clear difference between the reactions of Portuguese and Spanish entrepreneurs. Firstly, they do not share the same priorities. While Portuguese entrepreneurs attach priority to production strategies, Spanish entrepreneurs would like to act upon products, R&D and distribution. Also, Portuguese entrepreneurs are less ready to collaborate with European partners, whether in distribution or R&D. In fact, they would like to first consolidate their position on their own market, particularly by reorganizing their production units.

By contrast, Spanish entrepreneurs are more willing to collaborate with other European firms in the areas of distribution and especially R&D, their enthusiasm for which is surpassed only by the Irish. They also stress the need to differentiate their products in order to meet the challenge of increasing competition. This result may indicate that Spanish firms are a stage further than Portuguese firms in their restructuring. Having already reorganized their production activities, they are now seeking to develop new areas of specialization.

Despite the differences in behaviour brought out by this survey, the Portuguese study on the impact of 1992 on industry indicates that Portugal is moving along the same lines as Spain. Thus, agreements for technological cooperation and the establishment of foreign firms are favoured

Expectations of the internal market in the southern Member States — Results of the survey among European firms

Some interesting results emerge from the Commission's survey on the reactions of Spanish and Portuguese entrepreneurs to 1992 which are broadly consistent with the country studies in this volume. Two principal conclusions emerge: firstly, Spanish and Portuguese industrialists devote the greater part of their investment activities to the national market and are more reluctant to invest in other Member States than their northern counterparts and, on the other hand, there are differences between the reactions of the Spanish and the Portuguese entrepreneurs.

Investments in the southern Member States

Graph B.2 illustrates the response of firms to the effects of 1992 on investment. A majority of firms expect to increase their investment inside their own country.

¹ This survey did not include Greece.

The Spanish and especially the Portuguese entrepreneurs also favour an increase in investment in their own country rather than in other Member States and they are less inclined to invest in other Member States than the industrialists of the more developed Member States (except for the Netherlands). Thus, only 12 % of Spanish entrepreneurs and 13 % of Portuguese entrepreneurs intend to invest in other Member States compared with 25 % of German and Italian entrepreneurs, 21 % of British entrepreneurs and 20 % of French entrepreneurs.

Although the survey does not confirm that the former will benefit from direct foreign investment from the latter, labour cost arguments and recent trends in foreign investment in Spain and Portugal, as presented in the chapters on the individual countries, suggest that such an intra-Community flow of investment can be expected. This development should favour the catching up process in the less industrialized Member States.

Differences in strategy envisaged by the Spanish and Portuguese industrialists

The survey also provides information on the effect of the internal market on the internal strategies of industrial firms. For the Community in general, the impact of 1992 is most evident in



the field of product adaptation and restructuring of production plant: 63 % and 61 % respectively of the firms surveyed believe that the internal market will have an effect on their decisions in these areas. But the effect on distribution (58 %) and R&D strategies is also quite clear. At this level, there are significant differences between the Member States and particularly between the replies of the Spanish and the Portuguese industrialists.

Thus, the Portuguese (see Graph B.3) rank production strategies first, and are more skeptical on the impact of 1992 on distribution (28 %), products and R&D (18 %). By contrast, Spanish entrepreneurs place much more emphasis on products (61 %), R&D (56 %) and distribution (53 %) rather than on changes in production strategies (25 %).

Other clear differences are apparent when one examines the options of the Spanish and Portuguese industrialists within each of the four broad strategic categories (see Graph B.4). Thus, 52 % of the Portuguese making plans in the area of production expect to rationalize their operations compared with only 6 % of Spanish industrialists. This result suggests that Portuguese

entrepreneurs are more aware of the need to reorganize their production units than their Spanish neighbours. Unfortunately, the data were not sufficiently disaggregated to indicate whether such restructuring would include diversification or entry into new (non-traditional) lines of business, but this must be a possibility.

In the field of product strategies, not only do the Spanish firms expect to be more dynamic but they also differ from their Portuguese neighbours by showing a clear preference for differentiating products (45 % against 16 %). This strategy conforms to a logic of intra-branch trade and confirms that Spanish entrepreneurs are more advanced than the Portuguese in restructuring their industry and perhaps more inclined to seek new niche markets.

In distribution and R&D, one would expect that a similar industrial structure to other Member States would increase the possibilities for collaboration in these areas. Again the relatively greater Spanish optimism in this respect 40 % are ready to collaborate in R&D and almost 35 % in distribution, i.e. twice as many as among the Portuguese—suggests that Spain's industrial structure has more in common with that of more developed Member States than that of Portugal.





in the developing sectors. State Portuguese firms already collaborate with foreign enterprises on major projects. This is true of the telecommunications sector where a national firm has associated with a foreign firm to develop the new telephone network. Another strategy consists of developing highly specialized national SMEs around the subsidiaries of foreign multinationals.

Undoubtedly, traditional labour-intensive industries continue to be of greater importance in Portugal than in Spain which has already managed to focus on new market outlets. But, in both these countries, an effort is being made to develop factors independent of the costs of competitiveness, such as quality, design and brand image. The objective here is to abandon lower-range products and to manufacture more sophisticated products in order to meet the challenge of the developing countries.

According to the results of the Commission survey, Spanish firms are committed to such a course of action, as one of their priority strategies is product differentiation. The same applies to Portugal but, to achieve such a result, action is focused upstream on production activities, and policies such as reinforcing supporting measures, improvements in vocational training and modernizing capital equipment are being implemented. New forms of organizations resulting from increased automation are also being exploited. Thus, recent investments in the Portuguese footwear sector are oriented towards the adoption of computerized production systems.

This analysis of the strategies of firms therefore confirms that Spain is pursuing an intra-industrial scenario. Portugal is in an intermediary situation but seems to want to follow the same path as Spain. For Greece, it is more difficult to judge as the Commission survey did not include Greek firms. In order to acquire certain information, the Greek expert conducted a study among 208 firms representing 20 % of industrial employment. According to the results of this survey, Greek entrepreneurs are aware of the need to modernize their capital equipment and increase the size of their production units. They also want to implement more modern management methods (see Greek study). However, these encouraging results are not confirmed by recent trends in levels of national and foreign investment in this country. The fall of the former and the levelling out of the latter make it difficult to have faith in any large-scale movement to modernize and restructure Greek industry. The conclusion must therefore be that Greece still at present shows a generally inter-industrial scenario.

9. Qualifications and training in support of the adjustment processes

The growth dynamic generated and accelerated by the completion of the internal market is a determining factor in creating employment, both present and future. Despite this overall positive picture, the question of possible varying trends in employment at sectoral and regional level is a relevant one as the processes of increased competition and competitiveness do not imply an automatic and equal redistribution of the benefits associated with the completion of the internal market. Furthermore, by noting current change and anticipating future trends as early as possible, we can reduce the adjustment costs linked to these changes. This chapter does not claim to be definitive. It seeks essentially to present elements for reflection of a nature to provoke discussion among the economic and social decision-makers on the necessary policy changes in human resources management

9.1. Competitive positions, strategies and employment redistribution

National studies have provided an initial evaluation of total industrial employment in the sectors most affected by the construction of the internal market in each Member State. Significant differences were noted (see Chapter 3). However, certain questions remain open: Will the internal market accelerate employment redistribution in line with the comparative advantages of each Member State? Will we see greater intersectoral specialization of employment between Member States? Or can we detect other possible scenarios of a more intrasectoral nature, as observed between the northern Member States?

To answer these questions, we must examine the factors which will influence employment redistribution within the internal market. This process of employment redistribution will vary from sector to sector, particularly on the basis of:

- (i) the general economic climate and demand on each market;
- (ii) the strategies adopted by firms in the markets on which they are present;
- (iii) technical possibilities and organizational options implemented within the firms;
- (iv) the degree of attractiveness of each Member State with respect to each of the factors of competitiveness: unit wage costs, workforce qualifications, methods of labour management, quality of locally available support, quality of infrastructures and services rendered to firms, etc.

In quite general terms, we can propose a classification scheme to evaluate the impact of the completion of the internal market on employment for a given sector in a given country (see Graph 9.1).

This classification scheme supposes that employment is mainly a function of the strategies adopted by firms faced with the new conditions of competition created by the removal of frontiers.

It thus provides a basis for developing a prospective analysis per sector in order to identify the impact of the completion of the internal market on each Member State according to its present competitive position and that which it will enjoy following the removal of barriers. This is a short to mediumterm prospective analysis as a long-term approach must allow both for changes in the relative competitive positions of the Member States stemming from the effect of strategies implemented and for the position which each firm will occupy on its market. These two approaches (short to mediumterm and long-term) must also take account of both the intra-Community and extra-Community aspect of these competitive positions.

If we apply this method to the information available, we may draw the following conclusions:

9.1.1. In the high-technology public procurement sectors, and particularly in the data processing and telecommunications sectors, we can expect to see strategies for cooperation and technological modernization, backing up expansion strategies possibly coupled with relocation strategies in



some segments (some relocations at the expense of Europe could be reconsidered in the light of the internal market). If these strategies meet with success with regard to American and Japanese competitors they will prompt employment growth in the leader countries and even in the other countries, given the strong demand growth in these sectors. Such strategies could therefore contribute to vocational insertion, particularly of young people in industry, if they are backed up by a major and appropriate drive for both basic training and training specifically linked to cooperation between firms and training institutes (as already run within the Comett programme). Within this group of industries, it is essential to develop all possible types of cooperation and collaboration.

9.1.2. In the traditional public-procurement and regulated markets we can expect to see a concentration and an overall reduction of employment at Community level in the boilermaking and energy-producing sector and, subject to certain conditions, in rolling stock. This prognosis is based on three factors: the less dynamic nature of demand, the extent of economies of scale, and the very marked polarization of competitiveness. Training to provide vocational reinsertion via recycling should play a major role in reducing the social costs of restructuring and strengthening the competitive capacity of these sectors. In sectors such as electrical equipment and shipbuilding, we can expect to see a modernization of technology principally intended to boost competitiveness with extra-Community rivals. Employment distribution between the Member States will become more concentrated if Community foreign policy offers increased access to third countries and if merger and takeover strategies prevail over association and cooperation strategies between firms in the different countries. If the reverse is the case, this employment will remain more dispersed. In any event, the merging process will require a major training drive to ensure vocational reinsertion in cases where it results in job losses.

9.1.3. In sectors with moderate non-tariff barriers we can expect very contrasting developments, for example:

In sectors such as ceramic goods, footwear and clothing we will be faced with two kinds of dilemmas: for the southern Member States, the dilemma between expansion and modernization with very different consequences for employment, and for the northern Member States, the dilemma between differentiation, relocation or withdrawal will also have very different consequences for employment.

Within this framework of possibilities, different lines of approach will undoubtedly coexist, the question being to what relative degree. In the case of the southern Member States, a policy of expansion will be seeking to benefit from current competitiveness to sustain employment, while a policy of modernization will be seeking to boost competitiveness and therefore jobs in the long term, even if, in the short term, it blocks workforce growth and requires a quite expensive personnel retraining and recycling programme.

For sectors such as motor vehicles, electronic equipment and domestic-type electrical appliances, we can expect a general trend towards modernization in order to match the extra-Community competition associated with three other strategies which could be adopted by firms in the leader countries: differentiation, cooperation and relocation. The first will make it possible to protect domestic employment, the second will also stimulate employment in other countries and the third will transfer it in part to other countries.

9.2. Four possible scenarios for the development of employment quality

In Section 8 we presented two types of possible adjustment scenarios in the southern Member States, an inter-industrial and an intra-industrial scenario.

The trends which we have just indicated for some of the sensitive sectors suggest that there will be a 'mix' of intersectoral and intrasectoral specialization between Member States, depending on the sectors and strategic reorientations applied. Furthermore, as regards employment trends, other possible situations must be considered.

In the framework of the scenario of intersectoral specialization, the two following cases must be distinguished:

In the first case, the less developed Member States succeed in modernizing the sectors in which they are specialized, triggering a move towards higher qualifications in these sectors.

In the second, resistance to the necessary restructuring will result in stagnating qualification structures and render these Member States very vulnerable to competition from developing countries.

Two cases can also be distinguished with respect to the scenario of intrasectoral specialization:

- (i) the one bringing greater polarization of qualifications between the Member States, and
- (ii) the other bringing greater approximation of qualification structures.

The Irish experience highlights this distinction in so far as this country's pronounced specialization in sectors with a high technology content does not seem to have been accompanied by a general improvement in the qualifications of the workforce as, in many cases, it has brought the development of less qualified segments within these sectors.

These four scenarios and their principal characteristics are presented in Table 9.1.

The four scenarios and economic and social cohesion

We can then discuss the conditions which could affect the proportions in this mix, but before doing so, we must first stress that these scenarios will not be neutral from the point of view of the Community's economic and social cohesion and that they will present different timing profiles.

In fact, we may presume that the different scenarios will have the following impact (see Table 9.1):

(i) the scenario of intersectoral specialization with modernization difficulties in the less developed Member States could result in a polarizing of qualifications between Member States and cumulative divergences between them as regards employment quality. Faced with competition from the developing countries, this could lead to a process of cumulative divergences where differences between Member States from the point of view of working conditions will be increased through recourse to illicit work;

- (ii) the scenario of intersectoral specialization with modernization in the less developed Member States would allow, up to a certain point, an improvement in qualifications and working conditions in these countries, permitting an upwards convergence within the Community;
- (iii) the scenario of intra-industrial specialization of little qualifying effect in the less developed Member States could also lead to cumulative divergences but there would be the advantage, compared with the first scenario, of protecting these countries from general competition from the developing countries;
- (iv) all things considered, it appears that the scenario of 'qualifying' intrasectoral specialization would be the best basis for a process of upwards convergence, in so far as it would allow the less developed countries to improve their productive specialization and labour qualification structures. This improvement may in turn stimulate employment, especially if it is accompanied by increased demands as regards social standards and practices concerning human resources management.

We would then have a process of upward cumulative convergence which would allow the most disadvantaged countries to catch up within the framework of increased cooperation and coordination between the Member States.

Table 9.1

From intra-Community specialization scenarios to labour-skill scenarios for the Community

Intra-Community specialization scenarios	Skill implications for Member States	Most probable evolutionary scenario for labour skill			
A — Intersectoral specialization with mod- ernization problems in the less developed Member States	Polarization and specialization of skills between Member States	Growth in divergences between Member States			
B — Intersectoral specialization with mod- ernization in the less developed Mem- ber States	Increase in skill in specialized sectors of less developed Member States	Increasing convergence of Member States up to a certain threshold			
C — Intrasectoral specialization involving limited skill requirements in the less developed Member States	Polarization of skills between Member States	Growth in divergences between Member States but less marked than for A above			
 D — Intrasectoral specialization involving increases in skills in the less developed Member States 	Convergence of skills across Member States	Increasing convergence towards high levels of skills depending particularly on the efficiency of both policies and the social dialogue at the Community level			

Source: Rodrigues (1990).

A different timing of changes for each scenario

These scenarios also clearly differ with respect to the adjustment costs involved.

The scenario of intersectoral specialization with modernization difficulties will perhaps involve lower short-term adjustment costs, as it expresses defensive strategies, crystallizes existing structures and minimizes movement on the labour market. But in fact it merely postpones the adjustment costs which will be all the higher in the long term.

The scenario of intrasectoral specialization of little qualifying effect implies higher short-term adjustment costs in so far as it could trigger intersectoral mobility which will be more or less disturbing depending on the degree to which qualifications can be transferred from one sector to the other.

The two other scenarios will bring higher short-term adjustment costs, the intrasectoral qualifying scenario having higher costs than the intersectoral specialization with modernization scenario, as they involve a training drive and a renewal of the available workforce which will be particularly demanding in the case of qualifying intrasectoral specialization. Yet, on the other hand, these are the scenarios which will induce offensive strategies and fewer difficulties in the long term.

9.3. Improved specialization

Let us now consider the possibilities for mixing and influencing these different scenarios. We cannot pretend to analyse all the pressures to which these scenarios could be subject. We will limit ourselves to a number of practices or policies essential to a better understanding of the possible impact on each Member State. The recourse to and movement towards a particular scenario depend in particular on the attitude taken by different Member States vis-a-vis the use of illicit work, the use of labour costs as an essential competitive factor, and more generally of social dumping and, finally, the development of a skilled workforce.

9.3.1. Illicit work in industry and the prospect of the internal market

Should we fear a worsening of this phenomenon in sectors already experiencing highly organized fraud ('chain' subcon-tracting in clothing or leather goods)?

With respect to 1992, the problem posed by the extent of fraud in certain traditional sectors is perhaps raised at an-

other level, external rather than internal: such production is in fact in open competition with the developing countries with a lower level of industrialization. The question is therefore that of the challenge which Europe is going to mount: should we pit ourselves against competition from countries with low labour costs or, on the contrary, concentrate on products incorporating a high value added? If we choose the second option, we must accept the consequences.

Finally, upward harmonization of a certain number of regulations concerning the health and safety of workers together with protection of the environment runs the risk of driving certain activities out of the mainstream of declared labour. We are already seeing dangerous products being used in clandestine workshops in Italy and Greece. In this respect, it is important to develop information so that all workers, both declared and undeclared, are aware of the risks involved and the preventive measures which exist.

The completion of the internal market also poses the general problem of controlling working conditions. This could be tightened up by adopting the minimum regulations included in the 'model' employment contract valid for the Community as a whole. It is vitally important for all governments, but particularly those of countries with widespread illicit industrial activities, to take a good look at the real potential for development presented by illicit work.

9.3.2. Labour costs as a competitive factor, and the fear of social dumping

Given that the creation of the internal market will intensify competition throughout the Community, any significant differences in working conditions (wages, social security cover, social services, etc.) which exist between Member States increase the possibility of such differences distorting competition and raising the spectre of 'social dumping'.

'Social dumping' may be defined as recourse to working conditions and social standards which are below the levels which the productivity of the economy could normally justify, with the purpose of increasing market shares and improving competitiveness. Member States with better working conditions could be forced to reduce, or at the very least, to halt the process of improvement for fear of activities relocating to countries with inferior conditions.

Labour costs are clearly lower in the southern Member States than in the northern countries. Does this difference amount to a real comparative advantage for the southern Member States and can it lead to the development of practices of social dumping?

Wage costs as a factor of competitiveness

The case of two sectors sensitive to the completion of the single market: the textile and motor vehicle industries

One way of measuring the comparative advantage of wage costs is to evaluate the share of labour costs in a company's accounts. This box is devoted to this subject, concentrating especially on two particularly important sectors: motor vehicles and textiles.

In order to take account of differences between the various European countries in the matter of financing social expenses, the concept adopted here does not include wages alone, but also social charges and allocations to pension funds.

The data examined are taken from the BACH harmonized accounting databank, which is managed by the Commission.

1. Unequal labour costs between countries ...

The extent of differences in levels between the different countries varies depending upon the sector considered: it is greater in the motor vehicle industry than in the textile industry.

In the textile industry, two groups may be distinguished: on the one hand, Germany, France, the United Kingdom and Spain, where firms bear the highest labour costs (26,4, 25,8, 26 and 23,8 % respectively) and on the other hand Italy (16,8 %) and Portugal (17,3 %).

In the motor vehicle industry, the differences are even greater between Germany and the United Kingdom on the one hand (25,8 and 22,1 % respectively) and the remaining countries on the other hand (between 12,4 and 16,4 %).

Logically enough, the burden of labour costs is heavier in the textile industry than in the motor vehicle industry: the impact of differences in production methods between these two sectors, particularly in capital intensity, is a crucial factor and conceals the cost advantage to the textile industry of the much greater use of female labour.

2. ... which are tending to decrease

During the period 1982-87, the burden of labour costs diminished in both the textile and motor vehicle industries in five of the countries considered: only the United Kingdom showed a contrasting trend, no doubt explained by the strong relative fall in wages immediately prior to 1982.

The decrease was most marked in the motor vehicle industry, and particularly in France, Spain and Italy. In the textile industry, the decrease was also significant in Spain, Italy and Portugal. By contrast, German industry benefited from a smaller fall in the burden of labour costs and its relative position, as 'leader' of the group of countries, has deteriorated. This can no doubt be explained by the level of qualification of the workers which is higher than in the other countries.

Table B.8

Number of women as a % of all manual and non-manual workers, 1984

	FRG	France	Italy
Textiles	49,9	52,8	54,8
Motor vehicles	14,7	16,8	16,0

Source: Labour costs 1984, Eurostat.

Table B.7

Weight of labour expenditure supported by industrial firms, 1987

						(in % of turnover)
	FRG	France	Italy	United Kingdom	Portugal	Spain
Manufacturing industry	25,8	20,6	18,0	19,0	14,3	20,3
Textiles	27,0	25,8	16,8	26,0	17,3	23,8
Motor vehicles	25,8	16,4	16,0	22,1	12,4	16,0



3. ... and the importance of which is partly explained by the organization of production

Within each of the sectors of activity included, a low labour cost/turnover ratio does not in itself indicate a particularly cheap workforce: in fact, the organization of production, and in particular different levels of recourse to the exterior, by purchasing semi-finished products at various stages of completion or by using subcontractors, may have a marked effect on this ratio: the cost of labour related to the manufacture of semi-finished products is booked as purchases and not as staff and related costs.

Table B.9

Textile and motor vehicle industries: weight of external purchases, 1987

			(in % of turnover			
	France	Italy	Spain	Portugal		
Textiles	63,4	72,7	64,0	68,8		
Motor vehicles	73,9	73,1	_			

Source: BACH (European Commission, DG II).

This explains the low level of labour costs borne by the Italian textile industry, compared with the situation of Italian manufacturing industry as a whole. The phenomenon is all the more evident in our tables as we are working with samples where large firms are in the majority.

By harmonizing the accounting data we can compare semifinished product purchasing in four countries: France, Italy, Portugal and Spain.

Between the two countries with similarly low relative labour costs, namely Italy and Portugal, the difference in the 'purchases/ turnover' ratio reached 2,4 points in 1982 and 3,9 points in 1987, the Italian textile industry having most recourse to the exterior. If we suppose that the productive structure of the textile industry is the same in both countries (in this specific case, depreciation levels are comparable), we can conclude that the advantage as regards labour costs in favour of Portugal is quite clear and has strengthened.

The same reasoning can be applied to two of the countries in the first group, both with relatively high labour costs: Spain and France.

In France, labour costs, which remain very close to those observed in Spain in 1982 (27 % and 27,4 % respectively), fell by a smaller amount and the difference between the two countries reached 2 points in 1987. At the same time, purchases showed diverging trends: lower at first in France, they increased as a result of increased recourse to the exterior, whilst falling in Spain. Thus, the French textile industry seems to have changed its method of production more than its Spanish counterpart, with increased recourse to the exterior combined with wage increases.

In the motor vehicle industry, Germany is in a rather special position due to the high cost of labour, which is not apparently offset by any marked recourse to the exterior. The absence of statistics on purchases does not allow us to explain any further the relative position of the German motor vehicle industry. On the other hand, the availability of such figures for France and Italy does allow us to note the proximity of the productive strategies of the French and Italian motor vehicle industries:

4. Independently of their level, comparison of changes in wage costs and value-added levels permits an assessment of improvements in productivity

The increasing (or decreasing) burden of labour costs may correspond to two contrasting situations depending on whether it is accompanied by an improvement or a worsening in the productivity of the workforce. As we do not have the necessary data to directly calculate this productivity, we have based our calculations on trends in the level of value added: the value added/turnover ratio allows us to assess the real contribution of firms to the creation of wealth.

Table B.10 gives, for each possible combination, a schematic definition of the situation in which an industry may find itself.

The analysis of the trends of these two ratios in the different countries allows us to characterize each national industry.

In the textile industry, there is a relative increase in purchases, that is, increased recourse to subcontracting or the purchase of more or less finished goods in four cases: Germany, Italy, Spain and Portugal. The relative fall in labour costs is accompanied by a fall in the level of value added.

This situation corresponds perfectly to the production relocation movements which typify Germany. It is more surprising in the case of Portugal but, apart from the fact that imports from the newly industrialized countries affect Europe as a whole, it can be explained by the importance, in this sector of activity, of work in the home. This national subcontracting is booked under purchases by the firms—usually large firms—included in our analysis.

The French textile industry is distinctive in that the fall in labour costs has been accompanied by a slight rise in the level of value added, thus by an improvement in labour productivity. We saw above that this trend seems to be associated with an increase in capital intensity, no doubt linked to the investment drive during the period.

Table B.10

Trends in labour-related costs relative to trends in the value added/turnover ratio

Trends in labour-related costs	Trends in the value added/turnover ratio						
×	Decrease	Increase					
Daamaaaa	Reduction of labour costs accompanied by a fall in the level of value added/turnover ratio.	Reduction of labour costs accompanied by a rise in the level of the value added/turnover ratio.					
Decrease	Increased out-sourcing. Improvement in labour productivity where the fall in the value added/turnover ratio is more limited.	Improvement in labour productivity. Capital-deepening investment.					
Increase	Increase in labour costs accompanied by a fall in the level of the value added/turnover ratio.	Increase in labour costs accompanied by a rise in the level of the value added/turnover ratio.					
Increase	Fall in labour productivity.	Improvement in labour productivity. Increase in skill levels.					
Source: Commission services.							

The United Kingdom is also in a distinctive situation, as we are seeing increasing labour costs coupled with a clear improvement in the level of value added. This double trend corresponds to an increase in labour productivity which in this case appears to be associated rather with a specialization in sophisticated products with a high demand, and a simultaneous improvement in qualifications which justified the marked wage increases.

In the motor vehicle industry, the situation is more uniform, all the countries showing a simultaneous relative fall in the level of value added and the burden of labour costs, that is, a transfer of the creation of value to the suppliers.

The only distinction concerns the relative size of these movements which reflects trends in competitiveness: in Germany and Spain the fall in the level of value added is stronger than that of labour costs, which suggests a worsening of competitivity, while the opposite is the case in Italy, France and the United Kingdom which seem to show an improvement in the productivity of their workforce.

Table B.11

Relative position of textile industries compared to national industries in general

Evolution of	Evolution of the value added				
labour costs	Decrease (-)	Increase (+)			
Decrease (-)	FRG $(-1,6; -1,5)$ Italy $(-1,1; -0,9)$ Portugal $(-1,2; -2,8)$	Spain (- 0,2; + 0,2)			
Increase (+)	France $(+2,3; -0,8)$ United Kingdom $(+0,6; -0,4)$				

Low wage costs in the southern Member States are the result of low levels of labour productivity. An examination of wage costs and unit wage costs (that is the wage cost required to produce one unit) clearly shows that productivity easily makes up for any wage differences (see Table 9.2). There is thus no reason to have a fear of widespread social dumping.

Moreover, international competitiveness is not determined by labour costs alone. Other factors, such as product quality, delivery reliability and after-sales service are also important. The presence of subcontractors and the quality of financial and administrative services are also increasingly affecting decisions as to where to set up production units.

Finally, the box above shows that it is not always easy to measure the comparative advantage presented by a particularly cheap workforce.

Thus, the organization of production and recourse to subcontracting in particular may also affect the share of labour costs in relation to turnover.

Any dynamic economy is characterized by the relocation of production factors according to the comparative advantages of different geographical areas. This is also a positive process which contributes towards economic growth.

In certain industries with a high labour content, lower wage costs in the southern Member States can therefore prompt firms in the north to relocate their activities. These north/ south relocations are also in keeping with the logic of the internal market as they seek to benefit from the comparative advantages of the southern Member States. As mentioned in the previous chapter, they can also help to favour the restructuring and modernization of production units in these countries. However, the analysis below which seeks to identify sectors where such relocation could be more pronounced shows that they should remain confined to a limited number of industries.

This analysis is based on the hypothesis that the relocations induced by the completion of the internal market will only affect the 40 industrial sectors in which non-tariff barriers exist. The northern Member States will be most inclined to relocate activities where labour costs are a heavy burden. In this case, the benefits of using a less expensive workforce are relatively greater than in sectors where labour costs account for just a small share of production costs. Similarly, in sectors with substantial price differences between Member States, price competition is likely to intensify and it will be increasingly important to keep costs down.

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Labour	costs	and	unit	labour	costs	in	the	M	lemb	er	St	at	es

	(Deviation with regard to the EC average in 1987)	
	Labour costs	Unit labour costs
GR	- 56,1	-24,4
Р	-74,4	-13,9
I	1,4	-11,8
E	-25,8	-11,4
F	18,4	2,9
NL	27,2	2,9
D	22,2	3,3
IRL	-12,8	3,9
UK	-23,0	7,2
В	17,5	7,9
DK	14,0	8,5
L	15,7	19,8

Source: Employment in Europe, 1989, EC

Furthermore, relocation is made easier in industries which do not require a skilled workforce or sophisticated technology. Finally, north/south relocations will also occur in sectors where the southern Member States have comparative advantages due to lower wage costs and where their firms are highly competitive.

On the basis of this reasoning, the following criteria have been adopted to identify sectors with a high risk of north/ south relocation:

- (i) share of labour costs in the value of production above the industry average in the northern Member States;
- (ii) good competitive position in the southern Member States;
- (iii) differences in unit wage costs to the advantage of the southern Member States;
- (iv) major price differences for identical products between the Member States;
- (v) low intensity in R&D expenses.

On the basis of these characteristics, there would seem to be little likelihood of north/south relocation in two of the three groups of sectors concerned by 1992:

on the high-technology public-procurement markets, the northern Member States will endeavour above all to boost technological competitiveness and in this respect the southern Member States have a comparative disadvantage;

on the traditional public-procurement markets, the southern Member States do not really present any comparative advan-
tages except in certain sectors such as shipbuilding where Spain and Portugal record good external performances. But the real question here is not so much one of north/south relocation as the competitiveness of the industries of southern Europe compared with the newly industrialized countries.

By contrast, in the latter group, that of average non-tariff barriers, there is a higher risk of relocation. Competition based on prices could well intensify in these sectors. Furthermore, this group includes a majority of traditional industries in which labour costs account for a large share of total costs. Finally, this group also includes those sectors in which the southern Member States at present enjoy comparative advantages.

In this group, just eight sectors combine several characteristics favourable to relocation. These eight sectors are in the field of textiles/clothing/footwear, the ceramics industry and toys. They represent 7,8 % of the value added of Community industry.

In some of these sectors, the southern Member States are at present experiencing increased competition from the newly industrialized countries and certain developing countries which offer even greater advantages in terms of labour costs. For example, the hourly wage cost in Pakistan is one quarter of that in Portugal. Faced with this increased competition, certain southern Member States tend to reorganize and modernize their industries. The question is whether or not the internal market will cause the northern Member States to relocate to southern Member States rather than to third countries and whether this north/south relocation can help in the process of restructuring these industries in the south.

9.3.3. Qualifications and training

There is a voluntarist policy which would serve to promote both economic and social well-being, namely the promotion of training in order to permit a growth in skilled labour.

First of all, we can examine the levels of qualification which characterize each sector or group of sectors. Table 9.3 presents the structure of labour qualifications with reference to each industrial sector (for NACE-2 positions only) drawn up on the basis of the Community average (EUR 9). We can see that the machinery and mechanical equipment, metal goods, motor vehicle and other transport equipment sectors differ from the rest by virtue of a distinctly higher proportion of skilled workers. Also, the office equipment and electrical and electronic equipment sectors differ from the rest by virtue of a relatively higher share of skilled workers involved in service activities, including managers. Table 9.4. shows the share of workers with a diploma of higher education per group of sectors affected by the completion of the internal market in British industry (the levels are, to a large degree, valid for other countries too). This information suggests that Group 1 and 2 industries employ a greater proportion of highly qualified personnel than Groups 3 and 4. In overall terms, the sectors affected also employ a greater proportion of such personnel than the rest of industry.

It is unfortunately difficult to develop the study of qualification levels attained in each of the sectors concerned due to lack of relevant information on this subject. In conclusion, we can however stress that the industrial sectors seem to differ from each other on the basis of their qualification profiles and will continue to do so despite the degree of change which present technological transformation will bring. Secondly, according to the rare information available on trends in qualifications over time (information mainly originating in case studies), the level of qualifications required in industry by modern production equipment is tending to rise. Also, an increasing number of entrepreneurs consider the lack of a skilled workforce to be an obstacle to increasing production and investment.

The importance attached to an education-training drive is not equally shared throughout the Community. Yet such a drive is essential as it must make it possible to renew existing qualifications, increase comparative advantages in terms of the ratio of real salary/level of qualification and therefore stimulate other types of investment (that is, not concentrated solely on industries with a high labour content), whether of national or foreign origin. Table 9.5, which gives the level of education among the population, shows that major efforts are still to be made, notably in southern Europe and in Portugal and Greece in particular. In these countries, it is often a matter of investing in terms of both supporting structures and educational infrastructure (building schools and training centres, etc.).

These therefore, very briefly described, are some features of the landscape of sectoral employment specialization in the Member States in terms of qualifications. They give legitimate grounds for supposing that this specialization is at a lower level in most of the less developed countries. It could of course be claimed that the so-called 'traditional' sectors can also develop towards higher technology content and vocational qualifications. Such a trend is in fact inevitable, but that signifies precisely that, in the majority of cases, these sectors run the risk of creating more job losses than new jobs during this process of modernization. All of which could present these countries with a dilemma: to modernize these 'traditional' sectors they will have to be able to develop other sectors to ensure alternative employment.

Table 9.3

Structure of qualifications by sector¹

NACE		1	Manual worker	s		Non-manual workers					
Code	Unskilled	Semi-skilled	Skilled	Supervisor 1	Supervisor 2	Clerical	Assistant	Other senior executives	Management executive 1	Management executive 2	
21	5,14	25,07	49,36	2,01	4,85	4,36	5,00	3,39	0,81	0,00	
22	12,48	29,72	30,08	1,90	4,49	7,24	7,78	5,31	0,92	0,11	
23	15,72	28,48	29,57	0,84	3,11	8,40	6,98	4,77	1,00	0,01	
24	21,20	31,56	22,67	3,04	3,33	6,93	6,51	3,67	1,03	0,06	
25	9,82	22,06	20,83	2,22	5,26	12,43	16,42	8,16	2,50	0,30	
26	12,75	35,65	23,43	3,46	5,62	4,81	8,83	4,00	1,33	0,11	
31	16,09	25,89	31,64	2,41	3,50	7,38	6,84	4,80	1,39	0,07	
32	8,41	18,01	37,41	2,09	3,93	9,73	11,56	7,32	1,45	0,09	
33	8,34	15,60	12,04	2,60	5,57	14,12	21,20	18,46	1,53	0,53	
34	16,45	24,65	21,50	1,87	3,03	9,27	14,35	7,79	0,98	0,11	
35	10,30	34,35	31,93	1,89	2,36	5,79	8,28	4,41	0,59	0,11	
36	6,70	15,32	43,27	2,09	4,06	8,93	13,21	5,89	0,49	0,05	
37	15,46	22,86	24,57	2,36	4,08	10,58	13,79	5,41	0,82	0,07	
41-42	28,08	21,66	19,76	2,63	3,08	10,02	7,82	4,23	1,16	0,08	
43	17,26	44,99	14,94	2,73	4,33	6,51	4,90	3,04	1,25	0,03	
44	18,06	44,76	19,43	2,28	1,60	6,43	3,42	3,24	0,80	0,00	
45	14,55	44,61	20,57	2,40	3,26	6,61	4,38	2,35	0,88	0,02	
46	21,17	27,09	29,22	2,93	3,22	6,29	5,54	3,22	1,28	0,03	
47	13,91	22,89	28,54	2,00	3,08	12,04	10,28	5,50	1,46	0,07	
48	21,04	34,50	18,07	2,02	3,52	7,33	7,87	4,40	1,20	0,06	
49	24,38	27,78	18,69	2,43	3,37	10,88	7,03	3,41	0,95	0,00	

Source: Structure of earnings 1978-1979, Eurostat.

Table 9.4

Level of skills in sensitive industries in the United Kingdom

			(% of employment)
Group	Degree or equivalent	Higher education below degree	Total
1. High-technology public-procurement sectors	19,3	9,6	28,9
2. Traditional public-procurement and regulated markets with h potential of rationalization	igh 12,2	6,4	18,6
3. Idem as 2 but with a higher potential of restructuring	4,7	5,2	9,9
4. Moderate NTB sectors	5,3	4,5	9,8
Total of Groups 1-4	7,6	5,4	13,0
Non-sensitive industries	5,0	3,4	8,4
Total manufacturing	6,3	4,4	10,7

Source: United Kingdom's report prepared for the EC by the Department of Trade and Industry.

100

Table 9.5

Level of education of the population aged 20 and over

		Completed less than upper secondary education	Completed upper secondary education	Vocational, non-academic educational training	Post- secondary education	University degree
Belgium	M F	64,0 70,8	21,4 17,3			14,6 12,0
FR of Germany	M F	18,7 43,0	10,3 7,3	60,5 45,3	3,9 1,2	6,0 3,2
Italy	M F	71,9 75,6	22,6 20,7			5,5 3,7
Netherlands	M F	48,2 60,1	31,5 27,7		14,1 10,2	6,1 1,9
Portugal	M F	87,4 89,0	8,4 6,3		0,8 2,5	3,4 2,0
Spain	M F	67,3 73,9	24,3 19,5		4,3 4,5	4,1 2,1
United Kingdom	M F	48,2 72,1	6,5 6,3	28,8 6,8		16,1 14,8

9.4. Real convergence and virtuous interactions

We now come to one of the central elements in any common reflection on economic and social matters: the improvement of labour quality and specialization quality constitutes a virtuous circle which will ultimately permit an upward convergence of living and working conditions. The problem and central difficulty of this convergence and these virtuous interactions lies mainly in setting this process in motion.

Graph 9.2 tries to highlight some of the relations which could stimulate this virtuous interaction, together with some of the conditions it requires:

(1) On the one hand, an improvement in specialization quality, as we have defined it, may be reflected in the development of sectors or segments of sectors with technological and organizational characteristics which tend to demand generally higher qualifications, in turn stimulating a more qualified supply of human resources, provided, however, that the education-training system has the capacity to meet this need.

- (2) Conversely, the availability of more qualified human resources stimulates the choice of more qualifying technological and organizational options—if it is accompanied by a change in corporate cultures and management capacity.
- (3) On the other hand, the increase in the general level of qualifications linked to improved human resources management—and therefore of labour quality—can develop new factors of competition—cost and non-cost which, in turn, stimulate a reorientation of investment and an improvement in productive specialization—if that is also accompanied by a change in corporate cultures and management capacity.
- (4) Finally, these new gains in competitiveness provide firms with a greater margin for financial manoeuvre and allow them to more easily support an improvement in the quality of employment—if this is accompanied by a progressive raising of standards produced in the framework of collective negotiation and social policy.



These different elements imply that there are critical thresholds for policy and contractual decisions linked to labour management. Setting definite goals for convergence, notably in the framework of the Community Charter of Basic Social Rights, will play a major role in encouraging firms and Member States to improve employment quality; but this upward movement must be supported by an improvement in their competitiveness, without which we could see segments of the productive fabric faced with problems of economic survival and problems of structural unemployment. Hence the idea of a dynamic convergence, able to respect the different rates of upward movement, but effectively upwards none the less.

9.5. A forecast of the impact of the internal market on industrial employment

Neither quantitative nor qualitative trends in employment are easy to identify, even less predict. One of the main reasons for this difficulty lies in the many factors determining employment trends and the lack of statistics available in the field of employment quality and training and qualifications in particular. However, it is important to the success of present or future changes in employment to be able to identify present trends and predict them as early as possible.



Thus, in order to ascertain whether the virtuous convergence as presented above is in fact developing, a means of observation is required which provides an answer to the following questions:

- (i) what are the consequences for employment of the competitive position of each sector (or segment) faced with the completion of the internal market?
- (ii) to what extent does the structure of the industrial fabric and workforce of each sector determine this competitive position?
- (iii) what changes should be incorporated in company strategy and the structure of the industrial fabric and workforce in order to bolster this competitive position while improving employment quality?
- (iv) to what extent are such changes actually occurring?

We therefore need a classification scheme of the structural changes which takes account of the complex and non-linear nature of the relationship between production and employment, taking account of the influence of technological options, the structure of the industrial fabric and the structure and methods of labour management which characterize each sector. Graph 9.3 is an initial attempt to present such a classification scheme.

This classification scheme shows that although labour quality is a result of improved economic conditions, it is also a necessary condition for them.

A voluntarist policy to improve working conditions, labour management and training is necessary to accelerate and support economic growth.

The European Employment Observatory which the Commission has recently set up at the request of the Council will look at the theme of changes in employment in the industrial sectors sensitive to the completion of the internal market. This will provide the opportunity to continue this examination and to try to apply the classification scheme on the basis of the information available.

This chapter has not answered all the questions which can be posed on trends in employment content, far from it. Yet this was not the intention. It sought rather to present avenues for thought and conceptual models which could be applied at different levels in order to better identify trends and therefore the changes to be made in the vast area of human resources management.

Annex 1

Annex 1

Sensitive sectors added to or removed from the list of 40 sectors by some countries

Sensitive sectors added to the list of 40 sectors by some countries

		DK	· D	GR	Е	IRL	Ι	Р	UK
	Number of branches	6	7	20	6	1	6	13	3
NACE Code	Sector								
222	Man. steel tubes			х					
224	Prod. non-ferrous metals			х	х				
241	Man. clay prod. for const.		х						
242	Man. cement, lime or plaster		х						
243	Man. constr. mat. in concrete, cement or plaster		х						
244	Man. asbestos art.		х						
245	Working of stone and non-metallic minerals		х						
255	Man. varnishes, paints			х					
258	Soap prods, synth. deterg.	х			х				
259	Other chem. prods for dom. con.				х				
260	Man-made fibres						х	х	
314	Man. of struct. metal prod.	х		х					
316	Man. of tools			х				х	
328	Man. of other machinery and equipment	х		х				х	х
343	Manufacture of electrical equip.			х				х	
352	Man. of bodies for mot. veh.			х			х	х	
353	Man. parts and accessories for mot. veh.						х	х	
363	Man. of cycles, motor-cycles and parts						х	х	
371	Man. of measuring and precision instr.							х	х
373	Man. optical instr.								х
411	Veg. and anim. oils and fats			Х					
412	Slaughtering and preparing of meat			х					
413	Dairy products			х		х			
415	Processing of fish and other seafoods							х	
416	Grain milling							х	
419	Bread and flour confectionery			х	Х			х	
424	Distilling of ethyl alcohol		х	х					
429	Tobacco products		х						
436	Knitting industry	х		х	х		х	х	
437	Textile finishing						х		
439	Other textile ind.							х	
441	Tanning			х					
422	Manufact. leather goods			Х					
462	Man. semi-fin. wooden products				х				
463	Man. of carpentry and joinery components	х							
467	Wooden furniture			х					
471	Man. of pulp, paper and board			х					
472	Processing of paper and board	Х		х					
483	Processing of plastics			х					

Sensitive sectors removed from the list of 40 sectors by some countries

		В	DK	D	GR	Ι	IRL	NL	Р	UK
	Number of branches	2	15	1	15	1	2	2	6	4
NACE Code	Sector							2		
247	Glassware		x	13						
251	Basic industrial chemicals					х				
256	Other chem. products for ind. and agric.									
	purposes		х							
315	Boilermaking						х			
321	Manuf. of agric. machinery				х					
322	Machine tools				х					
323	Textile machinery		х		х					
324	Mach. for food and chemical ind.				х					
326	Transmission equip. for motive power				х				х	
327	Mach. for working wood				х				х	
330	Office and data-processing machinery				х					
345	Radio & TV equip.				Х					
346	Domtype elec: appl.		Х							
347	Lamps, lighting equip.		х							
351	Motor vehicles		х							
361	Shipbuilding				х					
362	Railway material							х		
364	Aerospace		х		х				х	х
372	Medico-surg. equip.				х					
417	Spaghetti, macaroni, etc.	х	х							х
421	Cocoa, choc. & sugar confect.				х					
425	Champagnes & sparkling wines	х	х		х		х	х		х
427	Brewing and malting		х							
431	Woollen industry		х							
432	Cotton industry		х							
438	Carpets		х							
491	Jewellery		х		х				х	
493	Products for photog.									
	and cinemat. labs		х	х	х				х	х
494	Toys and sports goods								Х	

Annex 2

External performances, demand trends and price competitiveness

1. External performances and demand trends

From the point of view of the Member States, specialization in a sector in which demand is growing strongly is an advantage because it can constitute a growth lever for production and employment. By contrast, strong specialization in a sector which is either stagnant or in decline is less favourable because any growth in exports will be at the expense of other exporting countries, contrary to the previous case.

We will therefore use a classification grid combining the coverage ratio and demand trends during the 1980s (1985-87) (Graph A.2.1). In order to avoid attributing too much weight to the base years for this period (1980 and 1987) we have calculated a moving average over three years for two years (1980-82 and 1985-87).

This grid illustrates another aspect of the industrial performance of a Member State, i.e. its ability to respond to Community demand, and it also allows for comparisons between the external performances of a country's high-growth sectors and those characterized by low demand growth.



2. External performances and price positioning

A second classification grid (Graph A.2.2) combines the intra-Community coverage ratio with an index comparing the price of products in one Member State with the Community average. This makes it possible to analyse the link between the external performances of a sector and price competitiveness, and thus to identify those sectors where a price advantage is a major factor in explaining external performances.

It must, however, be stressed that the prices used here are final consumer prices and not production prices. Thus, the existence of an obsolete distribution network can result in high consumer prices even if production prices are comparable to those observed in the other Member States.

The strong sectors with a good price competitiveness will tend to benefit from European integration while the opposite is the case for the weak sectors with a mediocre price competitiveness. In this respect, when the difference between prices in a Member State and the Community average in a given sector is a maximum of 5% (in a positive or a negative sense), it is assumed that this price difference is insufficient to offset the costs related to intra-Community trade (transport, insurance, exchange risk, etc.) and therefore does not constitute a comparative advantage or disadvantage.

This classification also makes it possible to identify the sectors in which non-price considerations play a major role. These other factors which may influence a sector's external performances are, for example, the quality and dependability of products, the degree of technical perfection, the organization of distribution networks, delivery times, etc. Thus, various studies (cited in Walsh, 1987) show that technological innovation and a concept of quality are of more significance than price alone when it comes to a consumer's decision to purchase. The conclusion drawn from this classification scheme should therefore be treated with caution.



Annex 3

Results of the estimated models (1) and (2) presented in Box 4

Results from the estimation of equation (1)

Country			Explanatory	variables	
	K/Q	L/Q	RD	R ^{2c}	F
BLEU	$^{+0,28}_{(1,33)}$	$-0,29^{1}$ (1,82)	-0,03 (0,47)	0,59	F3,90 = 46,2
D	0,16 (0,78)	+ 0,03 (0,21)	$^{+0,27^{1}}_{(4,60)}$	0,69	F3,90 = 69,5
GR	$^{+0,44}_{(0,78)}$	-0,46 (1,11)	$-0,62^{1}$ (3,80)	0,32	F3,91 = 15,9
E	0,33 (0,84)	+ 0,26 (0,87)	$-0,36^{1}$ (3,08)	0,17	F3,91 = 7,4
F	0,30 (1,37)	$-0,28^{1}$ (1,75)	$^{+0,10}_{(1,60)}$	0,46	F3,91 = 27,7
Ι	$^{+0,08}_{(0,19)}$	$^{+1,02^{1}}_{(3,24)}$	-0,13 (1,01)	0,45	F3,91 = 26,7
NL	-0,04 (0,16)	$-0,38^{1}$ (2,33)	$^{+0,02}_{(0,25)}$	0,36	F3,91 = 18,5
Р	0,69 (1,31)	$^{+1,32^{1}}_{(3,38)}$	$-0,65^{1}$ (4,17)	0,32	F3,91 = 15,9
UK	-0,46 (1,59)	+0,28 (1,34)	$^{+0,291}_{(3,45)}$	0,52	F3,91 = 34,5

Equations with a skilled-labour intensity variable

Federal Republic of Germany

United Kingdom

$$Log TC = -0.47 Log K/Q + 0.29 Log L/Q + 0.24 Log RD$$
(1.63)
(1.37)
(2.38)
+0.52 Log LQ -2.61
(0.87)
(0.98)
R^{2c} = 0.52 F4.90 = 26.0

¹ Significant at the 10% level.

Source: Commission services.

Results from the estimation of equation (2)

Country		Expla	natory varia	bles
	K/L	RD	R ^{2c}	F
BLEU	$0,30^{1}$	-0,02	0,60	F2,90 = 69,8
D	(2,20) -0,08	(0,37) $0,26^{1}$	0,69	F2,90 = 103,9
GR	0,51	(4,56) $-0,60^{1}$	0,33	F2,91 = 24,2
E	(1,47) -0,08	(3,88) $-0,32^{1}$	0,16	F2,91 = 10,2
F	(0,33) $0,32^1$	(2,81) $0,12^{1}$	0,47	F2,91 = 42,5
Ι	(2,31) -0,82 ¹	(1,87) -0,07	0,45	F2,91 = 38,8
NL	(3,03) $0,30^{1}$	(0,55) - 0,01	0,36	F2,91 = 26,9
Р	(2,12) -0,64 ¹	(0,10) - 0,51 ¹	0,26	F2,91 = 17,0
UK	(1,84) $-0,33^{1}$ (1.84)	(3,25) $0,27^{1}$ (3,29)	0,52	F2,91 = 51,1

¹ Significant at the 10% level.

Source: Commission services.

Annex 4

Classification of the 40 sectors according to their structural characteristics

1. Capital and R&D-intensive sectors

- 247 Glass and glassware
- 248 Ceramic goods
- 251 Basic industrial chemicals
- 256 Other chemical products mainly for industrial and
- agricultural purposes
- 257 Pharmaceutical products
- 322 Machine-tools for working metal
- Transmission equipment for motive powerOffice and data-processing machinery
- 344 Telecommunications
- 345 Radio and television
- 346 Electrical appliances
- 351 Motor vehicles
- 364 Aerospace equipment
- 372 Medical and surgical equipment
- 481 Rubber products
- 493 Photographic and cinematographic laboratories

2. Capital but not R&D-intensive sectors

- 417 Spaghetti, macaroni, etc.
- 421 Cocoa, chocolate and sugar confectionery
- 425 Champagnes, sparkling wines
- 427 Brewing and malting
- 428 Soft drinks

3. Skilled-labour-intensive sectors

- 315 Boilermaking
- 323 Textile machinery
- 342 Electrical machinery
- 347 Electric lamps & other electric lighting
- 362 Locomotives, tramways

4. Labour-intensive sectors

- 361 Shipbuilding
- 432 Cotton industry
- 451 Footwear
- 453 Clothing
- 455 Household textiles
- 491 Jewellery
- 494 Toys and sports goods

5. Sectors with low capital and labour intensities

- 321 Agricultural machinery
- 324 Machinery for food, chemical and related industries
- 325 Plant for mines, iron and steel industry
- 327 Other machinery for specific branches
- 341 Insulated wires and cables
- 431 Wool industry
- 438 Carpets

Bibliography

Abd El Rahman, K. S. (1987), 'Hypothèses concernant le rôle des avantages comparatifs des pays et des avantages specifiques des firmes dans l'explication des échanges croisées de produits similaires', *Revue de l'économie politique* No 2.

Atkins Management Consultants (1987), 'The cost of non-Europe in public-sector procurement', *Research on the cost* of non-Europe, Vol. 3, Documents series, CEC.

Balassa, B. (1961), The theory of economic integration, Allen & Unwin, London.

Balassa, B. (1966), 'Tariff reduction and trade in manufactures among industrial countries', *American Economic Review*, Vol. 56.

Balassa, B. (1966), 'The determinants of intra-industry specialization in United States trades', *Oxford Economic Papers*, July, pp. 220-256.

Balassa, B. and Bauwens, L. (1988) 'The determinants of intra-European trade in manufactured goods', included in *The European internal market*, A. Jacquemin and A. Sapir (eds), pp. 185-201.

Banque de France (1989), 'Encours des investissements directs français à l'étranger en 1987', Note d'information No 86, April.

Benzie, R. S. (1989), 'Takeover activity in the 1980s', Bank of England Quarterly Bulletin, February.

Bhagwati (1977), 'Changes in labour quality and their implications for the analysis of questions in international trade', in *The international allocation of economic activity*, Ghlin Hesselborn, Wijkman (eds).

BIPE, Cambridge econometrics, IFO, Prometeia (1990), 'Europe in 1994—Economic outlook by sector', Brussels.

Booz Allen Acquisition Services (1989), 'Study on obstacles to takeover bids in the European Community', Commission of the European Communities, September. Booz Allen and Hamilton (1989), 'Effects of the internal market on Greece, Ireland, Portugal and Spain', Report for the EC Commission, July.

Buigues, P. and Jacquemin, A. (1989), 'Strategies of firms and structural environments in the large internal market', *Journal of Common Market Studies*, No 1, Vol. XXVIII.

Caballero, R. and Lyon, R. (1989), 'Internal versus external economies in European industry', mimeo, Columbia Business School.

Chevalier, A. and Gupta, J. (1989), 'Les opérations de concentration: quelques éléments de comparaisons européennes', *Analyse financière*, 1st quarter 1990.

Commission of the European Communities (1988), 'The economics of 1992', an assessment of the potential economic effects of completing the internal market of the European Community, *European Economy*, No 35, March.

Culem, C. (1984), 'Comparative advantages and industrial restructuring: the Belgian case 1970-1980', *Cahiers économiques de Bruxelles*, No 103, 3rd quarter, pp. 457-484.

Fleuriat, M. (1989), 'Mergers and acquisition trends. The French experience', The Euromoney Institute of France, February.

Garella, P. (1989), 'Fusions et acquisitions dans l'industrie européenne', *Economic Observations and Diagnostics*, No 29, October, pp. 185-219.

Geroski, P.-A. (1988), 'Competition and innovation', *Research on the cost of non-Europe*, Vol. 2, Documents series, CEC.

Grubel, H. G. (1970), 'The theory of intra-industry trade', in MacDougall and Snape, R. H. (eds), Muchielli, (1989).

Grubel, H. G. and Lloyd, P. J. (1975), Intra-industry trade in manufactures: theory and measurement of international trade in differentiated products, Macmillan, London.

Hanel, P. and Roncin, A. (1977), 'Le rôle des facteurs de production et du facteur technologique dans les échanges internationaux et produits manufacturés: application à l'analyse du commerce extérieur de la France', Communication to AFSE colloquium, Paris, November 1977.

Helg, R. and Rancci, P. (1988), 'Economies of scale and the integration of the European economy: the case of Italy', *Research on the cost of non-Europe*, CEC, Brussels.

Helpman, E. (1981), 'International trade in the presence of product differentiation, economies of scale and monopolistic competition: a Chamberlin-Heckscher-Ohlin approach', *Journal of International Economics*, No 3, pp. 305-340.

Hufbauer, G. C. (1970) 'The impact of national characteristics and technology on the Community composition of trade in manufactured goods', cited by Mucchielli, op. cit.

Hughes, K. (1986), 'Exports and technology', Cambridge University Press, cited by Mucchielli, op. cit.

Ilzkovitz, F. (1989), '1992: investissements étrangers et délocalisation', Internal report CEC-II/200/89, June, 43 pp.

Jacquemin, A., Buigues, P., Ilzkovitz, F. (1989), 'Horizontal mergers and competition policy in the European Community', *European Economy* No 40, May, Brussels.

Jacquemin, A. and Sapir, A., (1988), 'International trade and integration of the European Community: an econometric analysis', *European Economic Review*, pp. 1439-1450.

Jacquemin, A. and Sapir, A. (1990), 'Ouverture interne et externe du grand marché européen: gain d'efficacité, coût d'ajustement et nouveaux instruments communautaires', Internal report of the CEC, 38 pp.

Jetro (1989), 'Current management situation of Japanese manufacturing enterprises in Europe', fifth survey report, March.

Kay, J. (ed.) (1989), '1992: Myths and realities', Centre for Business Strategies, London Business School, June 1989.

KPMG (1988), 'Getting ready', Results survey, EC 1992.

KPMG (1990), 'Deal watch—International mergers and acquisitions'.

Kravis, C. B., Heston A., Summers, R. (1982), 'International comparisons of gross domestic product and purchasing power', the Johns Hopkins University Press, Baltimore.

Krugman, P. (1987), 'Economic integration in Europe: Conceptual issues' in *Efficiency*, stability and equity: A strategy for the evolution of the economic system of the European Community, T. Padoa-Schioppa (ed.), Oxford University Press, Oxford.

MAC (1988), 'The cost of non-Europe: Technical barriers in six industries', *Research on the cost of non-Europe*, Vol. 3, Documents series, CEC. Martin, C. (1989), 'Spain's industrial trade and productive structure: the effects of EEC membership and inferences of the impact of the single European market of 1992', mimeo, October.

Mayes, D. (1978), 'The effects of economic integration on trade', Journal of Common Market Studies, 17 pp.

Molle, W. T. and Morsink, R. L. A. (1989), European direct investment in Europe, Greenback, May 1989.

Muchielli, J. L. (1987), Principes d'économie internationale, Vol. I, Economica, Paris.

Müller, J. and Owen, N. (1985), 'The effect of trade on plant size' in Schwalbach J., *Industry structure and performance*, Berlin.

National Economic and Social Council (1989), 'Ireland in the European Community: Performance, prospects and strategy', Report published by NESC.

Nerb, G. (1988), 'The completion of the internal market: a survey of European industry's perception of the likely effects', *Research on the cost of non-Europe*, Vol. 1, Documents series, CEC.

Neven. D. (1989), 'The gainers and losers from 1992', paper presented at the Tenth Panel Meeting of Economic Policy, London, October, 66 pp.

Neven, D., 'EEC integration towards 1992: some distributional aspects', Insead memo, Paris, July 1989.

Porter, M. (1982), Choix stratégiques et concurrence, Economica, Paris.

Porter, M. (1986), L'avantage concurrentiel, Inter. Editions.

Pratten, C. (1988), 'A survey of the economies of scale', *Research on the cost of non-Europe*, Vol. 2, Documents series, CEC.

Rodrigues, M.J. (1990), 'Les enjeux du marché intérieur européen pour l'emploi industriel', internal report prepared for the Commission of the European Communities, Dinamia.

Sapir, A. (1989), 'Does 1992 come before or after 1990', in R. W. Jones and A. O. Kreuger (eds), *The political economy* of international trade, Basil Blackwell, Oxford.

Scherer, F.M. et al. (1975), The economics of multiplant operation, Harvard University Press, Cambridge.

Schwalbach, J. (1988), 'Economies of scale and intra-Community trade', *Research on the costs of non-Europe*, CEC Brussels.

Sleuwaegen, L. (1989), 'Stratégies des entreprises et nouvelles formes de coopération entre entreprises', Doc. CEC 1989/ 1270, Conseil central de l'économie, Brussels, December 1989.

Stemitsiotis, L. (1986), 'Les niveaux de prix en Europe de 1970 à 1985', *Economie prospective internationale*, No 27, 3rd quarter.

Torres, A. (1989), 'Trade and foreign direct investment in Spain after EEC integration', mimeo, July, 59 pp.

United Nations-Center on Transnational Corporations (1990), 'Regional economic integration and transnational

corporations in the 1990s: Europe 1992, North America, and developing countries', New York, March.

Vinals, J. (1989), 'The EEC cum 1992 shock: the case of Spain', in Unity with diversity in the European economy: the Community's southern frontier, Bliss, C. and Braga de Macedo, J. (eds), Cambridge University Press.

Walsh, V. (1987), 'Technologie et competitivité-les problèmes particuliers des petits pays', *STI Revue*, No 2.

Wolter, F. (1977), 'Factor properties, technology and West Germany's industrial trade patterns', *Weltwirtschaftliches Archiv*, pp. 251-257, cited by Muchielli, op. cit.

Yamawaki, H., Weiss, L., and Sleuwaegen, L. (1986), 'Industry competition and the formation of the European Common Market', Research report No 8609 by Incap, Katholieke Universiteit Leuven, August.

Part C

National reports

Contents¹

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-

Belgium	119
Denmark	139
Federal Republic of Germany	155
Greece	175
Spain	203
France	225
Ireland	247
Italy	263
The Netherlands	281
Portugal	301
United Kingdom	325

These national reports were prepared on the basis of a common methodology defined by the Commission services. In general, they also drew on harmonized Eurostat data. However, the chapters presented in this section reflect the views of their respective authors.

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Belgium

Pierre Buigues and Fabienne Ilzkovitz¹

Contents

Introduct	tion	121
1. Th	ree principal observations	121
2. Th	e strong sectors	122
3. Th	e weak sectors and the sectors in a stable position	124
3.1. Pro	otected sectors	124
3.2. Ex	posed sectors	125
4. Pe	rformances on extra-Community markets	126
5. Co	mposite indicator of static competitiveness	128
6. Co	mbination of the indicators of static and historical competitiveness	129
7. Dy	namic adjustments	130
7.1. Th due	e effect of 1992 on sales, investments, employment and pro- ctivity — Results of the Belgian survey	130
7.2. Str	ategic reactions of Belgian industrial companies	131
(a) Ex	ternal strategies	132
(b) Int	ernal strategies	133
Conclusio	ons	133
Annex 1	Indicators of static competitiveness in the sensitive sectors identified at a national level	135
Annex 2	Indicators of dynamic competitiveness in the sensitive sectors identified at a national level	136
Bibliogra	phy	137

¹ The authors would like to thank Pol Bernard of the Belgian Planning Bureau for his contribution to this study.

List of tables

1.	Share of the industrial value added in the four groups of sensitive sectors (1985)	121
	Sectors (1965)	121
2.	Share of strong and weak sectors (1987)	122
3.	Weak and strong sectors of Belgian industry in the sensitive sectors	122
4.	Price competitiveness in the sensitive sectors of Belgian industry	123
5.	Growth in Community demand in the sensitive sectors of Belgian industry (period 1980-87)	125
6.	Sectors with differing performances on Community markets and extra- Community markets	127
7.	Combination of indicators of static and dynamic competitiveness	129
8.	Effect of 1992 on the levels of sales, investment, employment and productivity of Belgian industrial companies in the run up to 1992	131
9.	Effect of 1992 on the levels of sales, investment, employment and productivity of Belgian industrial companies in the period 1993-96	132

Graph

1.	Distribution of industrial employment in the Belgian sensitive sectors
	relative to their static competitiveness

128

Introduction

The Belgian study served as a pilot study in the framework of the continuing investigations into the effects of the completion of the internal market. This pilot study was presented on a number of occasions in Belgium during 1988, notably to the 'Europe 1992' framework committee, set up by the 'Conseil central de l'économie', and at the Congress of Belgian Economists of the French-speaking Community. It has therefore been widely discussed with Belgian economists, from both academic circles and the public authorities, the contributions of the experts from the Belgian Planning Bureau proving particularly useful.

The report presented here is an updated version of the initial study, from which it differs in three main respects. Firstly, it is based on more recent data. Secondly, the analysis of competitiveness has taken account of Belgian performance on non-Community markets. Finally, the analysis of competitiveness has been extended to include medium-term prospects by incorporating the results of the survey carried out in 1989 by the Federation of Belgian Enterprises (FEB), in order to be better able to define the expectations and strategic reactions of Belgian firms in the context of 1992.

Before considering the effects of 1992 on Belgian industry, certain characteristics particular to Belgium must first be noted which frequently work to the country's advantage in the present process of integration. Firstly, the economy is already very open and therefore better equipped to deal with international competition than other more protected countries. The degree of openness of the BLEU, measured on the basis of the ratio of imports to GDP, amounts to 70 % against 27 % for the Community, while almost 75 % of its exports are destined for other Member States and almost 70 % of its imports originate from these Member States.

Secondly, as the Belgian market is relatively small, Belgian firms should benefit from the removal of non-tariff barriers by realizing economies of scale and increasing their returns on R&D expenditures. However, in certain sectors protected to date, the smaller size of Belgian companies could constitute a handicap in view of increased competition.

Finally, the presence of many subsidiaries of foreign multinationals within Belgium indicates that the country could be an attractive centre for production units of major European multinationals, particularly in the light of its favourable geographical situation, well-developed infrastructure and skilled workforce. The completion of the internal market will, however, also lead to greater specialization within Belgian industry, particularly in the more competitive sectors. Furthermore, to evaluate the impact of 1992 on Belgian industry, it is important to consider positions of relative strength and weakness in those sectors which are the most affected by 1992. This is precisely the purpose of this study.

1. Three principal observations

First observation

The impact of the internal market is particularly important for Belgian industry. Sensitive sectors account for 49% of the industrial value added and 50% of the industrial employment in Belgium.

If we examine the share of the value added of Belgian industry in the four groups of sectors identified as sensitive at the European level (Table 1), we see that in the hightechnology public procurement group Belgian industries are under-represented compared with the Community average, supplying just 4 % of the industrial value added compared with 6,1 % at the Community level. On the other hand, the share of value added is higher than that noted at the Community level on traditional public procurement and regulated markets, sectors at present protected, and in the group of basic consumer products.

Table 1

Share of the industrial value added in the four groups of sensitive sectors (1985)

	% of industrial value added		
	Belgium	Community	
High-technology public procurement	4,0	6,1	
Traditional public procurement and regulated markets	7,3	6,4	
Sectors competing with NICs	4,3	5,6	
Sectors with average non-tariff barriers	33,2	30,8	
Total	48,9	48,9	

Source : Commission services.

Second observation

The position of Belgian industries in the sensitive sectors is a priori quite positive. The 16 strong sectors, that is the 16 sectors where export performances on the Community market are good, account for a greater share of value added and employment than the 17 weak sectors: they account for

Table 2

Share of strong and weak sectors (1987)

		Number of sectors concerned	% of industrial value added	% of industrial employment
Weak sectors		17	13,3	17,1
Balanced position		5	11,62	8,72
Strong sectors		16	23,9	24,4
	Total	381	48,8	50,2

Sectors 417 (pasta) and 425 (champagne) are excluded from the list due to the virtual absence

of any activity in Belgium. Excluding sector 364 for which information is unavailable.

Source : Commission services

Table 3

Weak and strong sectors of Belgian industry in the sensitive sectors

						1								
NACE code	ACE Weak sectors			NACE code	Balanced position			NACE code	Strong sectors					
	Sectors	CR	▲ CR	SI		Sectors	CR	▲CR	SI		Sectors	TC	▲TC	SI
248 C 322 N 323 T	Ceramic goods Mach. & oth. tools Textile machinery	54 85 57	0 20 7	53 68 51	252 256	Petrochemicals & carbochemicals Other chem. prod. for ind. & agric. Pharmaceuticals	88 106	0 - 16	92 98	247 253 ¹ 315	Glass & glassware Other basic industrial chemicals Boilermaking	248 133 111	$-\frac{10}{30}$	172 126 86
324 M 326 T 327 C 330 C 342 E 344 T 346 L 361 S 362 F 372 M 451 F 453 F	Mach. for food, chemical ndustries Transmission equip. Other mach. & equip. Office & data proc. machines Electrical machinery Telecommunications Domtype el. appl. Shipbuilding Rolling stock Medic. surgic. equip. Footwear Ready-made cloth.	58 52 35 62 64 61 27 80 30 70 15 76	$\begin{array}{c} 0 \\ -5 \\ 2 \\ 4 \\ -1 \\ -8 \\ 6 \\ 47 \\ -24 \\ -15 \\ 3 \\ -1 \end{array}$	47 36 24 31 46 36 19 17 23 62 13 87	257 325 364	Plant for mines, etc. Aerospace equip.	100 107 91	0 20 15	95 91 29	321 341 345 347 351 421 427 428 431 432 438 455 481	Agricultural mach. Insul. wires & cables Radio, TV Lighting Motor vehicles Chocolate, confect. Brewing, malting Water, soft drinks Wool industry Cotton industry Carpets Household textiles Rubber products	139 123 122 110 229 130 323 119 121 152 590 203 129	$ \begin{array}{r} -6 \\ 9 \\ -16 \\ -2 \\ 3 \\ 27 \\ 123 \\ 17 \\ 6 \\ 19 \\ 80 \\ 34 \\ 15 \\ \end{array} $	74 96 95 98 170 111 178 217 132 100 346 205 90

CR = Average intra-Community coverage ratio for the years 1985, 1986 and 1987. $\blacktriangle CR = Trends in the coverage ratio calculated by differentiating between the average for the years 1985-87 and for the years 1980-82.$ SI = Average Balassa SI for the years 1985, 1986 and 1987. $For the industrial average, CR = 107 and <math>\blacktriangle CR = +1$, CR = +1 ¹ Sectors 252 and 253 are a subdivision of sector 251 'Basic industrial chemicals' and are given as a single balanced position sector in Table 2 because, globally, these two sectors have a CR of 96. Sector 491 is classified as a strong point despite its weak coverage ratio due to its strong export specialization.

Source : Commission services

approximately 24 % of industrial value added and employment in 1987. However, it should be pointed out that the weak sectors account for 17% of industrial employment and that certain of these deficit sectors as regards intra-Community trade involve labour-intensive activities. This is true of clothing (4,4 % of industrial employment), telecommunications (4%), electrical equipment (2,1%) and rolling stock (1,1 %).

Third observation

The strong sectors relate primarily to traditional industries and the group of consumer products which will be less affected by the lifting of non-tariff barriers, while the weak sectors concern developing sectors and industries associated with public procurement where considerable restructuring could occur. This last point will be discussed in the two following sections.

2. The strong sectors

The strong sectors are found either among the more traditional industries (glass, brewing, motor vehicles, textiles, rubber

goods, etc.) or concern Belgian products which enjoy a worldwide reputation (diamonds, beer, carpets, chocolate, etc.). In these latter sectors, the specialization found within Belgian industry compared with the EC zone is particularly high for historical reasons. The same is true for the motorvehicle sector which plays a key role in the Belgian economy (coverage ratio of 229 %, specialization index of 170, and 8,2% of industrial employment). In Belgium, this activity mainly involves the assembly of components supplied by parent companies or an associated enterprise located in another Member State. In 1988, a total of 472 400 motor vehicles were registered in Belgium against 1 230 000 units produced and assembled in the country. This favourable state of affairs could be maintained or further boosted with the creation of the internal market, provided Belgium retains this central position.

In general, the products manufactured by the strong sectors are already traded within the Community but this is restrained by standards (brewing, chocolate, basic industrial chemicals) or regulations (textiles, motor vehicles). However, in certain sectors associated with public procurement, such as energy-generating plant (large boilers), intra-Community trade remains low (intra-EC penetration rate of 22 % in 1987). In this latter sector, Belgium recorded a deficit in the early 1980s. This sector is therefore vulnerable to the opening up of public-procurement contracts, especially as we are seeing markets shrink with slower expansion of the nuclear power programme and a decrease in the accelerated replacement demand which was linked to the energy crisis.

We should also note that Belgian industry is in a strong position for activities which primarily concern mass consumer goods, that is, those which will be less affected by the lifting of non-tariff barriers, and those where the impact will be mainly through changes to distribution networks.

Table 4 also reveals that it is rare for good external performances to be associated with poor price competitiveness, i.e. where Belgian prices net of tax are above the Community average for the same products. The latter is true of just one sector: household textiles. Here, as in jewellery, the products exported tend to be of high quality where price is a less important consideration. On the other hand, in sectors such as glass, motor vehicles and certain textile industries where Belgium exports relatively more than its European partners (see SI in Table 3), very competitive pricing is observed.

Table 4

Price competitiveness in the sensitive sectors of Belgian industry

Dispersal of Belgian prices compared to the Community average

		Good (PI < 95)			Similar to EC average $(95 \le PI \le 105)$	Poor (Pl > 105)			
	NACE code	Sectors	PI	NACE code	Sectors	PI	NACE code	Sectors	PI
Weak sectors	248 322 327 494	Ceramic goods Mach. & oth. tools Other mach. & equip. Toys, sports goods	93 88 82 94	323 324 330 344 361 362 372	Textile machinery Mach. for food, chem. & rel. Office & data proc. equip. Telecommunications Shipbuilding Rolling stock Medico-surgical equipment	95 102 98 97 105 95 103	346 451 453 493	Domtype el. appl. Footwear Ready-made clothing Photog. & cinemat. labs	108 119 114 119
Balanced position	257	Pharmaceuticals	84				325 364	Plant for mines, etc. Aerospace equip.	137 112
Strong sectors	247 315 321 351 421 431 432 438	Glass, glassmaking Boilermaking Agricultural mach. Motor vehicles Chocolate, confect. Wool industry Cotton industry Carpets	93 86 94 84 93 92 92 92 94	341 345 347 427 428 481 491	Insulated wires & cables Radio, TV Lighting Brewing & malting Water, soft drinks Rubber products Jewellery	97 99 97 96 99 97 94	455	Household textiles	127

Source: Commission services

The majority of the strong sectors should benefit from European integration. These sectors possess certain advantages which enable them to stand up to increased competition from their European partners:

- more specialization of exports than for the Community as a whole (brewing, carpets, motor vehicles, bottled water, glass);
- (ii) very favourable trends in the intra-Community coverage ratio over the recent period (brewing, carpets);
- (iii) product prices below the Community average (glass, motor vehicles, textile products, chocolate).

Furthermore, as developed more fully under point 7, some of these sectors have adopted strategies in preparation for the single market:

- (a) mergers in the brewing and malting sector;
- (b) integration into international groups in the chocolate industry (takeover by Suchard of Côte d'Or);
- (c) rejuvenation of brand image (bottled water);
- (d) development of new technologies (cable manufacturing industry developing optical fibre connections) or new products (glass meeting specific specifications).

On the other hand, some sectors are less certain of benefiting from the completion of the single market. This is true in particular of several industries associated with public-procurement markets and which are at present protected (boilermaking).

3. The weak sectors and the sectors in a stable position

These sectors may be classified into two groups:

- protected sectors with a low or non-existent penetration of Community imports because non-tariff barriers protect Belgian firms from foreign competition (shipbuilding, rolling stock, electrical equipment);
- sectors already exposed to Community competition (machinery, household electrical appliances, clothing, footwear) and international competition (telecommunications, office and data-processing machinery, medical equipment).

3.1. Protected sectors

Industries which have hitherto been protected are obviously more vulnerable to the removal of non-tariff barriers. Thus, the opening up of public-procurement markets would have a profound effect on sectors such as shipbuilding, rolling stock or heavy electrical equipment. These sectors are at present for the most part subsidized, in Belgium as in the other Member States, and the national producers benefit from systems of aid. Investment aid granted to the Société nationale des chemins de fer belges and urban and local transport companies, for example, accounted for 11 % of total aid to Belgian firms in 1987.

In those industries where there is at present an under-utilization of production capacities and where the number of European producers is too high, the completion of the internal market is likely to lead to restructuring and the risk of less competitive producers being eliminated or absorbed into larger groups. It is in these sectors that the Belgian industries are very vulnerable. This vulnerability is not so much due to a poor price competitiveness—which is average for the Community—as to the small size of Belgian firms and the reduced efficiency which results. Belgian firms are generally smaller than their foreign competitors.

Furthermore, within this group of most vulnerable sectors, there are labour-intensive industries, such as the manufacture of rolling stock and electrical equipment. Thus if Belgian firms lost market shares in those industries there could be major social consequences.

The pharmaceutical products sector is in a rather different situation (2% of the industrial value added). This is a sector with a balanced trade position (100% of the coverage ratio) but where a part of imports is directly re-exported and is linked to a commercial activity. Another part is simply packaged prior to re-export. In this industry where there are favourable prospects for growth, Belgian prices are below the Community average, notably due to particularly strict price controls. However, according to the Economists Advisory Group (EAG)(see Bibliography (7)), profitability in this sector is above the Community average.

In the pharmaceutical industry there are very marked price differences between the Member States (33%). The extent of these price differences is such that they cannot be solely attributed to the diversity of price control systems but are also a consequence of the low level of competition between the national markets for many medicines. Also, in an integrated and competitive Community market, we could witness a convergence of prices towards an average level below current rates. In this respect, the Belgian pharmaceutical industry is better prepared to face this increased competition.

On the other hand, the smaller size of Belgian firms in this sector is again a handicap. In fact, only two Belgian companies (Solvay and UCB) rank among the top 30 European companies. Belgian industry essentially comprises the subsidiaries of American multinationals and more specialized small and medium-sized companies. These small firms which usually handle dosage, packaging and distribution on local markets are at greater risk, in the event of increased competition, of a relocation of marginal units in favour of concentration in a few Member States. Yet Belgium does possess certain locational advantages, including in particular the relative speed of registration procedures and the quality of research.

Finally, it is clear that in a sector such as pharmaceutical products, the effects of opening up markets will be felt very gradually. Opening up such a sector will have significant consequences for social security budgets and still requires the difficult harmonization of marketing procedures for new products.

3.2. Exposed sectors

Among the weak sectors already exposed to international competition we find industries which belong to the group of high-technology public-procurement markets, namely, office and data-processing machinery and telecommunications. In these sectors, which are experiencing rapid growth in demand (see Table 5), activities are insufficiently developed in Belgium—especially in data processing—and in many cases the Belgian market is dominated by foreign producers, such as IBM in data processing and Bell Telephone for the telephone exchange industry.

In telecommunications and office and data-processing machinery, Belgian prices are close to the Community average. But in these sectors keen competition or the presence of a dominant firm on the Community market (such as IBM in data processing) assures a convergence of prices between the Member States. Also, the Belgian subsidiaries of foreign multinationals are not at liberty to fix their prices and these multinationals are generally careful to ensure that price differences between European countries are not sufficient to encourage re-export.

In these activities, the internal market should heighten the current trend towards cooperation and mergers/takeovers between the major European producers, such as, for example, takeovers by companies such as Siemens, ICL and Olivetti in data processing or mergers in the telephone exchange industry. This trend should ultimately result in just a few major European groups within the Community. Belgium is not directly involved in this process as there are no purely Belgian manufacturers of this equipment. Thus, the

Table 5

Growth in Community demand in the sensitive sectors of Belgian industry (1980-87)

		Weak		Average		Strong			
	NAC	E Sectors	NACE	Sectors	NACE	Sectors			
Weak sectors	248 326 361 362	Ceramics Transmission equip. Shipbuilding Rolling stock	324 342 346 451 453 494	Mach. for food, chem. & rel. ind. Electric machines Domestic-type elect. appliances Footwear Ready-made cloth. Toys, sports goods	322 323 327 330 344 372 493	Mach. & other tools Textile machinery Other mach. & equipment Office & data processing mach. Telecommunications Medico-surgical equipment Photog. & cinematog. labs			
Balanced position			251 256 325	Basic industrial chemicals Other chemical products Plant for mines, etc.	257 364	Pharmaceuticals Aerospace equip.			
Strong sectors	421 438 481 491	Chocolate, confectionery Carpets Rubber products Jewellery	247 315 347 427 431 432 455	Glass, glassware Boilermaking Lighting Brewing, malting Wool industry Cotton industry Household textiles	341 345 428	Insulated wires, cables Radio, TV Water, soft drinks			

Source: Commission services.

impact of the completion of the internal market should depend on the strategies adopted by these major groups (location of their production units, R&D) and on whether or not Belgium promotes their insertion on the national territory by highlighting what it has to offer by way of a skilled workforce and R&D.

The fragile situation of Belgian industry in the electrical equipment sector (1,9 % of the value added and 64 % of the coverage ratio) and telecommunications sector (approximately 3,5% of the value added and 61% of the coverage ratio) remains a cause for concern. Yet, whereas we are gradually reaching saturation point on the electrical equipment market, the telecommunications sector is growing fast, with respect to both technology and markets. These sectors, where activity is associated with public procurement, will probably experience major restructuring following the opening up of these markets. The Belgian market, which does not boast any major national producers (Bell Telephone is not a Belgian but a European company), is not a priori in the best position to benefit from the effects of European integration. All will depend on the way the expected restructuring in these sectors is organized.

Finally, the Belgian aerospace industry (91 % coverage ratio and specialization index of 29) remains of marginal importance in Belgium. Its activity is dependent upon Belgian participation in development programmes for civil or military aircraft (Belairbus supplies small parts for Airbus for example). The future of civil aerospace construction in Belgium is therefore linked to the development of cooperation at European level in this field. The group of exposed sectors also includes the more traditional industries where the abolition of frontiers will stimulate intra-Community competition and accelerate specialization already under way. The result could be a change in the geographical distribution of these activities within the EC. In some of these sectors Belgian activity is already very limited (domestic-type electrical appliances, footwear, etc.) due to specialization on the European market. On the other hand, other sectors are of more importance within Belgian industry, such as the clothing and industrial machines sectors. These activities could eventually decrease if the performance of Belgium companies does not improve.

As regards the clothing sector, four-fifths of which is concentrated in Flanders and which is largely made up of small, family-scale businesses, an effort has been made to improve the competitive position of Belgian companies. Although the industry recorded a surplus in the early 1970s, it lost much of its competitive edge in the years 1974 to 1978. The problems faced by this sector were of two kinds: an inflated cost price and an inferior style and creativity compared with German, French and Italian competitors who were consequently able to gain an increasing share of the Belgian market. The implementation of the textile plan from 1982 onwards has led to a certain recovery in this sector, particularly by encouraging investment in modernization. There has also been a strong improvement in the brand image of Belgian clothing. Nevertheless, this sector, which still accounts for over 4 % of industrial employment, remains vulnerable, as shown by the slightly downward movement in its intra-Community coverage ratio and its poor price competitiveness (PI = 114).

In this respect, it should be noted that in just three other weak sectors is the price factor a reason for bad external performances. Activities in the three sectors in question are all of minor importance in Belgium: household electrical appliances, footwear and photographic and cinematographic laboratories. On the other hand, among the strong sectors, prices of Belgian products are almost always below the Community average. This leads to one conclusion: good price competitiveness is a necessary condition for a good external performance but is not in itself sufficient.¹ It should be pointed out here that the comparison of prices between the Member States is a delicate matter² and it is therefore preferable to use this information as a general guide only.

Among the 16 strong sectors, just one sector, household textiles, shows poor price competitiveness. But among the strong sectors there is favorable price competitiveness in four sectors and price competitiveness in line with the Community average in six sectors. Thus, in those sectors selling consumer products destined for households (toys) and among industries manufacturing industrial machines, the weakness of external performances seems to be largely due to a bad brand image of Belgian products abroad.

4. Performances on extra-Community markets

Table 6 shows those sectors where there is a clear difference between performances on Community markets and on extra-Community markets. Thus, in many of the sectors classified

Belgian prices are compared here with the Community average. If Belgian prices are equal to the Community average, this is no guarantee that Belgium does not possess an advantage or a disadvantage in terms of prices compared with certain of its partners.

² The price data used here were collected by the Statistical Office of the European Communities in order to calculate purchasing power parities. These products are identical in all Member States (for example, several varieties of packaging are taken into account for a drink such as Coca-Cola) in so far as possible. The price data supplied by the SOEC are retail prices—from which VAT and excise duties have been deducted—but not ex-works prices, which limits their pertinence as an indicator of competitiveness.

as weak sectors, performances on extra-Community markets are clearly better than on the European market. This is true for the majority of mechanical engineering industries and for those sectors associated with public procurement, such as electrical equipment, shipbuilding, telecommunications and rolling stock. In these sectors, trade is often oriented towards the developing and OPEC countries. In many of these industries, extra-EC exports remain below intra-EC exports and the extra-EC coverage ratio has fallen during the 1980s. Consequently, although the extra-Community performance of these sectors helps to improve their trade balance, it is not an indicator of structural strength.

On the other hand, some sectors classified as strong sectors perform less well on external markets than on the European market. This phenomenon is observed in certain textile industries (wool industry and household textiles), and in the

motor vehicle, lighting and consumer electronics industries, where, however, the trend in the extra-EC coverage ratio is generally favourable. In these already strongly internationalized sectors, Japan and the newly-industrialized countries are world leaders. This competition is, however, less pronounced on the Community market in so far as several Member States quantitatively limit the access of extra-Community suppliers to their market (application of Article 115 and voluntary export restrictions). In the wool industry and household textile industry the impact of 1992 will therefore largely depend upon the external trade policy conducted with respect to third countries. On the other hand, in the motor vehicle and consumer electronics sectors, the number of foreign multinationals present in Belgium is very high as they account for 99 % of the turnover of the motor vehicle industry and 88 % of the turnover in consumer electronics (see Bibliography (20)) and the Belgian market is already open to the penetration of products from third countries.

Table 6

Sectors with differing performances on Community markets and extra-Community markets

NACE code	Sectors with better performance in EC markets		Sectors with better performance in EC markets		Sectors with better performance in extra-EC markets			
	Sectors	Intra CR	Extra CR		Sectors	Intra CR	Extra CR	
345	Electronic equipment, radio, TV	122	95	251	Basic industrial chemicals	96	161	
347	Lighting	110	79	256	Other chemical products	106	199	
351	Motor vehicles	229	104	257	Pharmaceuticals	100	200	
431	Wool industry	121	61	323	Textile machinery	57	315	
455	Household textiles	203	90	324	Machines for food and chemical			
					industry	58	215	
				325	Plant for mines, etc.	107	429	
				326	Transmission equipment	52	117	
				342	Electrical equipment	64	115	
				344	Telecommunications	61	126	
				361	Shipbuilding	80	143	
				362	Rolling stock	30	210	
				491	Jewellery	46	150	
	а. — — — — — — — — — — — — — — — — — — —			493	Photographic and cinematographic laboratories	78	110	

Source : Commission services.

5. Composite indicator of static competitiveness

In order to provide a more comprehensive assessment of the competitive position of Belgian industries, a composite indicator of competitiveness was compiled incorporating performances measured by the intra- and extra-EC coverage ratios, an export specialization index and a production specialization index. A global score ranging from -4 to +4 was then attributed to each sector on the basis of this indicator. The higher this global score, the stronger Belgium's competitive position in the given sector.

The results obtained on the basis of this composite indicator may be read from Graph 1 which also sets out the share of each sector in Belgian industrial employment.¹ In the majority of cases, this indicator confirms the conclusions drawn on the performances on the Community market.

Also, all the weak sectors of Table 3 are awarded a negative score, except for the three sectors with a zero score, namely

telecommunications, shipbuilding and rolling stock. In these three sectors, the good performances recorded on extra-EC markets and a production specialization above the Community average compensate for the poor performances on the Community market. Nevertheless, the verdict on the great vulnerability of the rolling stock industry remains applicable for two reasons: on the one hand, trade is low on this protected market, and on the other, as we will see in the next section, the external performances of this industry are deteriorating, on both intra- and extra-Community markets.

Similarly, among the strong sectors, we find three sectors without a positive score. These are the boilermaking, radio and television, and lighting industries. In the case of boilermaking, this result confirms the reservations already mentioned under point 2. In the lighting and consumer electronics industries, the poorer performances on extra-EC markets reduces the global score.

Finally, Graph 1 confirms the overall positive outcome which can be drawn up for the performance of Belgian industries in the sensitive sectors. The sectors which have a global score above or equal to 3 account for 15% of industrial employment compared with 7 % for those with a score below or equal to -3.



¹ A table giving the value of the four indicators of external performances and the overall composite score is provided in Appendix 1.

6. Combination of the indicators of static and historical competitiveness

By examining the intra-EC coverage ratio for Belgian industries and its development during the 1980s, it is possible to assess the structural development of the Belgian economy and to complete the analysis of the effects of 1992. Thus, the weak sectors with a falling or virtually stable coverage ratio are those sectors which are likely to experience a reduced level of activities in Belgium. In fact, the completion of the internal market is likely to speed up the process of despecialization in these sectors of low competitiveness, unless steps are taken to limit such a process. This is true of 12 of the 17 weak sectors and particularly of industries associated with traditional public procurement (rolling stock, electrical equipment) and high technology (data processing, telecommunications, medical and surgical equipment) markets. Performances on the Community market have clearly deteriorated in the case of two weak sectors: rolling stock where the EC coverage ratio tumbled 24 points during the 1980s, falling by 30 % in the years 1985-87, and telecommunications where it is down by eight points. But while performances on extra-EC markets are also down for rolling stock, this is not so for telecommunications where the extra-EC coverage ratio is up by 12 points.

Four weak sectors experienced an increase in the intra-EC coverage ratio: machine and other tools, textile machines, household electrical appliances and toys and sports goods. But in the two machine-construction industries, the extra-EC coverage ratio has clearly fallen, from 59 points for machine and other tools and 97 points for textile machinery where it remains, however, clearly above unity. This is also the only industry of the four where production specialization (SI PROD = 106) in Belgium is above the Community average.

Table 7

Combination of indicators of static and dynamic competitiveness

	Weak sectors			Balanced position	Strong sectors			
	NACE code	Sectors	NACE code	Sectors	NACE code	Sectors		
intra $\frac{X}{M} < -5\%$	344 362 372	Telecommunications Rolling stock Medico-surgical equipment	256 364	Other chemical products for industry and agriculture Aerospace equipment	253 321 345 491	Other basic industrial chemicals Agricultural machines Radio, TV Jewellery		
$-5\% \le \blacktriangle$ intra $X \le +5\%$ \overline{M}	248 324 326 327 330 342 451 453 493	Ceramic goods Machines for food, chemical and re- lated industries Transmission equipment Other machines and equipment Office and data-processing equipment Electrical equipment Footwear Ready-made clothing Photographic and cinematographic laboratories	252 257	Petrochemicals and carbochemicals Pharmaceuticals	347 351	Lighting Motor vehicles		
$\frac{X}{M} > + 5\%$	322 323 346 361 494	Machine and other tools Textile machinery Domestic-type electrical appliances Shipbuilding Toys, sports goods	325 361	Plant for mines, etc. Shipbuilding	247 315 341 421 427 428 431 432 438 455 481	Glass, glassmaking Boilermaking Insulated wires and cables Chocolate, confectionery Brewing, malting Water, soft drinks Wool industry Cotton industry Carpets Household textiles Rubber products		

Source : Commission services

On the other hand, the strong sectors where Belgian industries are characterized by a strong specialization on exports and where the intra-EC coverage ratio has improved are, a priori, sectors which should win market shares both inside and outside Europe, thanks to reduced costs through economies of scale and a better internal organization of firms. This is the case for glass and glassware, motor vehicles, certain textile industries and certain branches of the foodprocessing industry (brewing, water, chocolate).

The impact of the completion of the internal market is less evident for the boilermaking and insulated wires and cables sectors which are protected by limited access to publicprocurement markets in Europe and where performances on extra-EC markets have clearly fallen during the 1980s. Also, it is more risky to state what will be the effects of 1992 on the four strong sectors which have experienced a falling intra-EC coverage ratio in the 1980s. However, in the jewellery industry, the crucial markets are the extra-EC markets where the coverage ratio has been improving.

7. Dynamic adjustments

In order to obtain a more forward-looking view of the impact of 1992 on the Belgian economy, it is appropriate to supplement the sectoral analysis by describing, on the one hand, the expectations of Belgian firms as to the effects of 1992 on their sales, investment, employment and productivity levels, and, on the other hand, the strategic reactions which they are implementing. To this end, we will refer principally to the results of a survey conducted among 3 000 companies¹ during the first three months of 1989 by the Federation of Belgian Enterprises (FEB) in cooperation with the National Bank of Belgium. Some of the strategies recently pursued by Belgian firms will also be described. These strategies obviously have 1992 in view, but they may also take account of other types of consideration peculiar to the enterprises concerned.

Other information is also useful when considering these dynamic adjustments, particularly the analysis of merger and takeover operations on the part of Belgian companies. This provides a picture of the external strategies implemented.

7.1. The effect of 1992 on sales, investments, employment and productivity— Results of the Belgian survey

In industry, Belgian firms expect to see an increase in the volume of their sales. But this increase would be mainly achieved in the other EC countries, which is in accordance with the results obtained for the other countries.

In the run up to 1992, the difference between the companies expecting an increase in their sales and those expecting a fall amounts to 5% where sales in Belgium are concerned and 43% for the sales in other EC countries. In fact, the chemical industry is alone in envisaging, on balance, an increase in sales on the Belgian market. On the other hand, in the textile and clothing industry, identified as vulnerable in the preceding section, a majority of companies (net balance of 17%) expect a reduction in Belgian sales.

After 1992, we witness a clear increase in positive replies compared to the preceding period, both on the Belgian market (17%) and the Community market (61%). On the extra-EC markets, it is mainly the large companies which expect an increase in sales (44%). The textile industry is still more pessimistic than the other sectors since a slight majority (net balance 2%) of the companies in this sector continue to predict a fall in sales on the Belgian market. This fall could, however, be offset by an increase in the intra-EC and even extra-EC penetration rate as 73% and 67% respectively of companies expect to see these movements.

Contrary to that observed for the Community on average (see Bibliography (5)), increased competition on the Belgian market will apparently be felt rapidly (before 1992) before falling off. On the other hand, as in the other Member States, the penetration of other Community markets by Belgian industries should increase in line with the implementation of the White Paper, leading to an increased interdependency of European economies.

Belgian companies also expect 1992 to prove positive for their investment plans (32%) and this effect should also become more marked in the period 1993-96 (43%). A difference should, however, be made between the SMEs which expect to increase investments inside Belgium and the major companies (workforce of 500+) which expect to invest mainly in other EC countries. This is also true of the chemical industry which differs from the other sectors in this respect.

Prospects as regards levels of employment are less favourable than for sales and investments, but the trend remains positive: the net balance of companies expecting an increase in employment is 13 % compared with 35 % for sales and

¹ Of the 3 000 enterprises, 1 022 replied and a little over half of them are in the industrial sector. Only those results concerning the industrial sector are given here.

Table 8

Effect of 1992 on the levels of sales, investment, employment and productivity of Belgian industrial companies in the run up to 1992

										weighted balanc	e of replies) ¹		
		Breakdown according to size						Breakdown according to branch					
	'Corrected' total ²	Total	Less than 50	From 50 to 100	From 101 to 500	Over 500	Metal manf.	Chemicals and act.	Non-metal miner.	Textiles and clothing	Other		
Sales volume in:													
Belgium Other EC countries Non-EC countries Total	+ 5 + 43 + 13 + 35	-1 + 40 + 14 + 29	+ 16 + 53 + 13 + 47	+8 + 40 + 22 + 45	+7 + 42 + 10 + 36	-6 + 38 + 14 + 22	-3 + 37 + 14 + 24	+ 24 + 47 + 25 + 42	-23 + 45 - 2 + 25	-17 + 38 + 7 + 38	+4 +44 +10 +34		
Investment volume in:													
Belgium Other EC countries Non-EC countries Total	+ 33 + 22 + 4 + 32	+ 25 + 21 + 6 + 29	+ 49 + 25 + 2 + 39	+40 + 16 + 6 + 35	+ 35 + 22 + 2 + 32	+ 18 + 22 + 8 + 27	+20 +20 +3 +22	+ 24 + 38 + 19 + 28	+ 56 + 26 - 1 + 60	+ 37 + 17 + 31 + 50	+28 + 16 0 + 37		
Employment level in:													
Belgium Other EC countries Non-EC countries Total	+10 +11 +2 +13	-1 + 8 + 3 + 4	+31 + 15 0 + 27	+ 24 + 13 + 1 + 25	+15 +19 +4 +18	-14 + 1 + 3 - 5		-3 + 30 + 18 + 27	+15 +21 -2 +35	+ 24 + 20 + 35 + 20	+13 +10 -1 +18		
Productivity													
(output per person employed)	+47	+ 50	+45	+43	+ 42	+ 54	+ 48	+ 38	+61	+ 58	+ 58		

¹ These balances were obtained by calculating the difference between the percentages of positive and negative responses, weighted by the employment at the place of business. ² As the share of industry in terms of employment in the sample does not correspond totally to its real share (as apparent from ONSS statistics), a corrected average was calculated taking account of the real share of industry.

Source: FEB survey.

32 % for investments. This growth in employment should be experienced both in Belgium and in other EC countries while in many Member States the industrial companies expect to increase employment mainly in their subsidiaries located in other EC countries.

More companies expect a favourable development of employment after 1992 (29 %) than before 1992 (13 %). This phenomenon is most notable in the large companies and in the metal-manufacturing sector where, prior to 1992, there is even expected to be a fall in employment.

It is also among the major companies and in the metalmanufacturing industry that there is the strongest belief in increased productivity in the medium term. This is in line with the logic of the internal market which, initially, should bring about a restructuring of production in order to eliminate internal inefficiencies in the organization of companies. This improvement in competitiveness will subsequently serve to stimulate both sales and employment.

7.2. Strategic reactions of Belgian industrial companies

Above all, it must be stressed that, in several sectors, companies present on the Belgian market are subsidiaries of foreign multinationals. Thus, of the country's 50 largest industrial companies, 26 are subsidiaries of major international groups, nine fall under the sheltered sector category and could be classed as subsidiaries of international groups and just 15 are national companies (see Bibliography (10)). In these activities where the centres of decision-making lie outside the country, Belgium must continue to offer an environment which is favourable to major groups, by virtue

Table 9

Effect of 1992 on the levels of sales, investment, employment and productivity of Belgian industrial companies in the period 1993-96

Breakdown according to branch Breakdown according to size From 101 Over 500 Chemicals Textiles Other 'Corrected' Total Less From 50 Metal Non-metal total than 50 to 100 to 500 manf. and act. miner. and clothing Sales volume in: +18+6+23+22+1- 2 Belgium +17+27+11+22+14+59+55+41+54+73Other EC countries +61+63+61+66+66+69+67+22+38+12+31Non-EC countries +25+34+17+10+44+17+54+49+57+33+51Total +53+51+53+57+61+61Investment volume in: Belgium +39+38+49+41+28+40+54+33+22+48-6 +22Other EC countries +22+41+15+19+29+35+19+20+44+31Non-EC countries +18+29+4+6+5+42+38+11+1+31+6+35+43+46+39+36+51+49+31+51Total +43+45Employment level in: +9Belgium +17+10+36+27+7+21+15-15+23-19Other EC countries +18+20+19+9+15+22+21+17+21+7+16Non-EC countries +22+2+35+35+120 -2+30+60 -2+19+28Total +29+33+28+31+39+39+21+12+29Productivity (output per person employed) +58+66+52+50+45+77+71+43+68+67+66

¹ These balances were obtained by calculating the difference between the percentages of positive and negative responses, weighted by the employment at the place of business.
² As the share of industry in terms of employment in the sample does not correspond totally to its real share (as apparent from ONSS statistics), a corrected average was calculated taking account of the real share of industry.

Source: FEB survey

of the development of its infrastructures, the skills of its workforce and a factor cost structure which is not too unfavourable.

(a) External strategies

Between March 1988 and March 1989 Belgian companies made purchases of foreign companies to the value of USD 2 million, but this represents just 1,3 % of the total value of transactions realized in the Community countries. As a purchasing country, Belgium therefore plays a minor role, ranking far behind The Netherlands (USD 2,3 billion) for example. This is due to the small number of large Belgian companies (multinationals) relative to those found in The Netherlands. It is precisely these multinationals which are interested in takeover and merger operations.

This does not prevent Belgian companies from being active in a certain number of sectors. Thus, in a strong point such as chemicals, Belgian companies purchase other European companies or set up joint companies with them. The UCB group, for example, has set up a joint company with a British firm. The same applies in the carpets sector where companies such as Louis De Poortere and CarpetLand have purchased French companies.

(weighted balance of replies)¹

In other sectors where activities are on a large scale, Belgian companies suffer from a handicap linked to their smaller size compared with their European partners. This applies to protected sectors and those associated with public-procurement markets. For this kind of activity, the small-scale Belgian companies are subject to takeovers. This is the case in the rolling-stock sector, for example, where the rollingstock activities of the ACEC were purchased by Alsthom which, together with ABB, is one of the European leaders on this market. The same applies in the insulated wires and cables sector with the sale of Câbleries de Dour to Fabricable, the French holding company. The takeovers allow these Belgian companies to be incorporated into Europeanwide groups and resistance would therefore be a bad thing. However, although Belgium is certainly more a target than a purchasing country, the importance of this phenomenon should not be overestimated. Thus, the value of acquisitions on the part of Belgian companies between March 1988 and March 1989 accounts for just 0,8 % of the total value of purchases within the EC, compared with 10,5 % for The Netherlands. Also, of the 940 transactions recorded in the EC during this period, 47 were in Belgium compared with 90 in The Netherlands (see Bibliography (14)).

As regards the form these regroupings take, mergers and majority shareholdings are clearly preferred to minority shareholdings and the founding of joint subsidiaries, especially where large companies are concerned. The survey among companies shows that this preference for mergers/ majority shareholdings is much more evident among companies in Belgium than in other Member States, especially as regards international operations. This could be due to the smaller size of Belgian companies. In this way, Belgian companies would be looking to mergers/takeovers as a means of attaining the necessary size to benefit from a large internal market.

This is true, for example, of the brewing and malting sector where we have witnessed the merging of Artois and Piedboeuf and of Alken and Maes. The same need to acquire a European dimension also explains the takeover of Côte d'Or by Suchard. Côte d'Or can now use the distribution networks of this giant of the chocolate industry to sell its products throughout the Member States.

Finally, in the flagging electronics sector, dynamic companies can develop promising external strategies. In this respect, we can cite the example of Barco, born from the union of Barco Industries and Barco Electronic. Only recently merged, this group has just recently taken over the Disc company, a high-technology firm, in order to strengthen its position as leader in video and industrial graphics.

(b) Internal strategies

For Belgian industries, the impact of 1992 on the components in the value-added chain is most marked as regards the adaptation of products and restructuring of production operations. 71 % and 68 % respectively of the Belgian companies interviewed consider that the internal market will have an effect in these fields. But the effect of 1992 on decisions in the areas of distribution and R&D is also very evident (58 % and 54 %). As regards production strategies, the FEB survey shows that 42 % of Belgian industrial companies expect to increase their activities abroad both through setting up new production units and expanding existing units. For example, Tessenderlo Chemie has expanded its activities in southern Europe and has bolstered its 'fine chemicals' division by acquiring the Italian company Farchemia which produces material for the pharmaceutical industry.

The foreign multinational companies with a strong presence in Belgium are also in the process of reviewing certain strategies.

Thus, in certain strong sectors, Belgium has benefited from the trend towards an increased concentration of production. It is in Genk that Ford is going to concentrate production of the Sierra after having transferred production from the British factory in Dagenham. On the other hand, in the electronics sector, Belgium has suffered as a result of restructuring at the European level. Thus, Philips has closed its Louvain factory after deciding to reduce the number of production units in Europe. But this too is in line with the logic of 1992. In effect, no Member State may expect to obtain for itself a comparative advantage for the full range of sensitive sectors, each country rather seeking to specialize in those activities where it is most competitive.

Conclusions

This study presents, firstly, the competitive position of Belgian industries in the sectors most concerned by 1992. Taken overall, the situation of Belgian industry in these sectors tends to be favourable as the share of strong sectors is greater than that of the weak sectors. This positive conclusion must be qualified by the fact that the weak sectors account for 17% of industrial employment and concern certain activities with a high concentration of labour, such as clothing.

Furthermore, it is to be regretted that the strong sectors are essentially situated in the traditional sectors and that, on the other hand, Belgian external performances are mediocre in the growth sectors such as data processing and telecommunications. It is, moreover, in these latter sectors that the internal market should favour the emergence of European firms. It is therefore important for Belgium to highlight its advantages—central location in Europe, quality of workforce and research, highly developed infrastructure—in order to encourage these firms to set up production units on its territory.

Among the most vulnerable sectors, one finds essentially those sectors associated with public procurement such as rolling stock or electrical equipment. In these hitherto protected sectors Belgian companies are often of insufficient size to see off foreign competition. Consequently, restructuring is under way and Belgian firms are often the subject of takeovers which allow them to be incorporated into European firms.

On the other hand, in the industries where Belgian firms record good external performances, intra-Community trade is impeded by standards (brewing, chocolate, basic industrial chemicals) or regulations (motor vehicles, textiles). These sectors should therefore benefit from European integration, all the more so as they have often already adopted strategies in readiness for the event, such as mergers, insertion into multinational firms, cooperation with European partners, development of new technologies, etc. The examination of these strategic reactions therefore seems to show that Belgian firms have resolved to seize the opportunities created by the internal market.
Annex 1

Indicators of static competitiveness in the sensitive sectors identified at a national level

Group 1 330 Office and data-processing equipment 62 31 48 16 -1 $+1$ -1 $+1$ -1 $+1$ -1 $+1$ -1 $+1$ <	NACE code	Sectors	Intra $\frac{X}{M}$	Intra SI	Extra X M	1985 SI Prod.	$\frac{1}{M}$	Intra SI	Extra X M	SI Prod.	Global score
330 Office and data-processing equipment 62 31 48 16 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 +1 <th< td=""><td>Group 1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Group 1										
344 Telecommunications Construct of the structure of the struct	330	Office and data-processing equipment	62	31	48	16	-1	-1	-1	-1	-4
372 Medico-surgical equipment 70 62 62 16 -1 -1 -1 -1 -1 Group 2 257 Pharmaceuticals 100 95 200 95 0 0 +1 0 + 315 Bolikmaking 111 86 445 33 +1 -1 +1 -1 +1 -1 +1 <	344	Telecommunications	61	36	126	112	- 1	- 1	+1	+1	0
Group 2 257 Pharmaceuticals 100 95 200 95 0 0 +1 0 + 315 Boilermaking 111 86 445 33 +1 -1 +1 -1 320 Rolling stock 30 23 210 408 -1 -1 +1 +1 +1 427 Brewing, malting 323 178 2135 128 +1	372	Medico-surgical equipment	70	62	62	16	- 1	-1	-1	- 1	-4
257Pharmaceuticals100952009500+10+1315Boilermaking1118644533+1-1+1-1+1320Rolling stock3023210408-1-1+1+1+1+1427Brewing, malting3231782135128+1 <td>Group 2</td> <td></td>	Group 2										
315 Boilermaking 111 86 445 33 +1 -1 +1 -1 302 Roling stock 30 23 210 408 -1 -1 +1	257	Pharmaceuticals	100	95	200	95	0	0	+1	0	+1
362 Rolling stock 30 23 210 408 -1 -1 $+1$	315	Boilermaking	111	86	445	33	+1	-1	+1	-1	0
427 Brewing, malting 323 178 2135 128 $+1$ </td <td>362</td> <td>Rolling stock</td> <td>30</td> <td>23</td> <td>210</td> <td>408</td> <td>-1</td> <td>-1</td> <td>+1</td> <td>+1</td> <td>0</td>	362	Rolling stock	30	23	210	408	-1	-1	+1	+1	0
428 Water, soft drinks 119 217 1 552 126 +1	427	Brewing, malting	323	178	2 1 3 5	128	+1	+1	+1	+1	+4
Group 3 341 Insulated wires and cables 123 96 148 178 +1 0 +1 +1 + 342 Electrical machinery 64 46 115 56 -1 -1 +1 -1 - 361 Shipbuilding 80 17 143 112 -1 -1 +1 +1 -1 +1 </td <td>428</td> <td>Water, soft drinks</td> <td>119</td> <td>217</td> <td>1 552</td> <td>126</td> <td>+1</td> <td>+ 1</td> <td>+1</td> <td>+ 1</td> <td>+4</td>	428	Water, soft drinks	119	217	1 552	126	+1	+ 1	+1	+ 1	+4
341 Insulated wires and cables 123 96 148 178 +1 0 +1 +1 +1 342 Electrical machinery 64 46 115 56 -1 -1 +1 -1 -1 361 Shipbuilding 80 17 143 112 -1 -1 +1 +1 +1 421 Chocolate, confectionery 130 111 397 111 +1 <t< td=""><td>Group 3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Group 3										
342 Electrical machinery 64 46 115 56 -1 -1 $+1$ -1 -1 361 Shipbuilding 80 17 143 112 -1 -1 $+1$ $+1$ 361 Shipbuilding 80 17 143 112 -1 -1 $+1$ $+1$ 361 Shipbuilding 130 111 397 111 $+1$ $+1$ $+1$ $+1$ 41 Group 4 Caramic goods 54 53 77 33 -1	341	Insulated wires and cables	123	96	148	178	+1	0	+1	+1	+ 3
361 Shipbuilding 80 17 143 112 -1 -1 $+1$ $+1$ 421 Chocolate, confectionery 130 111 397 111 $+1$ <th< td=""><td>342</td><td>Electrical machinery</td><td>64</td><td>46</td><td>115</td><td>56</td><td>-1</td><td>-1</td><td>+1</td><td>-1</td><td>- 2</td></th<>	342	Electrical machinery	64	46	115	56	-1	-1	+1	-1	- 2
421 Chocolate, confectionery 130 111 397 111 +1	361	Shipbuilding	80	17	143	112	-1	-1	+1	+1	0
Group 4 247 Glass, glassware 248 172 277 152 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +1 +248 Ceramic goods 54 53 77 33 -1	421	Chocolate, confectionery	130	111	397	111	+1	+1	+1	+1	+4
247Glass, glassware248172277152+1<	Group 4										
248Ceramic goods54537733 -1	247	Glass, glassware	248	172	277	152	+1	+1	+1	+1	+4
251Basic industrial chemicals969816113100+1+1+256Other chemical products for industry and agriculture1069819943500+1+1+211Agricultural machinery1397437399+1-1+10+321Machines and other tools85687866-1-1-1-10-323Machines tor food and chemical industry5751315107-1-1+10-324Machines for food and chemical industry584721535-1-1+1-1-325Plan for mines, etc.107914297200+1+1+326Transmission equipment35248822-1-1+1-1-327Other machines and equipment35248822-1-1-1-1-346Domestic-type electrical appliances27194718-1-1-1+1+1351Motor vehicles229170104191+1+10+1+1+4351Motor vehicles229170104191+1+1-10+1+1364Aerospace equipment91292923800	248	Ceramic goods	54	53	77	33	-1	- 1	- 1	-1	-4
256Other chemical products for industry and agriculture106981994350+ 1+ 1321Agricultural machinery1397437399+1-1+10+1322Machines and other tools85687866-1-1-1-1-1323Machines textile industry5751315107-1-1+10-1324Machines for food and chemicalindustry584721535-1-1+1-1-1325Plan for mines, etc.107914297200+1-1-1326Transmission equipment35248822-1-1-1-1-3326Domestic-type electrical appliances27194718-1-1-1-1327Lighting110987923800-1+1+1+1346Domestic-type electrical appliances27194718-1-1-1-1-1347Lighting110987923800-1+1+1+1+4346Aerospace equipment912958-00-1-1-1-1-1-1-1-1-1	251	Basic industrial chemicals	96	98	161	131	0	0	+1	+1	+2
and agriculture1069819943500+1+1+321Agricultural machinery1397437399+1-1+10+322Machines and other tools85687866-1-1-1-1-1-323Machines textile industry5751315107-1-1+10-324Machines for food and chemical	256	Other chemical products for industry									
321Agricultural machinery1397437399+1-1+10+322Machines and other tools85687866-1-1-1-1-323Machines textile industry5751315107-1-1+10-324Machines for food and chemicalindustry584721535-1-1+1-1-325Plan for mines, etc.107914297200+1-1-326Transmission equipment35248822-1-1-1-1-346Domestic-type electrical appliances27194718-1-1-1-347Lighting110987923800-1+1+1344Aerospace equipment912958-0-1-1-347Lighting110987923800-1+1+1344Aerospace equipment912958-0-1-1-1+4345Cotton industry15210018488+10+1+1+4438Carpets5903461510431+1+1+1+4451Footwear15131313-1-1-1-1 <td< td=""><td></td><td>and agriculture</td><td>106</td><td>98</td><td>199</td><td>435</td><td>0</td><td>0</td><td>+1</td><td>+1</td><td>+2</td></td<>		and agriculture	106	98	199	435	0	0	+1	+1	+2
322Machines and other tools85687866 -1 -1 -1 -1 -1 -1 323Machines textile industry5751315 107 -1 -1 $+1$ 0 $-$ 324Machines for food and chemicalindustry584721535 -1 -1 $+1$ 0 $-$ 325Plan for mines, etc. 107 9142972 0 0 $+1$ -1 -1 326Transmission equipment5236 117 45 -1 -1 -1 -1 -1 326Transmission equipment35248822 -1 -1 -1 -1 -1 327Other machines and equipment35248822 -1 -1 -1 -1 -1 327Other machines and equipment35248822 -1 -1 -1 -1 -1 346Domestic-type electrical appliances27194718 -1 -1 -1 -1 -1 351Motor vehicles229170104191 $+1$ $+1$ 0 $+1$ $+1$ 354Aerospace equipment912958 $ 0$ -1 -1 -1 $+1$ 364Aerospace equipment912958 $ 0$ -1 -1 $+1$ $+1$ $+1$ $+1$ $+1$ $+1$	321	Agricultural machinery	139	74	373	99	+1	-1	+1	0	+1
323 Machines textile industry 57 51 315 107 -1 -1 $+1$ 0 $-$ 324 Machines for food and chemical industry 58 47 215 35 -1 -1 $+1$ -1 -1 325 Plan for mines, etc. 107 91 429 72 0 0 $+1$ -1 -1 326 Transmission equipment 35 24 88 22 -1 <td>322</td> <td>Machines and other tools</td> <td>85</td> <td>68</td> <td>78</td> <td>66</td> <td>-1</td> <td>-1</td> <td>-1</td> <td>-1</td> <td>-4</td>	322	Machines and other tools	85	68	78	66	-1	-1	-1	-1	-4
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industry584721535 -1 -1 $+1$ -1 -1 325Plan for mines, etc.107914297200 $+1$ -1 326Transmission equipment523611745 -1 -1 $+1$ -1 327Other machines and equipment35248822 -1 -1 -1 -1 -1 345Radio, TV122959562 $+1$ 0 0 -1 346Domestic-type electrical appliances27194718 -1 -1 -1 -1 351Motor vehicles229170104191 $+1$ $+1$ 0 $+1$ $+1$ 364Aerospace equipment912958 $ 0$ -1 -1 -1 364Aerospace equipment912958 $ 0$ -1 -1 -1 374Wool industry12113261101 $+1$ $+1$ -1 $+1$ 384Carpets5903461510431 $+1$ $+1$ $+1$ $+1$ 438Carpets5903461510431 $+1$ $+1$ $+1$ $+1$ 451Footwear151313 13 -1 -1 -1 -1 455Household textiles2032059088 $+1$ $+1$ -1 $+1$ $+1$ <	324	Machines for food and chemical									
325Plan for mines, etc.107914297200+1-1326Transmission equipment523611745-1-1+1-1-327Other machines and equipment35248822-1-1-1-1345Radio, TV122959562+100-1346Domestic-type electrical appliances27194718-1-1-1347Lighting110987923800-1+1+1351Motor vehicles229170104191+1+10+1+1+364Aerospace equipment9129580-1-1431Wool industry12113261101+1+1-10+1432Cotton industry15210018488+10+1-1+433Carpets5903461510431+1+1+1+1+451Footwear151313-1-1-1-1-1-455Household textiles2032059088+1+10-1+481Rubber products1299022649 <td></td> <td>industry</td> <td>58</td> <td>47</td> <td>215</td> <td>35</td> <td>- 1</td> <td>- 1</td> <td>+1</td> <td>-1</td> <td>- 2</td>		industry	58	47	215	35	- 1	- 1	+1	-1	- 2
326Transmission equipment523611745 -1	325	Plan for mines, etc.	107	91	429	72	0	0	+ 1	- 1	0
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345Radio, TV122959562+100-1346Domestic-type electrical appliances27194718-1-1-1-1-1-1347Lighting110987923800-1+1+1351Motor vehicles229170104191+1+10+1+1364Aerospace equipment9129580-1-1431Wool industry12113261101+1+1-10+1432Cotton industry15210018488+10+1-1+438Carpets5903461510431+1+1+1+1+1+451Footwear15131313-1-1-1-1-453Ready-made clothing76874577-1-1-1-1+451Rubber products1299022649+10+1-1+481Rubber products1299022649+10+1-1+491Jewellery46226150246-1+1+1+1+1+494Photographic and cinematographic72693534-1-1-1-1 <td>327</td> <td>Other machines and equipment</td> <td>35</td> <td>24</td> <td>88</td> <td>22</td> <td>- 1</td> <td>- 1</td> <td>- 1</td> <td>- I</td> <td>-4</td>	327	Other machines and equipment	35	24	88	22	- 1	- 1	- 1	- I	-4
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347Lighting110987923800 -1 $+1$ $+1$ 351 Motor vehicles 229 170 104 191 $+1$ $+1$ 0 $+1$ $+1$ 364 Aerospace equipment 91 29 58 $ 0$ -1 -1 $ 431$ Wool industry 121 132 61 101 $+1$ $+1$ -1 0 $+$ 432 Cotton industry 152 100 184 88 $+1$ 0 $+1$ -1 $+$ 438 Carpets 590 346 1510 431 $+1$ $+1$ $+1$ $+1$ $+1$ 451 Footwear 15 13 13 -1 -1 -1 -1 -1 453 Ready-made clothing 76 87 45 77 -1 -1 -1 -1 455 Household textiles 203 205 90 88 $+1$ $+1$ 0 $+1$ -1 491 Jewellery 46 226 150 246 -1 $+1$ $+1$ $+1$ $+1$ $+1$ 493 Photographic and cinematographic -1 0 $+1$ -1 </td <td>346</td> <td>Domestic-type electrical appliances</td> <td>27</td> <td>19</td> <td>4/</td> <td>18</td> <td>-1</td> <td>-1</td> <td>- 1</td> <td>- 1</td> <td>-4</td>	346	Domestic-type electrical appliances	27	19	4/	18	-1	-1	- 1	- 1	-4
351Motor vences 229 170 104 191 $+1$ $+1$ -1 0 $+1$	347	Lighting	110	98	104	238	0	0	-1	+ 1	+ 3
364Aerospace equipment9129380-1-1-1-1431Wool industry12113261101+1+1-10+432Cotton industry15210018488+10+1-1+438Carpets5903461510431+1+1+1+1+1+451Footwear15131313-1-1-1-1-453Ready-made clothing76874577-1-1-1-1-455Household textiles2032059088+1+10-1+481Rubber products1299022649+10+1-1+491Jewellery46226150246-1+1+1+1+1+493Photographic and cinematographic laboratories7841110293-1-10+1404Tows reports goods72693534-1-1-1	351	Motor vehicles	229	170	104	191	+1	+ 1	- 1	+ 1	$^{+3}$
431Wool industry12113261101 $+1$ $+1$ -1 -1 432Cotton industry15210018488 $+1$ 0 $+1$ -1 $+1$ 438Carpets5903461510431 $+1$ $+1$ $+1$ $+1$ $+1$ $+1$ 438Carpets5903461510431 $+1$ $+1$ $+1$ $+1$ $+1$ $+1$ 451Footwear151313 -1 -1 -1 -1 -1 -1 453Ready-made clothing76874577 -1 -1 -1 -1 -1 455Household textiles2032059088 $+1$ $+1$ 0 -1 $+1$ 481Rubber products1299022649 $+1$ 0 $+1$ -1 $+1$ 491Jewellery46226150246 -1 $+1$ $+1$ $+1$ $+1$ 493Photographic and cinematographic laboratories7841110293 -1 -1 -1 -1 -1 -1 -1 494Tows mets goods72693534 -1 -1 -1 -1 -1 -1	364	Aerospace equipment	91	122	38	101	1	- I + 1	- 1		- Z + 1
432 Cotton industry 132 100 164 66 +1 0 +1 -1 +1 438 Carpets 590 346 1 510 431 +1 <td>431</td> <td>Wool Industry</td> <td>121</td> <td>152</td> <td>194</td> <td>101</td> <td>± 1</td> <td></td> <td>+ 1</td> <td>- 1</td> <td>+1</td>	431	Wool Industry	121	152	194	101	± 1		+ 1	- 1	+1
436 Carpers 590 540 1510 451 $+1$ -1 $+1$	432	Correcto	500	246	1 510	421	± 1	+ 1	+1	+ 1	+ 4
431 Potweal 13 13 13 13 13 13 14	438	Carpels	15	13	1 310	13	-1	-1	-1	-1	-4
455 Household textiles 203 205 90 88 +1 +1 0 -1 + 481 Rubber products 129 90 226 49 +1 0 +1 -1 + 491 Jewellery 46 226 150 246 -1 +1 +1 +1 +1 493 Photographic and cinematographic laboratories 78 41 110 293 -1 -1 0 +1 -1 494 Tows roots goods 72 69 35 34 -1 -1 -1 -1	451	Ready-made clothing	76	13	15	13 77	-1	- 1	- 1	- 1	-4
481 Rubber products 129 90 226 49 +1 0 +1 -1 + 491 Jewellery 46 226 150 246 -1 +1	455	Household textiles	203	205	90	88	+ 1	+ 1	0	-1	+ 1
491 Jewellery 492 Photographic and cinematographic laboratories 78 41 110 293 -1 -1 0 $+1$ -1 72 69 35 34 -1 -1 -1 -1 -1 -1 -1	481	Rubber products	1205	90	226	49	+1	0	+ 1	-1	+1
493 Photographic and cinematographic laboratories 78 41 110 293 -1 -1 0 $+1$ -1	491	Iewellerv	46	226	150	246	- 1	+1	+ 1	+1	+2
1 aboratories 78 41 110 293 -1 -1 0 $+1$ 404 Tows roots goods 72 69 35 34 -1 -1 -1 -1	493	Photographic and cinematographic	10	220	150	210				1. A	. –
104 Tays most goods 72 69 35 34 -1 -1 -1 -1 -1	-75	laboratories	78	41	110	293	-1	-1	0	+1	-1
$\frac{1}{10}$	494	Toys, sports goods	72	69	35	34	- 1	-1	- 1	- 1	-4

Source: Commission services.

Annex 2

Indicators of dynamic competitiveness in the sensitive sectors identified at a national level

NACE code	Sectors		▲ Intra SI		$\frac{A \text{ Intra}}{M}$	▲ Intra SI		Global score
Group 1								
330	Office and data-processing equipment	4	3	10	0	+ 1	+1	+ 2
344	Telecommunications	- 8	- 9	12	-1	-1	+1	- 1
372	Medico-surgical equipment	-15	-12	-13	- 1	-1	-1	- 3
Group 2								
257	Pharmaceuticals	0	- 7	39	0	-1	+1	0
315	Boilermaking	38	43	-228	+ 1	+1	-1	+1
362	Rolling stock	- 24	- 31	-6	- 1	-1	- 1	- 3
427	Brewing, malting	123	-6	-2356	+ 1	-1	-1	-1
428	water, soft drinks	17	38	1 312	+1	+1	+1	+ 3
Group 3								
341	Insulated wires and cables	9	- 5	-109	+ 1	- 1	-1	-1
342	Electrical equipment	-1	-6	- 62	0	- 1	-1	-2
361	Shipbuilding Chaselete confectionery	4/	4	-9	+ 1	+1	-1	+1
421	Chocolate, confectionery	27	13	91	+1	+1	+1	+ 3
Group 4								
247	Glass, glassware	10	0	-40	+1	0	-1	0
248	Ceramic goods	0	3	37	0	+1	+ 1	+ 2
251	Basic industrial chemicals	- 5	3	0	0	+1	0	+ 1
252	Petrochemicals and carbochemicals	0	6	2	0	+ 1	0	+1
253	Other basic industrial chemicals	-30	-10	- 5	-1	- 1	0	- 2
230	agriculture	- 16	-6	12	- 1	- 1	+1	- 1
321	Agricultural machinery	-6	1	96	- 1	+ 1	+1	+ 1
322	Machines and other tools	20	18	- 59	+ 1	+1	- 1	+ 1
323	Machines textile industry	7	10	-97	+ 1	+1	-1	+ 1
324	Machines for food, chemical and related							
	industries	0	0	- 30	0	0	- 1	- 1
325	Plant for mines, etc.	20	11	- 19	+ 1	+1	- 1	+ 1
326	Transmission equipment	- 5	-1	- 8	0	- 1	- 1	-2
327	Other machines and equipment	2	2	0	0	+1	0	+1
345	Radio, 1 V	- 16	- 16	49	- 1	- 1	+ 1	-1
340	Lighting	_ 2	- 11	- 30	+ 1	- 1	- 1	-2
351	Motor vehicles	3	18	28	0	+ 1	+ 1	+ 2
364	Aerospace equipment	-15	-11	17	- 1	- 1	+ 1	-1
431	Wool industry	6	- 3	8	+ 1	- 1	+ 1	+1
432	Cotton industry	19	- 5	-27	+ 1	- 1	-1	-1
438	Carpets	80	29	720	+ 1	+ 1	+ 1	+ 3
451	Footwear	3	1	8	0	+1	+1	+2
453	Ready-made clothing	-1	-11	12	0	-1	+1	0
455	Household textiles	34	31	15	+1	+1	+1	+ 3
481	Rubber products	15	- 5	8	+ 1	- 1	+1	+ 1
491	Photographic and cinematographic	- 25	- /9	48	- 1	- 1	+1	- 1
775	laboratories	-4	- 1	-7	0	- 1	- 1	_ 2
494	Toys, sports goods	19	23	6	+ 1	+1	+ 1	$+\frac{2}{3}$
		• ·		~				

Source: Commission services.

Bibliography

- 1. Atkins Management Consultants (1987), 'The cost of non-Europe in public sector procurement', *Research on the 'cost of non-Europe'*, Volume 3, Documents series, EC Commission, Brussels.
- Buigues, P. and Ilzkovitz, F. (1988), 'Les enjeux sectoriels du marché intérieur', *Revue d'économie industrielle*, 3rd quarter.
- 3. Buigues, P. and Jacquemin, A. (1988), 'Les stratégies des entreprises européennes dans le grand marché intérieur', *Revue française de gestion*.
- Commission of the European Communities (1988), '1992: la nouvelle économie européenne. Une évaluation des effets économiques potentiels de l'achèvement du marché intérieur de la Communauté européenne', *Economie Européenne* No 35, March.
- 5. Commission of the European Communities (1989), Annual Economic Report, Study No 5, October.
- Delatre, M. (1983), 'Points forts et points faibles du commerce extérieur industriel', *Economie et statistique*, No 57, pp. 15-30, July-August.
- Economists Advisory Group (1988), 'The cost of non-Europe in the pharmaceutical industry', *Research on* the 'cost of non-Europe', Volume 15, Documents series, EC Commission, Brussels.
- Fédération des Entreprises de Belgique (1989), 'Stratégie des entreprises et 1992', survey carried out in association with the National Bank of Belgium on Enterprise Day, 24 May.
- 9. Geroski, P. A. (1988), 'Competition and innovation', *Research on the 'cost of non-Europe'*, Volume 2, Documents series, EC Commission, Brussels.
- Golstein, S. (1988), 'Belgique 1993: année noire, année rose?', Solvay Business Review, No 5, 2nd quarter, pp. 6-11.

- 11. Ilzkovitz, F. (1989), '1992: investissements étrangers et délocalisation', Internal document II/200/89-FR, 43 pp.
- 12. IRES (1987), 'Wallonie-Europe. Horizon 1992', De Boeck Université.
- Konings, M. (1986), 'Evaluation des performances de la Belgique face à la spécialisation internationale', File 5/86, Ministry of Economic Affairs, Belgium.
- 14. KPMG (1989), 'International mergers and acquisitions survey', Dealwatch, pp. 18-36, June.
- 15. Ludvigsen Associates Ltd (1988), 'The EC 1992 automobile sector', in *Research on the 'cost of non-Europe'*, Volume 3, Documents series, EC Commission, Brussels.
- 16. MAC Group (1988), 'The cost of non-Europe: technical barriers in six industries', *Research on the 'cost of non-Europe'*, Volume 3, Documents series, EC Commission, Brussels.
- 17. Nerb, G. (1988) 'The completion of the internal market: a survey of Europe industry's perception of the likely effects', *Research on the 'cost of non-Europe'*, Volume 1, Documents series, EC Commission, Brussels.
- 18. Porter, M. E. (1982), 'Choix stratégiques et concurrences', *Economica*, Paris.
- 19. Pratten, C. (1988), 'A survey of the economies of scale', *Research on the 'cost of non-Europe'*, Volume 2, Documents series, EC Commission, Brussels.
- Sleuwaegen, L. (1989), 'Stratégies des entreprises et nouvelles formes de coopération entre entreprises', EC Report 1989/1270 of the Central Committee on the Economy, 87 pp., December.
- Walsh, V. (1987), 'Technologies et compétitivité et les problèmes particuliers des petits pays', *STI Review*, No 2, September, pp. 85-156.
- 22. Yamawaki, H.; Weiss, L.; Sleuwaegen L. (1986), 'Industry competition and the formation of the European common market', Research report No 8609 by Incap, Katholieke Universiteit Leuven, August.

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Denmark

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Contents

1.	Market integration and the Danish economy	141
2.	Identification of sectors most likely to be affected	141
2.1.	National non-tariff barriers in Denmark	141
2.2.	Selection of sensitive sectors in Denmark	143
2.3.	Economic aspects of sensitive sectors	143
3.	Static competitive position of sensitive sectors	143
3.1.	Composite indicator of competitive position	143
3.2.	Importance of weak, average and strong performers for the Danish economy and employment levels	145
4.	Change in the competitive position of sensitive sectors	145
4. 4.1.	Change in the competitive position of sensitive sectors Change between 1980 and 1987	145 145
4. 4.1. 4.2.	Change in the competitive position of sensitive sectors Change between 1980 and 1987 Static and dynamic competitive positions	145 145 147
4. 4.1. 4.2. 5.	Change in the competitive position of sensitive sectors Change between 1980 and 1987 Static and dynamic competitive positions Dynamic adjustment — Reactions to the challenge of 1992	145 145 147 149
 4.1. 4.2. 5. Anne 	Change in the competitive position of sensitive sectors Change between 1980 and 1987 Static and dynamic competitive positions Dynamic adjustment — Reactions to the challenge of 1992 x: The sensitive sectors — Indicators	145 145 147 149
 4. 4.1. 4.2. 5. Anne Bibli 	Change in the competitive position of sensitive sectors Change between 1980 and 1987 Static and dynamic competitive positions Dynamic adjustment — Reactions to the challenge of 1992 x : The sensitive sectors — Indicators	145 145 147 149 152

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List of tables

1.	Schematic presentation of NTBs to trade by sector in Denmark	142
2.	Sensitive sectors, Denmark and the Community	144
3.	Economic dimensions of sensitive sectors	145
4.	Relative importance of sensitive sectors	145
5.	Indicators of competitive position	146
6.	Indicators of competitive position and overall assessment	147
7.	Weak, average and strong performers' share of industrial employment, production and value added	148
8.	Change in indicators of competitiveness	149
9.	Change in indicators of competitiveness and overall assessment	150
10.	Static and dynamic competitiveness — Change in competitive position	151

Graph

1. Competitive position of sensitive sectors in Denmark

148

1. Market integration and the Danish economy

Denmark is a small and open economy. However, the pattern of trade is not a bilateral one with other Community countries. This is mainly due to the tradition of intensive trade between the integrated Scandinavian countries. Economic openness is, in general, pursued through a low level of protection of the industries. In addition, the distribution of governmental subsidies seems to point in the direction of less governmental interference. In percentage of GDP, government aid to manufacturing (annual average 1981-86) amounted to 1,7 % in Denmark, whereas the average figure for the Community was 5,5 %. Calculated per employee, Denmark subsidized its industries by ECU 609 per head; the average figure for Europe was ECU 1 774.

The reason for a persistent liberal trade policy throughout the post-war period—and applied by different governments—is explained by the relatively small size of the economy with 5,1 million inhabitants and no significant production of raw materials—except natural gas. Therefore Denmark's case should be considered as one of a small and open economy where non-tariff barriers are low, compared to those in the Community.

Within industries already exposed to international competition, it is most likely that the direct impact of market integration will be negligible at the outset. Over time, however, a change in the competitive environment will occur as the industry restructures in response to the enlarged market. This process will obviously have ramifications for the smallcountry participants, such as Denmark, in the market. Whether the results are positive or negative will depend upon the characteristics of the industry in question.

The combination of a small and open economy has historically forced Danish manufacturers to apply a focused growth strategy by specializing in segments of the market, rather than to seek a dominant position in a major industry. Obviously, the strength of this strategy is the flexibility of companies to adapt and take advantage of changes in technology and demand patterns. The disadvantage, however, is represented by those situations where size is a predominantly large factor in shaping the competitive edge of firms operating on the European and international scene (e.g. telecommunications).

Danish firms are not among the largest industrial firms in the Community. However, in terms of relative size-distribution, Danish industrial structures are as concentrated as those in other Member States.

The international character of Danish industries and the relative openness of the Danish economy makes it less prob-

able that sectors will be adversely affected by the completion of the internal market. More important is the restructuring expected upon the removal of NTBs in the Community which would have a direct impact on the major industrial sectors in Denmark as the terms of competition are changed. If the average European competitor is operating below the minimum technically efficient scale, and if cost gradients are high, concentration must be expected to be the ultimate outcome of this process—impacting to a great degree on Danish industries.

2. Identification of sectors most likely to be affected

2.1. National non-tariff barriers in Denmark

Denmark's historical liberal trade policy is reflected in the identified national NTBs to trade (Table 1).

Fiscal barriers do exist, but they do not have an indiscriminate impact on trade. In motor vehicles (351), where high excise taxes exist, no manufacturing takes place in Denmark but these taxes may, of course, discriminate against other means of transportation through distortions of relative prices. In tobacco, alcohol, brewing, etc. health taxes are applied irrespective of origin. Danish excise taxes account for 6,5% of GDP, slightly above the level of those of Belgium, The Netherlands, the Federal Republic of Germany, Italy and slightly below those of Greece, Ireland and Portugal.

Public procurement is perceived to play a moderate role in boilermaking (315), office machinery and data-processing equipment (330), insulated wires and cables (341), telecommunications equipment (344), and railway equipment (362). For all these sectors, relatively high import penetration ratios simultaneously prevail with public procurement emphasizing that in general, such contracts are relatively open to foreign suppliers. With Community imports accounting for 50 % of domestic consumption, telecommunications (344) should be mentioned as a typical example where imports are high because Denmark does not produce major items such as public exchanges.

Technical standards as barriers to trade exist only in a few sectors. Among those most noteworthy are the ban on use of cans in brewing and soft drinks, which has the side-effect of preventing significant cross-border sales, and standards in construction for certain categories of carpentry and other building materials. In pharmaceuticals (257) and telecommunications (344), approval by national authorities of product quality is assumed to affect trade in a way that is similar

Schematic presentation of NTBs to trade¹ by sector in Denmark

NACE code	Sector	Public procurement	Technical standards	Customs procedures	Art. 15 & quotas	Other	Total ²
247	Glass & glassware		1				1
257	Pharmaceuticals		1			2	3
258	Soap & synth. deterg. etc.		2				2
314	Struc. metal. prod.		1				1
315	Boilermaking, etc.	2					2
316	Finished metal prod.			1			1
330	Office machinery and data equipment	2				1	3
341	Insulated wires etc.	2		1			3
344	Telecommunications	2	2				4
361	Shipbuilding	1				3	4
362	Locomotives, tramways	2					2
363	Bicycles, etc.		1				1
421	Cocoa, etc.		1	1			2
427	Brewing					2	2
428	Soft drinks					2	2
430	Textile			1	1		2
463	Carpentry & parquets		1				1
466	Art. of cork, etc.		1				1
464	Wooden furniture			1			1
1 1. slip	the affected: 2: moderately affected, and 3: significantly affected			1			1

1: slightly affected; 2: moderately affected, and 3: significantly affected.
 2 Sum of values in the preceding columns.

to technical standards. It is interesting that no standards were found within the machinery and tools industry. Perhaps a reason for this is that the majority of producers of industrial goods have their major customers abroad and apply foreign standards to ensure their competitive position. No foreign purchaser may find it worthwhile to buy a product fulfilling Danish technical standards which are non-compatible with those prevailing elsewhere.

Border formalities have been almost entirely removed. All import licences—including those for textiles (430) and iron and steel (221)—are granted automatically and their control, if any, occurs after importation. This change of procedure was implemented as a result of the abolition of all import regulations and the subsequent replacement of Community legislation. As a consequence, only EC regulations are checked and often only at the request of competitors. The abovementioned sectors are those that currently are subject to EC import regulations, and in which a minimum of paperwork is required (*ex post*) for imports.

From Table 1, the group of 'Other NTBs' are the following:

257: In pharmaceuticals, a *de facto* monopoly exists in overthe-counter drugs. Although prices are controlled by the public authorities, the retailers' own production of a few standardized products may be subject to excessive profits due to the specific structure of this industry. It should be mentioned, however, that the rest of the industry is producing mainly on an export basis, with the domestic market being of minor importance to the companies.

- 330: Some elements of local protection may occur as central government and local authorities provide services within data processing. They provide services rather than manufacture equipment.
- 361: The national financing schemes for the shipbuilding sector are perceived as hindering trade.
- 427 & 428: Access to distribution is difficult due to a system of recycling of bottles managed by the major Danish manufacturers.

Three other sectors have to be considered even if nontariff barriers are not very important for them in Denmark, because they are highly dependent on the European market: 328 (other machinery equipment), 436 (knitting industry), 483 (processing of plastics).

2.2. Selection of sensitive sectors in Denmark

At the European level, 40 sectors are expected to be sensitive to the completion of the internal market. Thirty-five of these are relevant in the case of Denmark, meeting the criteria of domestic production. The sectors not relevant for Denmark are: motor vehicles (351), aerospace equipment (364), pasta (417), champagne, wines (425), photographic laboratories (493).

The sectors employing less than half a percentage point of total industrial employment, production and value added are disregarded. To illustrate this argument, half a percentage point of industrial employment equals 1 800 people. The group of small and economically insignificant sectors which is disregarded consists of: glass and glassware (247), other chemical products (256), textile machinery (323), transmission equipment (326), other machinery for specific industries (327), electrical appliances (346), lighting (347), wool industry (431), cotton industry (432), carpets (438) and jewellery (491). These sectors account for less than 2,3 % of total industrial employment.

Breweries (427) were found to be exposed to medium nontariff barriers. However, this industry is extremely concentrated in Denmark, and because the largest company in this industry (Carlsberg/Tuborg) is a global player, this sector has been removed from the list of sensitive sectors.

Table 2 presents the selection of sensitive sectors in Denmark.

The six additional sensitive sectors in Denmark are:

Certain chemicals (258),

Sectors related to construction (314 and 463),

Processing of plastics (483),

Other machinery and equipment (328),

The knitting industry (436).

In total, 28 sectors are perceived to be sensitive—both to a high and medium degree—to the completion of the internal market, of which 20 are medium sensitive and eight highly sensitive.

2.3. Economic aspects of sensitive sectors

As can be seen from Table 3, the categories of highly and medium sensitive sectors represent approximately half of industrial employment and almost 40 % of value added.

Consequently, the sensitive sectors are more labour intensive than the average of Danish industries.

As can be seen from Table 4, third column, the sensitive sectors import more from the Community than from third countries; a ratio of 1,27 for the sensitive sectors is considerably higher than the average for all industries in Denmark.

This result confirms the assumption that the process of market integration and adaption of industrial structures in the Community will have a major impact on the performance of Danish industries, because, on average, intra-European trade plays a more significant role for the sensitive sectors than for Danish industries.

It is surprising that the Danish sensitive sectors have performed well, in relation to the Community, when measured in terms of employment growth from 1980 to 1987. On average, the 40 sectors believed to be sensitive in the Community have lost almost 19% of their total employment. In the case of Denmark, the 28 sensitive sectors (as identified in the present study) benefited from a 4% increase in employment over the period 1980-87.

3. Static competitive position of sensitive sectors

While the significance to the Danish economy of the sensitive sectors is obvious, the question is how—and to what degree —these sectors might be affected by the internal market. The issue to be analysed here is the direction of the impact which depends—to a large extent—on the competitive position of the sensitive sectors *vis-à-vis* their European competitors within the Community. The idea is to measure the ultimate outcome of the sensitive sectors' competitive strengths and weaknesses.

3.1. Composite indicator of competitive position

In Tables 5 and 6, the sensitive sectors are divided into three groups of strong, average and weak performers. This is done by calculating the position of each sector using four indicators; the global score is calculated by assigning equal weight to each measure of competitiveness.

With a few exceptions, the competitive position seems to be classified in a fairly similar manner according to all the indicators used. Exceptions are found in cases where the intra and extra coverage ratios point in different directions.

Sensitive sectors, Denmark and the Community

EC category	NACE code	Industry	Denmark	EC
Group 1	330	Office and data-processing machinery	X (H)	х
	344	Telecommunications	X (M)	X
	372	Medical and surgical equipment	X (M)	Х
Group 2	257	Pharmaceutical products	X (H)	Х
	315	Boilermaking	X (H)	X
	362	Locomotives, tramway	X (H)	X
	425	Champagnes, sparkling wines	NR	X
	427	Brewing and malting		X
	428	Soft drinks	X (H)	Х
Group 3	341	Insulated wires and cables	X (H)	Х
	342	Electrical machinery	X (M)	X
	361	Shipbuilding	X (H)	X
	417	Spaghetti, macaroni, etc.	NR	Х
	421	Cocoa, chocolate, and sugar conf.	X (H)	Х
Group 4	247	Glass and glassware		Х
	248	Ceramic goods	X (M)	X
	251	Basic industrial chemicals	X (M)	X
	256	Other chemical products f. ind. & agr.		X
	321	Agricultural machinery	X (M)	Х
	322	Machine-tools for working metal	X (M)	X
	323	Textile machinery		X
	324	Machines for food, che, & rel. ind.	X (M)	Х
	325	Plant f. mines, iron & steel ind.	X (M)	X
	326	Transmission equipment f. motive power		X
	327	Other machinery f. specific industries		X
	345	Radio and television	X (M)	X
	346	Electric appliances		X
	347	Electric lamps & other elect. lighting		X
	351	Motor vehicles	NR	X
	364	Aerospace equipment	NK	X
	431	Wool industry		X
	432	Cotton industry		X
	438	Carpets		X
	451	Clothing	V (M)	A V
	455	Household textiles	\mathbf{X} (IVI) \mathbf{Y} (M)	A V
	433	Pubber products	\mathbf{X} (IVI) \mathbf{X} (M)	A Y
	401	Invellery		X
	493	Photographic and cinematographic labs	NR	X
	494	Toys and sports goods	X (M)	X
Additional sensitive sectors	258	Soan & synt detergents etc.	X (M)	
in Denmark	314	Structural metal products	\mathbf{X} (M) \mathbf{X} (M)	
UIIIIUI R	328	Other machinery and equipment	X (M)	
	436	Knitting industry	X (M)	
	463	Carpentry and joinery components	X (M)	
	483	Processing of plastics	X (M)	
			2 * (***)	

Note: NR = Not relevant; X = Selected sector; H = Highly sensitive sectors; M = Medium sensitive sector.

Economic dimensions of sensitive sectors

	Number of sectors	% of all manufacturing			
	-	Employment	Production	Value added	
Medium sensitive	20	39,8	29,9	28,9	
Highly sensitive	8	9,6	12,2	10,9	
Sensitive	28	49,4	42,1	39,8	
Non-sensitive	61	50,6	57,9	60,2	

Source: SOEC-Visa.

Table 4

Relative importance of sensitive sectors¹

Share in industrial employment	Share in industrial value added	Intra-EC imports	Imports from Europe
		Extra-EC imports	in % of domestic consumption
49,4%	39,8%	1,27	34%
nnual averages for 1985-87.			

In some cases, the coverage ratios seem to indicate a weak Danish position relative to their trading partners in the Community (low intra coverage ratio) and a strong position relative to non-EC trading partners (high extra coverage ratio). Sectors displaying these characteristics are: some of the machine industries (321, 324 and 325), the knitting industry (436), soap etc. (258), soft drinks (428), boilermaking (315), and cocoa etc. (421).

Among the weak performers, three sectors with highly specialized production are found. Two of these are related to public purchases (341 and 362).

3.2. Importance of weak, average and strong performers for the Danish economy and employment levels

The significance for the overall economy of the three groups is shown in Table 7. As indicated in this table, in terms of numbers, the sensitive sectors are highly polarized between strong and weak performers.

In terms of the share of total industrial employment, the distribution is biased towards the strong performers (see Graph 1), which is mainly due to the industries of other machinery (328), telecommunications (344) and shipbuilding (361) in this particular group, which are all highly labour-intensive sectors; covering almost one-third of total employment and only one-quarter of value added and production.

4. Change in the competitive position of sensitive sectors

4.1. Change between 1980 and 1987

An overall assessment of change in the competitive position is established by weighing the change in the major indicators of competitiveness (Tables 8 and 9).

Indicators of competitive position¹

NACI	E Sector	CR intra	SI export	CR extra	SI prod.
Weal	competitive position				
248	Ceramic goods	37	41	85	74
251	Basic chemicals	18	23	88	44
258	Soap, synth. detergents	12	24	323	59
322	Machine working metal	31	53	87	31
330	Office mach. and EDP	25	29	33	22
341	Insulated wires and cables	17	29	61	120
342	Electrical machinery	50	84	201	44
362	Locomotives etc.	1	4	32	110
153	Clothing and accessories	36	37	86	72
481	Rubber products	27	36	43	26
194	Toys and sports goods	52	58	32	404
Avera	ge competitive position				
315	Boilermaking	77	177	365	31
325	Plant for mines etc.	50	99	193	108
45	Radio and television	97	141	73	46
121	Cocoa, chocolate etc.	45	57	300	160
128	Soft drinks	99	29	520	31
36	Knitting industry	68	56	156	97
Stron	g competitive position				
257	Pharmaceutical products	115	213	328	129
14	Structural metal products	132	193	271	166
21	Agriculture machinery	45	172	185	149
24	Mach. f. food, chem. etc.	96	164	460	101
28	Other machinery and eq.	102	178	246	165
44	Telecommunications	114	137	214	110
61	Shipbuilding	544	682	405	431
72	Medical and surgical eq.	135	153	155	161
55	Household textiles	122	133	92	212
63	Carpentry etc.	H ²	H^2	221	279
102	Processing of plastics	88	140	220	120

Sources: SOEC-Visa and European Economy No 35.

Despite the magnitude of change, the direction of change is partially correlated in a positive manner—especially between the intra and extra coverage ratios.

There are, however, a couple of cases where the intra and extra coverage ratios differ drastically. For sectors such as boilermaking (315), agricultural machinery (321), mining equipment, iron and steel (325) and carpentry, etc. (463), it appears that the ability to cover imports by exports is deteriorating in terms of trade with non-Community partners. The same development does not occur for trade with the Community. By contrast, a significant deterioration in the trade performance with the Community is only found for soft drinks (428).

Also notable are the differences of changes measured in terms of export coverage and specialization. While the former measure is somewhat negative due to the buoyant growth in domestic demand experienced in the mid-1980s, the latter indicates a more favourable position due to its

Indicators of competitive position and overall assessment¹

NACI code	E Sector	CR intra	SI export	CR extra	SI prod.	Total score
Weal	competitive position					
248	Ceramic goods	-1	-1	-1	-1	- 4
251	Basic chemicals	-1	-1	- 1	-1	-4
258	Soap, synth. detergents	-1	-1	1	- 1	-2
322	Machine working metal	-1	-1	-1	-1	-4
330	Office mach. and EDP	- 1	-1	- 1	-1	-4
341	Insulated wires and cables	- 1	-1	- 1	-1	- 4
342	Electrical machinery	-1	-1	1	-1	-2
362	Locomotives etc.	-1	- 1	-1	1	-2
453	Clothing and accessories	-1	-1	-1	-1	-4
481	Rubber products	-1	-1	-1	-1	-4
494	Toys and sports goods	-1	- 1	- 1	1	-2
Avera	age competitive position					
315	Boilermaking	-1	1	1	-1	0
325	Plant for mines etc.	- 1	0	1	1	1
345	Radio and television	0	1	0	-1	0
421	Cocoa, chocolate etc.	- 1	-1	1	1	0
428	Soft drinks	0	-1	1	- 1	-1
436	Knitting industry	- 1	-1	1	0	-1
Stror	ng competitive position					
257	Pharmaceutical products	1	1	1	1	4
314	Structural metal products	1	1	1	1	4
321	Agriculture machinery	- 1	1	1	1	2
324	Mach. f. food, chem. etc.	0	1	1	1	3
328	Other machinery and eq.	0	1	1	1	3
344	Telecommunications	1	1	1	1	4
361	Shipbuilding	1	1	1	1	4
372	Medical and surgical eq.	1	1	1	1	4
455	Household textiles	1	1	0	1	3
463	Carpentry etc.	-1	1	1	1	2
483	Processing of plastics	1	1	1	1	4

For each indicator, the score is: -1 when value is less than 90% 1

0 when value is between 90 and 110% + 1 when value is more than 110%.

Source: Table 5.

focus on the external performance. However, taken together, the three indicators demonstrate important aspects of change in competitive performance.

sensitive sectors' competitive position, making it possible to assess whether the static positions identified are stable, improving or deteriorating (Table 10).

4.2. Static and dynamic competitive positions

By combining the actual competitive position with its change, a dynamic dimension is added to the analysis of the Surprisingly, when measured in terms of share of employment or value added, the majority of sectors are found to be in the group with no change in their position-irrespective of their current competitive position. For some sectors, however, a positive relationship is found between the in-

Weak, average and strong performers' share of industrial employment, production and value added (average for 1985-87)

				(in % of all industries)
	Number of sectors	Share of industrial employment	Share of industrial production	Share of industrial value added
W/1	11	12.0	0.9	10.2
weak	11	12,0	9,8	10,3
Average	6	7,0	5,6	5,9
Strong	11	30,1	22,8	23,3
Note: Classification in accordance w	vith Table 5			

Note: Classification in accordance with Table 5 Source: SOEC-Visa.



Change in indicators of competitiveness

NACE code	E Sector	Change in CR (intra)	Change in SI (export)	Change in CR (extra)
248	Ceramic goods	- 16	- 2	- 38
240	Resic chemicals	10	27	21
257	Pharmaceutical products	12	49	60
258	Soan synth detergents	12	4	28
314	Structural metal production	7	62	5
315	Boilermaking	33	77	- 194
321	Agricultural machinery	- 36	38	- 148
322	Machine-tools etc	- 13	6	- 55
324	Mach f food chem etc	- 16	4	-37
325	Plant for mines etc.	- 53	16	-146
328	Other machinery and equip.	- 31	- 6	6
330	Office mach, and EDP	3	5	2
341	Insulated wires and cables	3	11	1
342	Electrical machinery	15	27	35
344	Telecommunications	- 16	12	- 7
345	Radio and television	- 12	39	16
361	Shipbuilding	442	87	112
362	Locomotives and tramways	-11	-28	-23
372	Medical and surgical equip.	13	28	12
421	Cocoa, chocolate, etc.	-12	- 8	79
428	Soft drinks	- 339	-6	3
436	Knitting industry	-14	7	-17
453	Clothing and accessories	8	18	18
455	Household textiles	- 31	41	- 24
463	Carpentry etc.	low	158	-233
481	Rubber products	5	12	-14
483	Processing of plastics	6	29	8
494	Toys and sports goods	6	15	- 1

crease in the competitive positions and already strong sectors. Such a correlation is only found between declining and weak competitive positions for sectors covering 1,5 % of industrial employment.

5. Dynamic adjustment—Reactions to the challenge of 1992

During the last couple of years, horizontal studies of how Danish industrial companies are preparing for 1992 have been conducted by various institutions. Unfortunately, these studies do not report observations broken down by sectors.

Danish industrial firms are almost exclusively positive or neutral in terms of expectations on how the completion of the internal market will impact their companies. Only a small fraction expects to be adversely affected. All large companies—or companies implementing deliberate strategies for internationalization with high export ratios (relative to output)—expect to receive net gains from market integration.

According to a recent National Statistical Agency questionnaire, which has been found to be the most accurate of the studies conducted:

(a) 60 % of industrial companies expect to increase sales to the Community, compared to only 12 that expected increases in sales to non-member States. The figures do not suggest any bias between producers of capital goods, intermediate or final consumption goods;

Change in indicators of competitiveness and overall assessment

NACE code	Sector	Change in CR (intra)	Change in SI (export)	Change in CR (extra)	Overall assessment of change
248	Ceramic goods	- 1	- 1	- 1	- 3
251	Basic chemicals	0	1	1	2
257	Pharmaceutical products	1	1	1	3
258	Soap, synthetic detergents	0	1	1	2
314	Structural metal production	1	1	0	2
315	Boilermaking	1	1	-1	1
321	Agricultural machinery	- 1	1	-1	- 1
322	Machine-tools, etc.	- 1	1	- 1	-1
324	Mach. for food, chemical industries	- 1	1	- 1	- 1
325	Plant for mines etc.	- 1	1	-1	-1
328	Other machinery and equip.	- 1	- 1	-1	- 3
330	Office mach. and EDP	0	1	0	1
341	Insulated wires and cables	0	1	0	1
342	Electrical machinery	1	1	1	3
344	Telecommunications	- 1	1	-1	- 1
345	Radio and television	- 1	1	1	1
361	Shipbuilding	1	1	1	3
362	Locomotives, etc.	- 1	- 1	-1	- 3
372	Medico-surgical equipment	1	1	1	3
421	Cocoa, chocolate, etc.	- 1	- 1	1	- 1
428	Soft drinks	-1	-1	0	- 2
436	Knitting industry	-1	1	-1	-1
453	Clothing and accessories	1	1	1	3
455	Household textiles	- 1	1	- 1	- 1
463	Carpentry etc.	- 1	1	-1	-1
481	Rubber products	0	1	- 1	0
483	Processing of plastics	1	1	1	3
494	Toys and sports goods	1	1	0	2

Note: For CR (intra) and CR (extra), the score is -1, 0 and 1 in ranges below -5, between -5 and 5, and above 5, respectively. For SI (export), the score is -1 for values below 0 and 1 for values above 0. Sources: See Table 8.

(b) in general, however, Danish companies are less optimistic in terms of their judgment of the expected increase in sales relative to their competitors within the Community;

(c) 43 % indicated that they expect entry to be eased, while 46 % did not expect a difference in terms of ease of entry to the Community market relative to other markets. The most optimistic respondents were found among producers of intermediate goods and goods for final consumption;

(d) 53 % expect a decrease in costs, while 44 % did not envisage any changes. The majority of producers of investment goods expect costs to decrease;

(e) among those companies expecting increases in sales to the Community, only 15 % planned price reductions, while 40 % expect to gain a competitive edge through other means such as changes in the product portfolio, guarantee services, or marketing.

The following can be extracted from the abovementioned sources concerning companies' preparations for 1992:

- (i) 60 % have taken initiatives to prepare for the enlarged market and the envisaged increase in competition;
- (ii) priorities are given to reinforce management, enlarge the companies' distribution network in Europe, invest in more cost-efficient production, reduce less profitable activities, and negotiate strategic alliance with companies situated in other Member States;
- (iii) the single largest problem envisaged is the absolute small size and more constrained access to resources compared to their Community competitors.

Static and dynamic competitiveness

Change in competitive position

Decline	No change	Increase
Weak performers		
248 Ceramic goods362 Locomotives and tramways	 322 Machine tools 330 Off. mach. & EDP eq. 341 Insul. wires/cables 481 Rubber products 	 251 Basic chemicals 258 Soaps, etc. 342 Electrical mach. 453 Clothing & acc. 494 Toys & sports goods
Average performers		
428 Soft drinks	 315 Boilermaking 325 Plant for mines, etc. 345 Radio & television 421 Cocoa, chocolate, etc. 436 Knitting industry 	
Strong performers		
328 Oth. mach. & eq.	 321 Agric. machinery 324 Mach. for food, chemical. ind. 344 Telecommunications 455 Household textiles 463 Carpentry, etc. 	 257 Pharmac. products 314 Struct. metal 361 Shipbuilding 372 Medic. & surg. equipment 483 Processing of plastics

The seriousness with which companies are preparing for 1992 can be seen from the recent wave of mergers taking place between companies within:

- the pharmaceuticals sector, where NOVO and Nordisk Gentofte, both major international players within the insulin market, merged in order to gain economies of scale primarily in R&D, but also in marketing and management;
- (2) the biotechnology and food-processing sectors, where Sukkerfabrikkerne A/S, DANISCO A/S and Scandinavisk Holding have decided to join activities in order to develop new process technologies based on biotechnology and new additives for food production.

These initiatives should be viewed in the context of the analysis provided in the previous sections. The strategic problem for Danish industries—being favourably situated *vis-à-vis* the completion of the internal market—is to achieve the necessary scale in order to continue as viable competitors in their highly international markets.

For industries unfavourably positioned, common ownership with major European companies is considered by those aware of their strategic positions. Examples are found within basic chemicals (251), where the Finnish company, Kemira, has bought a majority share in Superfoss Gødning A/S; locomotives etc. (362) where Scania Randers was bought by ABB, and in office machinery etc. (330) where a series of direct foreign investments in the form of acquisitions have taken place.

As to sensitive sectors in an uncertain position, the picture of the companies' strategic direction is blurred because the major sectors in terms of employment shares are highly populated by small or medium-sized companies. While, at present, there appear to be no initiatives taking place among the majority of these companies, the Swedish metalworking industries are increasing their acquisitions of Danish electronic and machinery producing firms.

The net-inflow of Swedish direct investments is increasing with approximately 40 % per annum totalling DKR 1,9 billion in 1988. The reason for these acquisitions are—according to a Swedish trade representative in Copenhagen—that the small Danish metalworking and electronic companies are inexpensive relative to other European companies, because they do not have the sufficient administrative and planning capabilities to develop strategies of their own for the future. However, they do possess technical skills that may be utilized in conjunction with a larger firm.

Annex

The sensitive sectors — Indicators

NACE code	Sector	NTB EUR 12	NTB DK	PRec	PRwt	(X/P)ec %	(X/P)wt
248	Ceramic goods	2		43	80	24	74
251	Basic chemicals	2		46	77	16	61
257	Pharmaceutical products	3	2	23	39	18	55
258	Soap, synth. deterg. etc.	2	1	17	22	2	18
314	Structural metal products	2	1	20	31	16	41
315	Boilermaking	3	2	25	34	14	46
321	Agriculture machinery etc.	2		45	59	26	60
322	Mach. tools for working metals	2		66	Н	37	Н
324	Mach. food, chem. ind.	2		Н	Н	53	Н
325	Plant f. mines etc.	2		62	Н	28	Н
328	Other mach. and equipment	2		34	54	29	66
330	Office machinery & EDP	3	2	20	41	6	15
341	Insulated wires & cables	3	2	10	18	1	7
342	Electrical machinery	3		67	Н	28	Н
344	Telecommunications equip.	3	2	49	Н	33	Н
345	Radio & television	2		54	Н	72	Н
361	Shipbuilding	3	3	5	19	10	49
362	Locomotives & tramways etc.	3	2	23	27	5	7
372	Medical & surgical equip.	3		43	92	39	94
421	Cocoa, chocolate, etc.	3	1	15	22	7	25
428	Soft drinks	3	2	3	10	5	34
436	Knitting industry	2		54	Н	29	Н
453	Clothing and accessories	2		23	66	10	54
455	Household textiles	2		26	78	32	80
463	Carpentry & joinery comp.	2	1	2	17	34	59
481	Rubber products	2		54	87	30	68
483	Processing of plastics	2		33	51	25	58
494	Toys & sports goods	2		10	38	7	18
	Total indust	ry		28	53	23	54

Note: H = high. Source: SOEC-Visa.

Bibliography

J. B. International A/S (1988), Profil af bestyrelser on direktioner i danske virksomheder.

Vilstrup K. S. and Revisorcentret/Ernst & Whinney, Europa 1992—Danske virksomheders forventninger on forberedelse.

Rebild Marketing Management A/S (September 1985), management opinion.

Danmarks Statistik (1988), Undersøgelse vedrørende gennemførelse af det indre marked.

European Commission (1989), first survey on State aid in the European Community.

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Contents

1.	Definition and significance of sensitive industries in the Federal Republic of Germany	157
2.	A first view of the performance of German suppliers within the sensitive industries	157
3.	Static competitiveness of German suppliers within the sensitive indus- tries	159
3.1.	Indicators of static competitiveness	159
3.2.	Comparison of the classifications according to the different indi- cators	159
3.3.	Clear-cut strong and weak points	161
 3.4. 3.4.1. 3.4.2. 3.4.3. 	Threats and opportunities indicated by the different levels of the indicators of competitiveness Industries with a strongly protected domestic market Industries with a better competitive position on the EC market Industries with a better third-country position	162 162 163
4.	Change in the competitive position during the 1980s	163
5.	Dynamic adjustments	165
5.1. 5.1.1. 5.1.2.	Germany as a location for manufacturing Evaluation of the general business environment Evaluation of the relative costs of production	165 166 166
5.2.	Reactions planned by industrial companies to the challenge of the	
521	internal market	166
5.2.1.	Plans concerning Production	160
5.2.3.	Conclusions concerning employment	169
	5 1 5	

Bibliography

174

List of tables

1.	Significance of sensitive industries in 1985	157
2.	Competitive position of German suppliers in the sensitive industries according to different indicators	160
3.	Distribution of employment and value added within sensitive indus- tries by degree of competitiveness in 1985	162
4.	Changes in competitiveness during the 1980s	164

List of graphs

1.	Position of the sensitive industries — Allocation of employees by industries with different trends in European demand	158
2.	Position of the sensitive industries — Changes in employment by industry groups	158
3.	Industries by degree of competitiveness and size in Germany	161
4a/4b.	Pros and cons of production in Germany — General factors	167
5a/5b.	Pros and cons of production in Germany — Cost factors	168
6a/6b.	Completion of the internal market — Reactions concerning pro- duction capacity	170
7a/7b.	Completion of the internal market — Reactions concerning R&D capacities, by sector	171
8a.	Completion of the internal market — Reactions concerning R&D capacities, according to firm size	172
8b.	Completion of the internal market — Reactions concerning pro- duction in Germany, according to firm size	172

1. Definition and significance of sensitive industries in the Federal Republic of Germany

There are arguments to shorten but also to enlarge the list of the sensitive sectors identified at Community level. Because of their sensitivity with respect to the planned harmonization of indirect taxes, the two industries of spirit distillation and tobacco products (Group 5 in Table 1) could be included. Other industries affected by the tax harmonization are already viewed as sensitive according to other criteria.

In view of the fact that producers of construction materials are protected by national standards and will be indirectly affected by the opening of the public-procurement market, five industries of construction materials (241 to 245 or Group 6 in Table 1) might also be added to the list of sensitive industries. It is true—as Buigues/Ilzkovitz argue (1988b, p. 3)—that trade in these products is limited due to high transport costs. This fact however does not exclude the possibility that enterprises within these industries might have to face a significant increase in competition on markets in the centre of Europe and near borders after the reduction of trade barriers.

In order to secure comparability with the other country studies the following chapters will concentrate on the Buigues/Ilzkovitz list. The industry 'NACE 493 Photographic processing' could not be covered due to a lack of relevant data for Germany.

The following industries could not be shown separately:

- 251 Basic chemicals
- 256 Other chemical products for industrial and agricultural products
- 341 Insulated wires and cables
- 431 Wool
- 432 Cotton

They are respectively incorporated in the following 3-digit NACE categories: NACE 250 'Other chemicals', NACE 342 'Electric motors' and NACE 430 'Wool, cotton'.

In Germany, the sensitive sectors account for 56,7% of manufacturing employment and for 60,4% of manufacturing value added. Their share is higher in Germany than in the other EC countries (Table 1). This is true both for employment and value added. In particular, the highly affected industries (Groups 1 to 3) have a greater significance in German manufacturing industry.

Table 1

Significance of sensitive industries in 19851

Sectors	Emplo	oyment	Value	added
	D	EUR 9	D	EUR 9
Group 1	8,1	5,7	9,1	7,1
Group 2	3,7	4,5	5,1	6,9
Group 3	7,1	5,6	6,2	4,6
Strong changes —				
Groups 1 to 3	18,9	15,9	20,4	18,6
Group 4	35,6	34,9	34,3	31,3
Sensitive industries (EC)	54,5	50,8	54,6	49,9
Group 5	0,4	0,9	3,9	6,2
Group 6	1,8	2,2	1,9	2,5
Sensitive industries (IFO)	56,7	53,9	60,4	58,6

¹ Share in total manufacturing in %.

Source: SOEC-Visa, IFO calculations.

2. A first view of the performance of German suppliers within the sensitive industries

The position of German suppliers in the sensitive industries will be different according to whether they are operating in growing or shrinking markets. In growing European markets the intensification of competition might only imply a differentiation in the growth of employment in the different countries.

In stagnating or shrinking markets, however, there will be winners and losers. As trends normally are persistent, the constellation in the 1980s can give a preliminary picture of the situation for German manufacturing industry.

As Graph 1 shows, within the sensitive industries in Germany 45 % of all employees are allocated to industries with a growth of the EC market above the average of 37 % in total EUR 9. The share of employees working in industries with weak demand is also lower than the EC average.

However, German manufacturers do not only have a higher share of human resources in growing industries within the Group of sensitive industries. The German companies succeeded on average in expanding employment faster or alternatively reducing employment at a slower rate than their European competitors in each Group of industries during the 1980s (Graph 2).

For example in the group of industries with an EC market growth rate above average, the German companies increased





the number of employees by 8 % between 1980 and 87. By contrast, in the EUR 9 aggregate a decline in employment of 6% occurred in the same period of time. This implies that employment in the other EC countries dropped sharply. Better German performance is also visible for the other groups of sensitive industries.

The increase of the German share in EUR 9 employment in the sensitive industries is largely explained by stronger production growth. On average German production expanded annually by one percentage point more than EUR 9 production between 1980 and 1987. But the better employment performance also reflects the slower rate of increase of German wages compared to that of EC competitors.

As the German market did not expand faster than the EC market, these results point to the generally strong competitiveness of German manufacturers. This has to be confirmed by a more detailed analysis of German competitiveness in the sensitive industries.

3. Static competitiveness of German suppliers within the sensitive industries

3.1. Indicators of static competitiveness

Five indicators are used to measure the competitive position of German industries:

- (i) CP1, the ratio of intra-EC export to intra-EC trade (sum of intra-EC exports and intra-EC imports);¹
- (ii) CP3, the same ratio for extra-EC trade;
- (iii) CP2, the intra-EC export specialization index;
- (iv) CP4, the extra-EC export specialization index;
- (v) CP5, the production specialization index which is the only indicator independent of trade.

The German position in the sensitive industries is classified according to each indicator. For this purpose all indicators were transformed into specialization indices by dividing the values of the indicators for the individual industry by the corresponding value for total manufacturing. The values 110 and 90 for the specialization index (IS) are respectively used as limits for classifying the industries according to a 'strong' (IS > 110) or 'weak' (IS < 90) competitive position.²

In order to summarize the results a synoptic indicator (CPS) was constructed. The indicator is calculated by summing up the classifications according to the indicators CP1, CP2, CP3 and CP5. In order to be comparable with other country reports CP4 was not included.

Clearly, the equal weight given to each indicator in constructing this index is only one option. But there is hardly any information concerning differences in the importance or the reliability of the different indicators.

3.2. Comparison of the classifications according to the different indicators

Table 2 shows that the competitive strength of the industries is often classified similarly by the different indicators. In 13 cases out of 43 the classification is identical for all five indicators. If one minor exception (i.e. CP1=0, all other classifications = 1) is allowed, then nearly half of all sensitive industries have a clear position concerning competitiveness. For the trade-based indicators alone similar relations result.

On the other hand, there are seven cases of completely contradictory classifications (i.e. CP2 = 1, CP3 = -1):

- 241 Clay products for construction
- 243 Cement and plaster products
- 361 Shipbuilding
- 362 Railway and tramway rolling stock
- 364 Aerospace equipment
- 347 Electric lamps
- 372 Medical/surgical equipment

In all cases the contradictions remain if only trade-based indicators are taken into account. This implies that the differences cannot be explained by the different definitions

$$\frac{X}{X+M}$$

This relation is equivalent to the intra-EC coverage ratio but has interesting properties. The measure can only assume values between 0% and 100%, indicating total dependency on imports or a 'monopolistic' market position.

² For the indicators CP1 and CP3, the thresholds used to classify an industry as strong, average or weak *vis à vis* the total industry average differ from those proposed by the services of the Commission. In this report, a sector is classified as strong (weak) if the ratio

is 10 % above (below) the total industry figure, while in the methodology proposed by the services of the Commission, a sector is strong (weak) if the ratio

is superior to 110 (less than 90).

Competitive position of German suppliers in the sensitive industries according to different indicators

NACE Industry		Classification ¹ according to					
		CP1	CP2	CP3	CP4	CP5	CPS
High	-technology industries supplying public sector						
330 344 372	Computer, office automation Telecommunications Medical/surgical equipment	0 0 0	-1 -1	$-1 \\ 0 \\ 1$	$-1 \\ 0 \\ 1$	0 1 1	$-\frac{2}{2}$
Trad	itional industries supplying public sector or regulate	d industries					
257 315 362 425 427 428	Pharmaceuticals Boilermaking, tanks, containers Railway, tramway, rolling stock Wine from fresh grapes Brewing and malting Soft drinks	$0 \\ 1 \\ -1 \\ -1 \\ -1 \\ -1$	-1 1 -1 -1 -1	$ \begin{array}{c} 0 \\ 1 \\ -1 \\ 1 \\ 0 \end{array} $	-1 -1 -1 -1 -1	$ \begin{array}{r} -1 \\ 0 \\ -1 \\ -1 \\ 0 \\ -1 \end{array} $	-2 -2 -4 -1 -3
Indus	stries facing competition from NICs						
342 361 417 421	Electric motors, generators, transformers Shipbuilding Pasta Cocoa, chocolate, sugar	$ \begin{array}{c} 1 \\ 0 \\ -1 \\ -1 \end{array} $	$ \begin{array}{r} 1 \\ -1 \\ -1 \\ -1 \end{array} $	$ \begin{array}{c} 0 \\ 1 \\ -1 \\ 1 \end{array} $	$ \begin{array}{r} 1 \\ -1 \\ -1 \\ -1 \end{array} $		$ \begin{array}{r} 3 \\ -1 \\ -4 \\ -1 \end{array} $
Indus	stries with moderate non-tariff barriers						
247 248 250 321 322 323 324 325 326 327 345 347 351 364 430 438 453 4453 4453 4454 491 494	Glass and glassware Ceramics Other chemical industry Agricultural machinery Machine tools Textile, sewing machinery Machines for food, chemical industries Plant for mines, iron, steel Transmission equipment Wood, paper, leather machinery Radio, television Electrical household appliances Electric lamps Motor vehicles Aerospace equipment Wool, cotton industry Carpets, linoleum Mass-produced footwear Ready-made clothing Household textiles Rubber products Jewellery Toys, sports goods	$\begin{array}{c} 0\\ 0\\ 0\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 0\\ 1\\ -1\\ -1\\ -1\\ -1\\ -1\\ -1\\ 0\\ -1\\ -1\\ 0\end{array}$	$ \begin{array}{c} -1\\ 0\\ 0\\ 1\\ 1\\ 1\\ 1\\ 1\\ -1\\ -1\\ -1\\ -1\\ -1\\ -1\\$	$\begin{array}{c} 0\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ -1\\ -1\\ -1\\ -1\\ -$	$ \begin{array}{c} -1 \\ -1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 0 \\ -1 \\ -1 \\ -1 \\ -1 \\ -1 \\ -1 \\ -1 \\ -1$	$\begin{array}{c} 0 \\ -1 \\ 0 \\ 0 \\ 1 \\ 1 \\ 1 \\ -1 \\ 0 \\ 1 \\ -1 \\ -$	$ \begin{array}{r} -1 \\ 0 \\ 1 \\ 3 \\ 4 \\ 4 \\ 4 \\ 4 \\ -1 \\ 2 \\ 4 \\ -2 \\ -4 \\ -4 \\ -4 \\ -3 \\ -2 \\ -4 \\ -3 \\ -3 \\ \end{array} $
Indus	stries in Group 5	1	1				
429	Tobacco products	- I 1	-1 -1	- I 1	-1 - 1	-1 0	-4 1
Indus	tries of Group 6						
241 242 243 244 245	Clay products for construction Cement, lime and plaster Cement or plaster products Asbestos goods Stone, non-metallic minerals	-1 0 0 -1	-1 -1 1 -1		$ \begin{array}{c} 0 \\ -1 \\ -1 \\ 1 \\ -1 \end{array} $	$ \begin{array}{r} -1 \\ -1 \\ 0 \\ 1 \\ -1 \\ \end{array} $	-2 -1 0 3 -4

¹ 1 = strong; 0 = average; -1 = weak. CPS = sum of classification for CP1, CP2, CP3, CP5. Source: SOEC-Visa, IFO calculations.

of the industries in the case of the production-based indicator CP5. Therefore, this result can be taken as an indication of the degree of uncertainty associated with the following assessments of the competitive positions of the different industries.

3.3. Clear-cut strong and weak points

Within the sensitive industries German manufacturing industry has a clear competitive edge in mechanical engineering and in motor vehicles (Graph 3). Out of the seven industries with a CPS of 4 (maximum value) are six branches of mechanical engineering. Agricultural machinery also has a high ranking. This implies that all subsectors of mechanical engineering seem to have a strong competitive position in the internal market. The weak points of German industry (CPS < -3) are in parts of food and beverages and other 'traditional' industries like footwear and wool and the cotton industry. But the aerospace equipment industry also has to be viewed as a weak point. This industry earned a CPS of -2 only because of its high relative share in intra-EC exports (CP2), which is simply explained by a huge number of exchanges of parts within the production of the European Airbus.

If all industries with a CPS of more than 3 and all those with a CPS of less than -3 are respectively viewed as having a strong or weak competitive position, then within the sensitive industries a far larger share of German employment and value added is created in industries with a strong competitive position (Table 3). The competitive position has resulted in a corresponding interindustrial specialization within



the European Community. The German suppliers have nearly as many employees in their strong areas as all other EC countries together. In terms of value added, the share of this was even higher than that for employment compared to the average for EC competitors in 1985. On the other hand, the German share of employment and value added, which is allocated to German weak points of competitiveness, is only half as big as the corresponding shares in the partner countries.

These results imply that the intensification of competition due to the completion of the internal market will most likely accentuate the existing specialization patterns of German manufacturing industry. For the German strong points, competitors from Japan, and to a lesser degree the United States of America, and NICs (cars) might continue to be more important than European competitors.

More interesting than the unequivocal cases are the industries with a CPS of higher than -2 but lower than 2 (Graph 3). In these industries, the 1992 race is open, judged from the starting positions. However, the constellation of the indicators might give some hints concerning the outcome.

3.4. Threats and opportunities indicated by the different levels of the indicators of competitiveness

The different indicators of competitiveness might be biased due to existing trade barriers. As the indicators were selected in order to compensate for different biases, different classifications of industries according to different indicators can give hints concerning the kind of protection and the potential implications of the abolition of these barriers after 1992.

3.4.1. Industries with a strongly protected domestic market

The indicators of the intra-EC and extra-EC trade performance (CP1 and CP3) can be biased due to especially high barriers to entry to the domestic market. The indicators based on export shares (CP2 and CP4) are nearly independent of the barriers on the German market. Therefore a better classification of an industry according to the performance indicators compared to the export share indicators would point to especially high German barriers against imports and vice versa.

Industries with a clear-cut better classification with respect to trade performance than to export shares are (for details, see Table 2):

242	Cement or plaster products	CPS =	0
247	Glass and glassware	CPS =	-1
257	Pharmaceutical products	CPS =	-2
361	Shipbuilding	CPS =	- 1
429	Tobacco industry	CPS =	1

The emergence of pharmaceuticals (high German standards for admission) and of shipbuilding (massive subsidies) on this list is not surprising. For cement and glass, high trans-

Table 3

Distribution of employment and value added within sensitive industries by degree of competitiveness in 1985

German industries with	Number	Number of employees ¹		Value added ²	
a competitiveness which is:	_	D	EUR 8 ³	D	EUR 8 ³
Strong (CPS \geq 3)	10	1 659 45,6	1 673 26,8	53 671 44,6	28 042 21,2
Average $(-3 < CPS < 3)$	16	1 558 42,9	3 049 48,4	56 688 47,2	79 959 60,3
Weak (CPS ≤ -3)	10	418 11,5	1 524 9,7	9 855 8,2	24 580 18,5
Sensitive industries	36	3 635 100,0	6 246 100,0	120 214 100,0	132 581 100,0

In thousands and in %.

In million ECU and in %.
 EC countries without Germany, Greece, Portugal and Spain.

Source : SOEC-Visa, IFO calculations.

port costs may explain the weaker position shown by the share indicators. However, as in the tobacco industry, the production and distribution decisions of international companies might add considerably to understanding the comparative levels of the indicators.

With the exception of tobacco products, in all industries production in Germany does not have a competitive edge compared to EC competitors. The abolition of the German barriers to market entry might therefore cause problems for the existing German suppliers.

3.4.2. Industries with a better competitive position on the EC market

In a few industries the classification according to the EC trade performance CP1 is different from the third-country trade performance CP3. In one Group the competitive position looks significantly better when judged from the EC trade position than from the position on third-country markets. Industries of this category are:

330	Office and data processing	CPS = -2
342	Electrical motors, generators,	
	transformers	CPS = 3
345	Radio and television receivers	CPS = -1
346	Electrical household appliances	CPS = 2
455	Household textiles	CPS = -3
494	Toys and sports goods	CPS = -3

Common features of these industries are that their products are strongly internationally traded and that Japanese companies and those companies from the Asian NICs have a competitive edge in these sectors. Therefore, the future trends in these industries depend on EC trade policy towards these countries. In a scenario of an 'open' EC, these industries might face problems. A need for restructuring might be especially pressing in industries with a weak competitive position.

3.4.3. Industries with a better third-country position

On the other hand there are a few industries exhibiting a better third-country performance. Industries in this category are:

241	Clay products for construction	$CPS = \cdot$	-2
243	Cement or plaster products	CPS =	0
244	Articles of asbestos	CPS =	3
248	Ceramic goods	CPS =	0
250	Basic and other chemicals	CPS =	1

361	Shipbuilding	CPS = -1
372	Medical/surgical equipment	CPS = 1
421	Cocoa, chocolate, sugar	CPS = -1
427	Brewing and malting	CPS = -1
428	Soft drinks etc.	CPS = -3
481	Rubber products	CPS = -2

This group is much more heterogeneous than the industries with a good EC position. The better third-country trade position partly reflects established relations with Germanspeaking countries (NACE 241, 243, 421, 428, 481). In these cases the result does not give an unambiguous signal for opportunities to gain market shares on the open EC market. For shipbuilding, competition with subsidies within Europe distorts any trade-based measure of competitiveness.

4. Change in the competitive position during the 1980s

The vitality and the dynamics of an industry is also often viewed as a sign of competitive strength. Therefore, the changes in the different indicator values between the beginning and the end of the 1980s for the individual industries should give additional information to assess the competitive position in the internal market. Increasing values between 1981-82 and 1985-87 indicate more dynamism, decreasing values a weaker performance of the German suppliers compared with their European competitors.

Again the changes of the indicators were transformed into classifications and into a synoptic indicator (CPA) summarizing the dynamic aspects of competitiveness.

A comparison of the competitive positions of the different industries in the second half and the beginning of the 1980s according to the different indicators shows a clear picture: the majority of German industries succeeded in improving their competitive position during the 1980s (Table 4).

Only five industries had to accept a deterioration in their competitive position according to the summary indicator CPA. In 1985 the 'losers' accounted for 6,5 % of all jobs in the sensitive industries compared to 67,5 % for the 'winners'. Even among the industries, which have a competitiveness well below the German average (CPS = -4) five sectors managed to improve their competitive position. The strongly positive balance explains why German employment performed better in all market segments (Graph 3).

Summarizing the results it can be noted that the German suppliers seem to have an excellent competitive position in

Changes in competitiveness during the 1980s

NAC	E Industry	Classification ¹ of changes v. 1980-82						
		CPI	CP2	CP3	CP4	CP5	СРА	
Industries with a CPS of 4								
322 323 324 325 326 327 351	Machine tools Textiles, sewing machinery Machines for food, chemical industry Plant for mines, iron, steel Transmission equipment Wood, paper, leather machinery Motor vehicles	0 0 0 0 0 0 0	0 0 1 0 0 0	$ \begin{array}{r} -1 \\ 0 \\ 0 \\ 0 \\ 0 \\ -1 \\ \end{array} $	1 1 1 1 1 1	1 0 1 0 1 1 1	0 0 1 1 1 1 0	
Industries with a CPS of 3								
315 321 342	Boilermaking, tanks, containers Agricultural machinery Electric motors, generators, transformers	0 0 0	$-1 \\ 1 \\ 1$	$0 \\ 0 \\ -1$	1 1 1	1 1 1	0 2 1	
Industries with a CPS of 2								
344 346 347 362	Telecommunications Electrical household appliances Electric lamps Railway, tramway, rolling stock	0 0 0 1	0 0 0 1	$-{1\atop 0 \\ 0}$	1 1 1	1 1 0 0	1 0 0 2	
Indu	stries with a CPS of 1							
250 372	Other chemical industry Medical/surgical equipment	0 0	1 1	0 1	$-1 \\ 1$	-1^{0}	1 1	
Indu	stries with a CPS of 0							
248	Ceramics	0	0	0	1	0	0	
Indu	stries with a CPS of -1							
247 345 361 421 427	Glass and glassware Radio, television Shipbuilding Cocoa, chocolate, sugar Brewing and malting	1 0 1 1 0	1 0 1 1 1	0 0 1 0	$ \begin{array}{c} 1 \\ 0 \\ -1 \\ 1 \\ 1 \end{array} $	$ \begin{array}{c} 0 \\ -1 \\ 0 \\ 1 \\ 0 \end{array} $	$-\frac{2}{1}$ $\frac{2}{4}$ 1	
Industries with a CPS of -2								
257 330 364 481	Pharmaceuticals Computer, office automation Aerospace equipment Rubber products	1 0 0 0	$-\frac{1}{1}$ 1	$-1 \\ 0 \\ -1 \\ 0$	$ \begin{array}{c} 0 \\ 0 \\ -1 \\ 1 \end{array} $	$ \begin{array}{c} 0 \\ -1 \\ -1 \\ 1 \end{array} $	$-\frac{1}{2}$ -122	
Industries with a CPS of -3								
428 455 494	Soft drinks Household textiles Toys, sports goods	1 1 0	0 1 0	$-1 \\ 1 \\ 1$	1 1 1	0 0 1	0 3 2	
Industries with a CPS of -4								
417 425 430 438 451 453 491	Pasta Wine from fresh grapes Wool, cotton industry Carpets, linoleum Mass-produced footwear Ready-made clothing Jewellery	$ \begin{array}{c} 1 \\ -1 \\ 1 \\ 1 \\ 1 \\ 0 \end{array} $	$ \begin{array}{c} 1 \\ -1 \\ 1 \\ 0 \\ 0 \\ -1 \\ -1 \end{array} $	$ \begin{array}{r} -1 \\ -1 \\ 0 \\ 1 \\ 1 \end{array} $		$ \begin{array}{r} -1 \\ -1 \\ -1 \\ -1 \\ 0 \\ -1 \end{array} $	$ \begin{array}{r} 0 \\ -4 \\ 2 \\ 1 \\ 0 \\ 3 \\ -1 \end{array} $	

 1 l = increase; 0 = unchanged; -1 = decreased. CPA = sum of classification for CP1, CP2, CP3, CP5. Source: SOEC-Visa, IFO calculations.

the sensitive industries. This is not only shown by the large share of employment allocated to areas of production with a pronounced German competitive edge in Europe. German companies often succeeded in improving their competitive position even in sectors in which they are relatively weak.

However, this bright picture is shadowed by a few clouds. In computers, office automation and aerospace equipment the German competitive position is weak and has deteriorated (Table 4). Compared with the 'standard' of the other German 'engineering-based' industries the performance of these industries could even be described as catastrophic. Taking into account the trend towards integration of information and communication technologies, the persisting German weakness in information technology is worrying because it might endanger the future position in telecommunications. This industry also performs less well than the other German engineering industries. During the 1980s, however, the position of the German companies has improved slightly.

It is also important to note that the third-country trade performance (CP3) has deteriorated in some strong areas of German manufacturing during the 1980s (Table 4). Market shares in the domestic and in foreign markets were lost to competitors from East Asia and especially Japan in the following industries:

- 322 Machine tools
- 351 Motor vehicles
- 342 Electric motors, generators, transformers
- 346 Electrical household appliances

If one also takes into account the strong competitive position of Japanese companies in information and communication markets (for details, see Gerstenberger, 1988, p. 9 f.) the message of these findings is clear. The main challenge for the strong sectors of German manufacturing will not be the completion of the internal market. It will continue to be the technological challenge from Japan and partly from the United States of America. Because of the clear-cut interindustrial specialization within Europe the global impacts of the 1992 liberalization will even partly depend on the ability of the German companies to cope with this challenge. On the basis of the IFO patent statistics, an evaluation of the chances of the European champions from Germany to succeed in the technological race in the engineering-based industries is possible. This would, however, extend the scope of this study.

The gains for German suppliers in lines of production in which German manufacturing was traditionally not specialized may be welcome from an employment point of view. It cannot be excluded, however, that these gains in market shares do not reflect new comparative advantages but were simply induced by the persistent trend towards a devaluation of the Deutschmark in real terms against the other EC currencies since the implementation of the European Monetary System. The growing trade imbalances with the EC partner countries, partly associated with this real devaluation, can not continue forever. Therefore, this trend of the 1980s towards German gains in non-specialities cannot be extrapolated into the 1990s.

5. Dynamic adjustments

In this section, the results of recent IFO surveys are presented. They complete the analysis of the competitive position of German industries in two ways. Firstly, the advantages and disadvantages of Germany as a location for industrial production are discussed in order to see if Germany could attract foreign direct investment or, alternatively, if German firms could move production capacity to other EC countries. Secondly, the planned reactions of companies to the challenge of the internal market are described to shed some light on their possible dynamic adjustments.

5.1. Germany as a location for manufacturing

The analysis of the competitive position of German industries showed the favourable position of German-based suppliers with respect to their European counterparts. Consequently Germany might be a good location to expand industrial production and to establish new industrial companies in order to meet the opportunities of the large internal market of the EC. Taking into account the decisions of Japanese companies, which concentrate their direct investments on the United Kingdom and Spain to build up an EC production base, this has to be questioned. The following pages deal with this topic using the results of an IFO survey realized in the summer of 1988.

This survey was carried out in manufacturing industry and asked for the properties of Germany as a place for industrial production. The questionnaire was answered by 1 800 companies accounting for one quarter of the total employment in manufacturing industry (for details, see Ruppert, W. (1989) p. 22 f.). The companies evaluated advantages and disadvantages of an industrial plant in Germany compared to manufacturing in other areas of the industrialized world according to 21 criteria. The criteria can be divided into factors characterizing the general environment of industrial companies and factors describing the cost situation of a production unit in Germany.

5.1.1. Evaluation of the general business environment

The evaluation of the general environment for industrial production shows Germany as a place with clear-cut advantages and disadvantages. The qualifications of the labour force, i.e. the German education and training system, the public infrastructure (energy, transportation and communications networks), the well-developed forward and backward linkages (nearness of markets, established interindustrial relations) and political stability, are the strong points of Germany (Graph 4a). On the other hand, in the eyes of the companies, Germany seems to be an overregulated place with high levels of business taxation, where less subsidies and other types of financial backing (industrial policies) are given to industry compared with other countries. The evaluation does not differ strongly with respect to EC competitors, competitors from the Far East and those from North America.

The evaluation of the general properties of Germany as a location for manufacturing does not differ dramatically according to different types of producers (Graph 4b). It is interesting to note, however, that producers of basic materials and of food and beverages have more business-minded trade unions, but suffer from a higher burden concerning regulations. The latter reflects the fact that government measures to avoid environmental pollution and to protect consumers are concentrated on these industries.

It is not difficult to understand why companies wish to have the best environment with respect to all relevant factors for their business in order to successfully meet the challenges of international competition. But there exist trade-offs between the different factors of production. For example, an advantage concerning the education and training system and the public infrastructure must be associated with a disadvantage with respect to the tax burden, as the supply of these public goods and services is financed by taxes in Germany. Political stability might have a price, which has to be paid in the form of a higher burden in terms of social contributions and labour regulations.

5.1.2. Evaluation of the relative costs of production

Concerning the cost situation of manufacturing, industrial companies saw more disadvantages in producing in Germany (Graph 5a). The higher level of labour productivity and the greater motivation of the employees do not outweigh higher energy prices, lower capacity utilization due to less production time and less hours worked by the employees, and higher wages and higher social contributions in Germany. Compared to competitors from the Far East (notably Japan), no advantage concerning cost factors is seen at all. Instead, compared to these other producers, the unit costs of production in Germany are judged to be higher. In particular, producers of durables and non-durables often complain about the disadvantages in unit production costs compared to those of foreign competitors (Graph 5b).

Concerning the relative position, in terms of unit production costs, there might be a bias in companies' perceptions: they are always afraid that foreign competitors can produce at lower costs. Furthermore, companies do not always take into account that the exchange rate would adjust to general disequilibria in foreign trade caused by differentials in unit production costs between the average of all companies. Taking into account the fact that during the 1980s German companies managed to win market shares even in traditionally 'weak' areas of German manufacturing, the complaints about cost disadvantages seem to be exaggerated anyway.

5.2. Reactions planned by industrial companies to the challenge of the internal market

Because of these problems, the results of the survey on the merits and shortcomings of Germany as a place for manufacturing cannot be interpreted as a hint that an exodus of German companies to the other more-promising EC countries can be expected. Decisions concerning the future allocation of production depend on the weights given to the different pros and cons of having a plant in Germany by the individual companies. In the case of a decision on which region to expand or to move capacities, the level of production costs within different international locations would certainly be analysed in detail for the individual case. Surveys of planned reactions of companies to the challenge of the internal market might shed some light on the outcome of these evaluations. The following results are based on the answers of 1 400 companies to a survey spanning most industries of manufacturing in mid-1988 (for details, see Penzkofer, 1989).

5.2.1. Plans concerning production

Three quarters of the participating companies saw a necessity to adjust business strategies to meet the opportunities and risks arising from the completion of the internal market in 1992. Changes in the area of production location were most often envisaged. Half of all companies (i.e 75% of the companies feeling a challenge) found it worthwhile to defend the existing location in Germany and planned measures to automate and rationalize existing capacities to prepare for the intensified competition (Graphs 6a and 6b). Twenty per



GRAPH 4: Pros and cons of production in Germany - General factors

Source : Survey by IFO Institute (1988).



cent of the companies aimed at improving their competitive position by cooperating with other companies from EC countries in the field of production. The share of companies planning to move parts of their production capacity to other EC countries (14%) was only slightly higher than the share of companies preparing to expand capacities in Germany in order to meet the opportunities offered by the internal market.

Compared with the previous analysis, these results suggest that Germany is a better location for manufacturing. At least there is no indication of an exodus of German companies. Taking into account that the propensity to expand capacities has increased significantly within German manufacturing industry since mid-1988, a repetition of the survey today would probably result in even more votes in favour of manufacturing in Germany. According to the IFO investment survey more than 46 % of manufacturing companies (weighted by turnover) are actually planning to expand capacities in 1989 compared to only 27 % in autumn 1988 (for details, see Neumann, 1989).

Within manufacturing industry the planned reactions differ strongly from industry to industry. Graph 6a shows the results for some industries with a German competitive position below average, Graph 6b for the strong German sectors. There is a clear trend to defend especially in the strong areas. In the durables-producing industries, the share of companies prepared to either defend existing capacities by rationalization strategies or to expand capacities in Germany is higher than in the other industries. In the car industry, in instrument engineering and especially in the clothing and textiles industries the propensity to move capacities to other EC countries is pronounced. In these sectors the southern, lower-wage EC countries (especially Spain and Portugal) are attractive for certain lines of production.

The cases of the stone and clay industry and the processing of food and beverages sector are of special interest, because both industries might be particularly affected by the liberalization.

The German companies of the stone and clay industry did not perceive a special challenge in mid-1988: the low share of companies planning to automate/mechanize reflects mainly the fact that only 44 % of all stone and clay companies felt a need to react to Europe 1992. The producers of food and beverages are on the other hand very self-conscious of the need to meet the perceived challenges of the internal market by active strategies. The balance between companies planning to move to other EC countries and those remaining in Germany is strongly positive. The propensity to cooperate with other European companies is high.

5.2.2. Plans concerning R&D

The planned reactions to the completion of the internal market concerning R&D capacities were even more favourable towards location in Germany. The share of companies planning to create additional R&D capacity in Germany is far greater than the share planning to create additional capacities in other EC countries (Graphs 7a and 7b). Furthermore, in most industries, companies are more often looking for R&D collaborative efforts within Germany in order to meet the challenges than with partners from other EC countries. This is also true for the small and mediumsized companies (Graph 8). Only the companies with more than 1 000 employees prefer cooperating with EC partners. The fact that this preference is especially pronounced in electrical engineering points to the conclusion that this might be influenced by the European R&D programmes (Eureka, Jessi).

5.2.3. Conclusions concerning employment

On the basis of the sources analysed the effects of the completion of the internal market on the location of industrial production in Germany will be differentiated. In production areas where wage costs play a decisive role for competitiveness, parts of the existing capacities will be moved to lower-wage EC countries. But generally the companies prefer to defend the German production site by rationalization investments. The propensity to strengthen the competitiveness of the company by cooperating in production with EC partners is pronounced in all industries. Whereas the first two strategies would cause a reduction in the number of German employees of the companies, the latter would imply only a reorientation of the labour force within the companies.

However, in the strong areas of German manufacturing industry, in 1988 a significant share of companies were already planning to increase German production capacities in order to meet the opportunities offered by the large European market. Also companies in other industries planned to use Germany's comparative advantages concerning education, training and R&D infrastructure by expanding R&D capacities. The ultimate aim of this strategy is to improve the competitiveness with respect to product quality and innovativeness. Therefore, the internal market will further stimulate the trend in German manufacturing industry to specialize in know-how intensive lines of production.

Taking into account the fact that the propensity to expand capacity in German manufacturing industry has increased








171







considerably since mid-1988, the stimulatory effects of the internal market on employment are without doubt stronger than the survey shows. Consequently, on balance, there is no evidence for expecting pronounced losses in employment in Germany. As the internal market stimulates capital expenditures for modernization in all EC countries and the German manufacturing industry specializes and has a competitive edge in producing these products, there is a good chance that German employment in manufacturing will benefit from the completion of the internal market.

Bibliography

Buigues, P. and Ilzkovitz, F. (1988a), 'The sectoral impact of the internal market', Document II/335/88-EN.

Buigues, P. and Ilzkovitz, F. (1988b), 'The single market —Implications for Belgian industry', Document II/420/88-EN.

Emerson, M. et al. (1988), 'The economics of 1992—An assessment of the potential economic effects of completing the internal market of the European Community', European Economy No 35.

Gerstenberger, W. (1988a), 'Der EG-Binnenmarkt: Die sektoralen Anpassungszwänge', Vortrag auf der IFO-Tagung 'EG-Binnenmarkt 1992', Munich.

Gerstenberger, W. (1988b), 'La compétitivité de l'industrie allemande', *CEPII: Economies nationales*, pp. 9-30.

Gerstenberger, W. (1989a), 'The sectoral impact of the internal market', Report No 1, Munich (internal paper).

Gerstenberger, W. (1989b), 'The sectoral impact of the internal market', Report No 2, Munich (internal paper).

von Hayek, F. A. (1975), 'Die Anmassung von Wissen', Ordo, BD. 26, pp. 12-21.

Neumann, F. (1989), 'Lebhafte Industriekonjunktur begünstigt auch Erweiterungsinvestitionen', *IFO-Schnelldienst*, No 17/18, Munich.

Penzkofer, H. (1989), 'Unternehmensstrategie und europäischer Binnenmarkt', *IFO-Schnelldienst*, No 4, Munich.

Ruppert, W. (1989), 'Standort Bundesrepublik im Urteil des verarbeitenden Gewerbes', *IFO-Schnelldienst*, No 4, Munich.

Greece

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Contents

Intro	duction	177
1.	The sensitive sectors in Greece	178
1.1.	Non-tariff barriers to trade	178
1.2.	Identification of the sensitive industries	178
1.3.	Weighting of the sensitive sectors	180
2.	The competitive position of the sensitive sectors	181
2.1.	Strong trade performers	181
2.2.	Sectors with vulnerable trade performance	182
2.3.	Export specialization	184
2.4.	Extra-Community trade relations of Greece	184
2.5.	Static competition indicators	187
2.6.	Dynamic competition	187
3.	Medium-term perspectives: behaviour of firms	190
3.1.	Merging process	190
3.2.	Economies of scale	192
3.3.	Technical inefficiency	192
3.4.	Management information systems and management quality	192

Annexes

1.	Sectors omitted from the list of the 40 sensitive sectors	193
2.	Market demand growth of the sensitive sectors	194
3.	Details of questionnaire	195
4.	Main defensive measures in domestic trade policy	199
Bibl	iography	200
Sou	rce of data	202

Source of data

List of tables

1.	Non-tariff barriers on Greek external trade in the case of 45 sensitive products	179
2.	Non-tariff barriers on Greek intra-EC trade relations	180
3.	Classification of sensitive sectors according to the level of non-tariff barriers	181
4.	Trade performance. Intra-Community export/import ratio (X/M) specialization index (SI)	181
5.	Strong and vulnerable sectors	182
6.	Static indicators I	185
7.	Static indicators II	186
8.	Dynamic competition indicators I	187
9.	Dynamic competition indicators II	188
10.	Static and dynamic competitiveness	189
11.	Some examples of mergers and acquisitions in Greece since January 1989	191

Graph

1.	Position of Gre	ek industries ad	cording to the	static competiti	on indices	184
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Introduction

The structure of the Greek economy seems more complementary than competitive to the other Member States of the Community. In fact, this particularity is reflected *inter alia* by its intra-Community trade relations and more precisely by its trade balance in manufactured products. Since 1981, the relatively high increase in Greek intra-Community industrial imports with respect to exports, expressed by a continuous increase in the rate of penetration¹ have implied a strong trade creation effect (and more precisely a positive consumption effect). However, during this process, the total trade deficit has deteriorated.

As for extra-Community trade, the corresponding import penetration rate increased until 1984,² but a relative decline followed. Thus the trade diversion effect is not so clear. On the contrary, during the years of Greece's adhesion to the Community, an 'external trade creation' as defined by B. Balassa (1976) has occurred. Since 1981, the only country with which a net decline in extra-Community imports has arisen is the USA. The appreciation of the dollar explains this development rather than the country's entry to the European Communities.

1992 means a new adjustment process for the Greek economy.

The abolition of technical trade barriers would potentially affect consumption products and some intermediate ones. But the major group of capital-intensive commodities, which are most protected by non-tariff barriers in the other Member States are of secondary importance in the case of Greece.

The structure of Greek external trade indicates the complementarity of the Greek economy within the European market, by also explaining its relative openness to intra-Community imports. In fact, intra-Community Greek exports of manufactured products represents almost 68 % of its total intra-EC exports. This percentage is inferior to the Community's average as well as to the percentage of Member States with the same level of development.

The Greek economy is also characterized by a trade deficit in manufactured products in its intra-Community trade relations, which, in relative terms, is the highest among the 12 partners.³

A second indicator that emphasizes the aforementioned characteristics is related to the ratio of manufactured intra-Community imports to internal demand, which is superior to the Community average.⁴

Meanwhile a more representative description of the trade characteristics is given by the structure of intra-EC exports and imports. More precisely, Greek exports to the Community consist of many consumer goods, fewer intermediate and finally a small quantity of capital goods. The following sectors account for 70 % of intra-EC exports: agricultural products, food products and textiles/clothing. In contrast, the greatest part of Greece's intra-Community imports is accounted for by capital goods.

This *sui generis* state points out that Greek external commercial relations are better explained by traditional trade theories than by recent developments, based on the concept of dynamic comparative advantage related mainly to technology and economies of scale (M. V. Posner, 1961; G. S. Hufbauer, 1966; S. R. Vernon, 1966; D. B. Keesing, 1967). The moderate level of intra-industry trade (A. Jacquemin, A. Sapir, 1986; D. Mardas, 1986) as well as the low intensity of research and development (R&D) expenditure in industrial production (OECD, 1985) and exports also manifest this thesis.

As for intra-industry trade, Greece mainly exports and imports different commodity groups with respect to capital/ labour intensities as well as to final uses. In contrast, the majority of the other Member States export and import simultaneously a great number of equivalent products indicating thereby the high volume of their intra-industry trade. The significant trade deficit in major industrial sectors indicates the low level of export competitiveness, illustrating therefore implicitly Greece's technological backwardness and its weakness in creating a new export potential.

In this research, the internal market effect on 45 sensitive products of the Greek economy is examined. Firstly, the products in question are selected among 118 industries classified according to the NACE code and criteria related to non-tariff barriers.

¹ In 1982, intra-Community import penetration in terms of industrial products was equal to 0,258. In 1983, it was equal to 0,289 and in 1986 and 1987, it reached 0,352 and 0,379 respectively.

² In 1982, the extra-Community import penetration rate in terms of industrial products was equal to 0,132, in 1984 0,158, in 1986 0,132 and in 1987 0,131.

³ And in absolute terms, one of the highest.

⁴ The average import penetration rate for the Community of Nine is 17,6 % whereas the Greek import penetration rate is almost twice as high.

The second section deals with the trade performance of these 45 industries under a non-tariff barrier regime. The analysis is based on export/import ratios, growth demand and Balassa's specialization index (1965).

Thirdly, there is an analysis of the expectations concerning the sensitive industries and strategies towards 1992.

1. The sensitive sectors in Greece

1.1. Non-tariff barriers to trade

Trade policy constitutes an additional element following on from Greece's intra-Community trade particularities. For 30 years import barriers have managed to protect the labourintensive sectors (such as textiles, clothing, paper, wood, furniture, leather industries). In fact, the almost inexistent protection of capital-intensive commodities (with the exception of some consumer goods) did not favour the domestic infant industries which produce these goods. Meanwhile, there were a number of tariff measures, affecting non-competitive imports which were aimed at financing budget deficits rather than encouraging a new resource allocation in favour of capital/technological products. New policy moves especially with respect to non-tariff barriers have presently been restrained (after 1989) to intra-Community trade. However, they affect some extra-Community exports.

Taking into consideration the particularities of the Greek economy, the sample of its protected products within intra-Community trade is relatively different from those which have been identified at the Community level. The chosen industries quoted in Table 1 are classified according to the intensity of non-tariff barriers used by the domestic trade policy-makers.¹

As far as non-tariff barriers are concerned some peculiarities of the Greek economy can be mentioned.

The opening up of public-procurement markets will only affect a limited number of sectors. In fact, public-procurement contracts tend to be satisfied by imports in those sectors where the latter account for a significant proportion of sales. This is the case for telecommunications where sales to the public sector account for 37 % of total output and where 54 % of public contracts are met by imports.

Technical standards, contrary to the other Member States, are too limited or they do not exist for non-domestically produced imports (e.g. machinery, electronics, etc.) or within globally orientated sectors (e.g. electrical lamps). Prohibitive norms are concentrated on traditional sectors (biscuits, beer, leather).

The administrative procedures (these require approval by the Bank of Greece, and a certificate of imported prices) are presently limited to leather products and are still significantly affecting extra-Community imports. The fiscal barriers (specific taxes on imports), contrary to the practice in the years before 1989, affect a restricted number of imported products particularly the imports of motor car vehicles, some electric products, distilled alcohol imports and beers, etc., as well as some qualities of glass/glassware products and finished metal goods.

Export subsidies² aim to enhance the growth of those few sectors performing well in export markets, in preference to the less competitive industries. In 1985, 52 % of subsidized exports concerned only six major groups of products: yarn, knitted products, clothing/footwear, woven products, carpets and iron-steel-cooper products.³ But there are also subsidies for exports of chemicals, ceramics, plastics, some vehicles and electrical products.

1.2. Identification of the sensitive industries

The sensitive domestic industries, reflecting the particular structure of the Greek economy, are relatively different to those identified at the European level. The openness of the public sector to highly technological and capital-intensive products as well as to some intermediate products tends to be the main explanation for this situation. Some sectors have been eliminated from the list of the 40 sectors identified at the Community level and other sectors have been added to the list. Finally, 45 sectors have been identified as sensitive for the Greek economy (see Table 2).

Fifteen sectors were removed from the list of 40 sectors identified at the European level. Included within these 15 sectors were two from the high-technology public-procure-

¹ See Annex 4 for more remarks concerning the defensive measures used in the context of domestic trade policy.

² The export subsidies in the context of intra-Community trade will be reduced to zero level progressively according to the following schedule and according to Circular 11/14.1.1987 of the Bank of Greece. First reduction on 1.1.1987, second on 1.1.1988, third on 1.1.1989 and the last one on 1.1.1990.

³ According to the Currency Committee Decision 1574/70 amended by Decision 350/82.

Non-tariff barriers on Greek external trade in the case of 45 sensitive products

NACE code	Sector	Public procurement	Norms	Fiscal barriers	Exports subsidies	Non-tariff barriers on extra- EC trade relations	Global score
222	Steel tubes	0	0		1	1	2
224	Prod. of non-ferrous metal	0	1		1		2
247	Glass & glassware	0		1			1
248	Manuf. ceramics	0	2		1	0	3
251	Basic chemicals	2	0		1		3
255	Paints, varnishes & inks	0	1				1
256	Chem. prod. for ind. agr. use	2			1	0	3
257	Pharmaceutical prod.	0			1		1
314	Structural metal prod.	1	1				2
315	Boilermaking	2	1				3
316	Tools & finished met. goods	1		1			2
325	Manuf. of plant mines	2				0	2
328	Manuf. of other machinery	1					1
341	Insulated wires & cables	2			1		3
342	Electrical machinery	2				1	3
343	Elec. appl. ind. use	1					1
344	Telecommunications equip.	2	0			1	3
346	Electric appliances	0		1	1		2
347	Electric lamps	2					2
351	Motor vehicles	2	0	2		0	4
352	Manuf. of motor vehicles	2					2
362	Manuf. of railway roll.	2					2
411	Manuf. of veg. & oils	1				1	2
412	Slaughtering prep. meat	1	1				2
413	Manuf. of dairy products	0	1			1	2
417	Manuf. of spaghetti	0	1				1
419	Bread & biscuits	0	1				1
424	Distilleries & alcohol	0		2			2
427	Brewing and malting	0	2	1		0	3
428	Soft drinks	0	1				1
431	Wool industry	0			2		2
432	Cotton industry	0	0		1		1
436	Knitting mills	0			2		2
438	Carpets & floor covers	0	0		1		1
441	Leather tan. and fin.	1	1	0		0	2
442	Leather industry	2		0		1	3
451	Footwear	2			2		4
453	Clothing & acc.	2			2	0	4
455	Household textiles	2			1		3
467	Wooden furniture	1					1
471	Pulp & paper manuf.	1	1			0	2
472	Processed paper	1				0	1
481	Rubber prod.	1	1			0	2
483	Plastics proces.	1	0		1	0	2
494	Manuf. of sports goods and toys	1				0	1

Non-tariff barriers on Greek intra-EC trade relations

NACE	Sector	
code		

High level

- 248 Manuf. ceramics
- 251 Chemical products
- 256 Chem. prod. for ind.-agr.
- 315 Boilermaking
- 341 Insul. wires/cables
- 342 Electrical machinery
- 344 Telecommunications
- 351 Motor vehicles
- 427 Brewing, malting
- 442 Leather products
- 451 Footwear
- 453 Manuf. clothing
- 455 House. textiles

Moderate level

- 222 Manuf. steel tubes
- 224 Non-ferrous metal
- 247 Manuf. glass
- 255 Colours, varnishes, paints
- 257 Pharmaceutical products
- 314 Metal construc.
- 316 Tools, metal products
- 325 Manuf. plant mines
- 328 Manuf. other machines
- 343 Elec. appl. indus. use
- 346 Electric house. appl.
- 347 Elec. lamps
- 352 Manuf. motor vehicles
- 362 Manuf. railway roll.
- 411 Manuf. veg. and oils
- 412 Slaughtering
- 413 Manuf. diary prod.
- 417 Manuf. spaghetti
- 419 Proc. pres. fruit
- 424 Distilling alcohol
- 428 Soft drinks, water
- 431 Wool industry432 Cotton industry
- 436 Knitting industry
- 438 Manuf. carpets
- 441 Tanning dress leather
- 467 Wooden products
- 471 Manuf. pulp paper
- 472 Paper products proc.
- 481 Manuf. rubber
- 483 Plastic products
- 494 Toys, sports items

ment markets, namely the computer and surgical equipment industries. In fact, these leading industries are practically inexistent in Greece and thus are not protected. Hence the opening up of public-procurement markets will not, for example, affect the Greek computer industry in as much as all public contracts in this field are met by imports.

Of the other excluded sectors, some are omitted due to their insignificant size in Greece. This is the case of most mechanical engineering sectors and for photographic laboratories. Other sectors are not included because they are not considered as being protected by non-tariff barriers. These include the aeronautical, shipbuilding, electrical engineering and wine and chocolate industries. Annex 1 lists the 15 omitted sectors.

Twenty sectors which are not considered as sensitive at the Community level could be directly affected in Greece by the creation of the single European market. Among these, only the leather goods industry features within the group of industries protected by high non-tariff barriers. This industry is protected from competition from extra-Community trade by significant administrative (quality) controls to which imports are subjected prior to being sold on the Greek market.

The remaining 19 sectors which have been added to the list of those sectors protected by medium non-tariff barriers consist of the steel, non-metallic mineral (aluminium), metallic building materials, certain subsectors of the food industry (oils), areas of textiles and the paper and plastics industries. These industries are protected in Greece by technical standards (aluminium, metallic building materials), fiscal barriers (spirits) or are supported by export subsidies (steel, vegetable oil, hosiery and plastics).

Finally, it is interesting to note that certain industries are relatively more protected in Greece than on average within the Community as a whole. This is true for the highly labourintensive sectors such as textiles, clothing and footwear industries where exports are subsidized. In contrast, certain more capital-intensive and hi-tech industries are relatively less protected in Greece, e.g. the railway equipment and pharmaceutical industries.

1.3. Weighting of the sensitive sectors

The 45 sensitive sectors represent 56,7 % of value added and 61,5 % of employment in Greek industry. Their weight is relatively greater than that of the 40 sensitive sectors identified at the Community level which suggests that the Greek economy will be particularly affected by the completion of the single European market.

In Table 3, the 45 sensitive sectors are classified into two groups according to the degree of non-tariff barriers that affect them. In terms of industrial value added, the weight of sectors protected by high non-tariff barriers is lower in Greece than for the Community as a whole whereas the opposite holds if the weighting is measured in terms of employment. This strengthens the conclusion drawn in the previous section that the highly labour-intensive sectors are protected to a relatively greater degree in Greece.

Table 3

Classification of sensitive sectors according to the level of non-tariff barriers

		% of value added	% of employment
High NTBs		15,9	19,4
Medium NTBs		40,8	42,1
	Total	56,7	61,5

2. The competitive position of the sensitive sectors

In this section, the trade performance of the 45 sensitive sectors is examined, using the average intra-Community export/import (X/M) ratio (1985-87), the evolution of X/M from 1981 to 1987 and the specialization index (see Table 4).

From the 45 sectors, eight industries have shown a strong trade performance, representing 15,9% of the total value added and 19,7% of total employment, 37 industries have shown a vulnerable trade performance representing 40,8% of total value added and 41,8% of total employment (see Table 5).

As for these vulnerable industries, their level of exports, even under a non-tariff barrier regime, was much lower than that for imports from the other partners. In some cases they did not even reach 10 % of the level of imports from the European Community.

2.1. Strong trade performers

The eight industries that performed well in terms of intra-Community trade consisted of two industries producing intermediate goods, and six manufacturing consumer goods. It is worth noting that five out of the latter six industries,

Table 4

Trade performance. Intra-Community export/import ratio (X/M) specialization index (SI)

NACE code	Sector	X/M^1	▲ (X/M) ²	SI1
	Vulnerable X/M < 90			
222	Manuf, steel tubes	6	2	9
247	Glass, glassware	2	3	4
248	Manuf. ceramics	17	4	62
251	Basic chemicals	1	0	6
255	Paints, varnishes & inks	1	1	5
256	Chem. prod. ind. agr. use	9	- 42	40
257	Pharmaceutical prod.	13	13	53
314	Metal construction	1	-2	1
315	Boilermaking	1	1	3
316	Tools & finished met. goods	14	1	38
325	Manuf. plant mines	3	4	5
328	Manuf. other machinery	5	0	12
342	Electrical machinery	26	7	45
343	Elec. appl. ind. use	9	7	21
344	Telecommunications equip.	18	-10	30
346	Electric house. appliances	4	5	14
347	Electric lamps	3	-1	5
351	Motor vehicles	4	1	0
352	Manuf. motor vehicles	2	4	3
362	Manuf. railway roll.	15	24	7
411	Manuf. veg. & oils	35	-6	64
412	Slaughtering, prep. meat	2	1	25
413	Dairy products	3	- 2	18
419	Distillarias & alashal	20	25	20
424	Brewing and malting	4/	- 14	225
427	Soft drinks	20	12	0
420	Cotton industry	42	- 8	244
432	Carpets & floor covers	56	- 74	138
441	Leather tan and fin	13	- 28	49
442	Leather industry	38	-11	37
467	Wooden furniture	5	4	2
471	Pulp & paper manuf.	2	4	3
472	Paper products	21	10	56
481	Rubber prod.	17	8	36
483	Plastics proces.	10	- 19	28
494	Manuf. sports goods and toys	19	1	24
	Strong performers X/M > 110			
224	Prod. of non-ferrous metal	261	- 5	289
341	Insulated wires & cables	178	258	208
417	Manuf. spaghetti	138	-150	293
431	Wool industry	213	-176	1 280
436	Knitting mills	727	319	1 187
451	Footwear	193	- 49	154
453	Clothing & acc.	558	-4	656
455	Household textiles	425	- 295	439

Average from 1985 to 1987.
Change between 1981-87.

Strong and vulnerable sectors

	Number of sectors	% of total value added	% of employment
Strong sectors	8	15,89	19,72
Vulnerable sectors	37	40,78	41,78

belong to the clothing/footwear industries and only one to the food-processing industry (spaghetti). The non-ferrous (aluminium, copper, zinc, etc.) industry and the insulated wires and cables sector, are the only intermediate goods activities which performed relatively well and they belong to the traditional sectors of Greek manufacturing (this is particularly true for the aluminium and copper industries).

A slight reduction in the exports/imports ratio has been observed during the examined period for the non-ferrous industry while for cables, a tremendous increase has occurred. This latter evolution could be explained by the strong demand in European markets, which increased Greek intra-Community exports.

The performance of the consumer goods sector was good, especially for the clothing industry. The activities belonging to the above sector have achieved a good export performance during the 1980s. Thus, the wool industry achieved a relatively high coverage ratio, but this ratio has deteriorated since 1981. Poor price competitiveness and slow demand growth in Community countries can be blamed for this deterioration. The intra-Community exports/imports ratio has improved radically during these years for knitting mills and has remained almost constant for the clothing industry. The export subsidies (aiding export performance; in some cases accounting for almost 30 % of costs up until 1986) have allowed these industries to achieve very good performances.

In footwear and household textiles, the intra-EC coverage ratio deteriorated strongly between 1981 and 1987 from 2,12 to 1,63 in the case of footwear and from 6,51 to 3,56 for household textiles. This was in spite of good price competitiveness within these industries. This deterioration is worrying in the context of 1992 and one can wonder if these industries could respond to the challenge of increased competition.

The only food processing industry with a trade surplus was the spaghetti industry, but the trend is not encouraging since the coverage ratio dropped by more than 100 % during these years. The ratio in question dropped from 2,69 to 1,19 (from 1981 to 1987) and this reduction is continuing a declining trend.

2.2. Sectors with vulnerable trade performances

Thirty-seven out of 45 industries have not performed well according to their intra-Community exports/imports ratio, during the current decade. However, 25 industries have improved according to the evolution of this ratio over this period.

The 37 industries belonging to the category of weak trade performers consisted of 12 consumer food industries and 25 industries belonging to the capital or intermediate goods sectors. More specifically:

Food-processing activities had an export achievement ranging from almost 1,5% of the level of imports for slaughtering-preparation and preservation to 35% for vegetable oils. In these activities, the exported products—notably vegetable oils—are heavily subsidized. The brewing and soft drinks industries have improved their exports relative to imports, by 2,3% for the brewing sector and 13,3% for soft drinks. On the other hand, exports of dairy products and vegetables and oils have lost ground relative to imports by 1,9% and 6% respectively during the period under review, even though they faced an expanding market. This was because the prices charged for these products were higher than the Community average.

The leather and textile industries had a coverage ratio between 13 and 56. The former figure corresponded to the leather industry. The leather products, cotton and carpet industries respectively had coverage ratios of 38, 42 and 56. These four industries are within the traditional sectors of the Greek economy. Despite their price competitiveness, especially for the cotton industry, their poor performance can be explained by the low level of demand growth at the Community level.

The wooden furniture and plastic processing industries had a very low coverage ratio. The furniture industry has achieved a good price performance but the market environment did not favour growth of this industry.

Industries that produce intermediate and capital equipment goods have improved their exports/imports ratio since 1981 with the exception of six which have achieved an exports/ imports deterioration (metal products, other chemicals, telecommunications equipment, cotton, leather industry and plastics processing industries). Within the motor vehicle industries the cars and trucks industry benefited from relative expansion even though the coverage ratio was very low. This evolution could be attributed to the market structure for motor vehicle products in the Greek economy. These industries have turned their interest towards the coverage of both the private and public domestic markets. In fact, public purchases reached 21 % of total domestic production of motor vehicles.

The paper industry achieved a relative increase in exports from 1981 to 1987. However, the absolute levels of the exports/imports ratio are completely different for the pulp and paper manufacturing and processed paper industries. The reason for this divergence is that Greece is a traditional importer of pulp but a traditional producer of processed paper.

The steel industry is a sector of declining importance within the Community. Despite this fact, an increase in its coverage ratio has been noticed. But this increase in the average ratio is caused by reduced imports rather than through increased exports.

The metal products industry such as the manufacturing of metal products, boilermaking and tanks and the manufacturing of tools and finished metal goods could not be characterized as being relatively successful in trade terms.

The electrical machinery/equipment, electrical appliances for industrial use, electrical lamps, telecommunications equipment and electrical household appliance industries have increased their-very low-coverage ratio with the exception of the telecommunications equipment and the electric lamps sectors, which suffered a rapid reduction of respectively 10,4 % and 1 % during these years. This former ratio resulted mainly from the rapid expansion of telecommunications equipment imports, which increased by more than 50 % while exports remained constant (even though telecommunications equipment is a rapidly expanding industry). The State-owned telecommunications company has made important investments in order to replace old equipment with high-technology equipment. Greek manufacturing has had as its main objective, the satisfaction of this expanding domestic demand as measured by public purchases.

The chemicals industry is one of the key sectors within Greek manufacturing. The vast amounts of capital invested in this sector, during the past years, demonstrates this significance. The activities in this industry that have been classified as sensitive were basic chemical products, chemical products for industrial-agricultural use, paints-varnishes-inks and pharmaceutical products. All these industries significantly increased production during this decade. Their trade performance, however, was not as good as their production performance and only the pharmaceuticals industry experienced an increase in its coverage ratio by almost 13 %. In the pharmaceuticals industry, Greece has incited production through protective measures such as restrictions on or the taxation of finished imports and non-reimbursement of imported products. These import restrictions have led foreign companies to produce locally (97 % of total production is accounted for by foreign-owned companies). However, the elimination of protective measures could have an adverse effect on this industry if foreign companies decide to shift their production to other Member States since Greek plants are often subscale.

Glass, glassware and ceramics are considered also as traditional industries within Greek manufacturing, but their trade performance was poor.

Exports of the alcohol and spirits industry represented almost half of the level of imports and the sector has suffered a rapid decline in its coverage ratio (13,6%). This fall could be attributed to the rapid increase in imports of spirits (caused by the changing habits of Greek consumers), of which Greece is not a traditional producer.

Finally the rubber, sports goods and the railway, rolling stock industries are examined in terms of trade performances. More precisely:

The rubber industry is divided into two subsectors, tyres and industrial rubber (other rubber articles). Greece is a relatively good producer for both the subsectors, having improved its trade performance by 8% during these years and achieving an average coverage ratio of 16,7%. The rubber industry has exhibited relatively good price competitiveness while operating in a stable market and its export performance has been successful.

The growth of the railway rolling stock industry was also relatively successful, as the coverage ratio indicates by its significant increase during the period under review. Greek manufacturers do not produce all the products demanded by the railway industry, but focus on spare parts and to a lesser degree wagons. Public purchases amounted to 19 % of domestic production. The State, however, purchased only 20 % of its product requirements from the domestic industries.

The toys and sports goods industries covered only 19 % of its imports by its exports but its performance has improved slightly during recent years.

2.3. Export specialization

In Table 6 (column 2), the export specialization indices (SI intra) of the various sensitive industries are presented. Thus, out of the 45 industries, 11 have exhibited a strong export specialization (SI > 1,00) and 18 have shown a very low export specialization (SI < 0,2). Furthermore, seven industries that have demonstrated a strong export specialization have improved their position but only three of these have benefited from an expanded market; the remaining four have operated in markets experiencing weak or average demand levels. This fact leads to the conclusion that Greek industry largely became export-specialized in declining sectors (with the exception of three).

Finally, the examination of export specialization indices and the indicators of intra-industry trade leads to an interesting observation. In the four textile industries with the highest export specialization indices (SI > 3,00), the level of intraindustry trade is moderate. In contrast, in the other seven activities, where the export specialization indices are lower than the above limit (but higher than unity (1,00 < SI <3,00), intra-industry trade is exceptionally intensive. As for the remaining 34 activities (where SI < 1,00), with low values in terms of the export specialization index, these are generally characterized by a lower level of intra-industry trade.

These aforementioned different development paths between the four strongest export specialized activities and the other seven sectors confirm the thesis that intra-industry trade is more intensive in activities where the export specialization index is positive but not too high (M. Adler, 1970; K. S. Abd-el-Rahman, 1986).

2.4. Extra-Community trade relations of Greece

In order to establish a more complete picture of domestic industry trade performances, some specific points relating to Greece's extra-Community trade relations are worth noting.

Greece's extra-Community industrial exports and imports respectively represent almost 37 % and 28 % of its total industrial exports and imports. This indicates the strong trade orientation towards the common market.



Static indicators I

NACE	Sector	X/M intra ¹	SI intra ¹	SI prod. ²	X/M extra ^{1, 3}
222	Steel tubes	6	9	163	317
224	Prod. of non-ferrous metal	261	289	235	97
247	Glass-glassware	2	4	56	46
248	Manuf, ceramics	17	62	139	226
251	Basic chemicals	1	6	56	92
255	Paints, varnishes & inks	1	5	52	31
256	Chem. prod. ind. agr. use	9	40	64	63
257	Pharmaceutical prod.	13	53	59	9
314	Metal construction	7	1	92	481
315	Boilermaking	1	3	24	13
316	Tools & finished met. goods	14	38	121	149
325	Manuf. of plant mines	3	5	5	4
328	Manuf. of other machinery	5	12	16	70
341	Insulated wires & cables	178	207	137	475
342	Electrical machinery	26	45	30	41
343	Elec. appl. ind. use.	9	21	32	4
344	Telecommunications equip.	18	30	12	8
346	Electric house. appliances	4	14	180	28
347	Electric lamps	3	5	29	24
351	Motor vehicles	4	0	16	1
352	Manuf. of motor vehicles	2	3	201	510
362	Manuf. of railway roll.	15	7	71	7
411	Manuf. of veg. & oils	35	64	108	498
412	Slaughtering prep. meat	2	25	29	32
413	Dairy products	3	18	55	244
417	Manuf. of spaghetti	138	293	207	6 902
419	Bread and biscuits	26	26	93	1 694
424	Distilleries & alcohol	47	225	86	251
427	Brewing and malting	2	5	147	370
428	Soft drinks	20	9	147	5 742
431	Wool industry	213	1 280	106	58
432	Cotton industry	42	244	598	41
436	Knitting mills	727	1 187	238	1 436
438	Carpets & floor covers	56	138	293	637
441	Leather tan. and fin.	13	49	131	251
442	Leather industry	38	37	29	51
451	Footwear	193	154	102	293
453	Clothing & acc.	558	656	137	561
455	Household textiles	425	439	97	208
467	Wooden furniture	5	2	34	208
471	Pulp & paper manuf.	2	3	64	10
472	Processed paper	21	56	95	59
481	Rubber prod.	17	30	0	39
483	Plastics proces.	10	28	98	129
494	Manuf. of sports goods and toys	19	24	32	20

¹ These indices represent the mean for the period 1985-87.
² This index refers to 1985 — B. Balassa (1985) specialized index built on production data.
³ The too high (X/M) extra ratio in many cases is due to the very low imports from extra-Community countries.

Static indicators II

NACE	Sector	X/M ¹ intra-EC	SI ¹ intra-EC	X/M ¹ extra-EC	SI ² prod.	Total ³
222	Steel tubes	-1	-1	1	1	0
224	Prod of non-ferrous metal	1	1	0	1	3
247	Glass & glassware	-1	-1	-1	-1	-4
248	Manuf ceramics	-1	- 1	1	1	0
251	Basic chemicals	-1	- 1	0	-1	- 3
255	Paints, varnishes & inks	-1	-1	- 1	- 1	-4
256	Chem, prod. ind. agr. use	-1	-1	-1	- 1	-4
257	Pharmaceutical prod.	-1	- 1	- 1	- 1	-4
314	Metal construction	-1	- 1	1	0	- 1
315	Boilermaking	- 1	- 1	- 1	- 1	-4
316	Tools & finished met. goods	-1	- 1	1	1	0
325	Manuf. plant mines	- 1	- 1	- 1	- 1	-4
328	Manuf. other machinery	- 1	- 1	- 1	- 1	-4
341	Insulated wires & cables	1	1	1	1	4
342	Electrical machinery	- 1	- 1	- 1	- 1	- 4
343	Elec. appl. ind. use	-1	- 1	-1	- 1	-4
344	Telecommunications equip.	-1	- 1	- 1	- 1	-4
346	Elec. house. appliances	-1	-1	-1	1	-2
347	Electric lamps	- 1	-1	- 1	- 1	-4
351	Motor vehicles	-1	- 1	-1	- 1	-4
352	Bodies for motor vehicles	-1	-1	1	1	0
362	Manuf. railway roll.	- 1	- 1	- 1	- 1	-4
411	Manuf. veg. & oils	-1	-1	1	0	-1
412	Slaughtering, prep. meat	- 1	-1	-1	-1	- 4
413	Dairy products	- 1	-1	1	- 1	-2
417	Manuf. spaghetti	1	1	1	1	4
419	Bread & biscuits	-1	- 1	1	0	-1
424	Distilleries & alcohol	-1	1	1	-1	0
427	Brewing and malting	-1	-1	1	1	0
428	Soft drinks	-1	-1	1	1	0
431	Wool industry	1	1	- 1	0	1
432	Cotton industry	-1	1	-1	1	0
436	Knitting mills	1	1	1	1	4
438	Carpets & floor covers	-1	1	1	1	2
441	Leather tan. and fin.	-1	- 1	1	1	0
442	Leather industry	-1	- 1	-1	-1	- 4
451	Footwear	1	1	1	0	3
453	Clothing & acc.	1	1	1	1	4
455	Household textiles	1	1	-1	0	1
467	Wooden furniture	-1	- 1	1	- 1	-2
471	Pulp & paper manuf.	- 1	- 1	-1	-1	-4
472	Processed paper	- 1	- 1	-1	0	- 3
481	Rubber prod.	-1	- 1	- 1	-1	-4
483	Plastics proces.	- 1	- 1	1	0	-1
494	Manuf. sports goods/toys	- 1	- 1	- 1	-1	-4

1

If X/M extra-EC, intra-EC < 90 then the corresponding index is -1, if $90 \le X/M$ intra-EC, prod. extra-EC, intra-EC ≤ 110 then the index is 0 and if X/M extra-EC, intra-EC > 110 then the index is 1. If SI intra-EC, prod < 90 then the corresponding index is -1, if $90 \le SI$ intra-EC, prod ≤ 110 then the index is 0 and if SI intra-EC, prod > 110 then the index is 1. The last column entitled 'Total' is the sum of the corresponding four indices. 2 3

Dynamic competition indicators I

NACE code	Sector	▲ intra-EC X/M	▲ intra-EC SI	▲ extra-EC X/M
222	Manuf steel tubes	_7	- 32	- 366
224	Non-ferrous metal	- 1	15	- 18
247	Glass glassware	1	13	-10
247	Ceramics	3	5	61
251	Basic chemicals	0	1	- 4
255	Colours varnishes	0	- 1	- 44
255	Chem indust agric	- 33	-143	-40
257	Pharmaceutical prod	8	23	- 82
314	Metal construction	- 2	-7	- 245
315	Boilermaking	1	1	- 3
316	Metal products	- 1	- 24	-2
325	Manuf plant mines	2	- 1	- 5
328	Manuf other mach	1	-3	3
341	Insul wires & cables	127	125	- 583
342	Flectrical machinery	6	- 21	1
343	Elec appl industrial	1	- 5	1
344	Telecommunications	- 3	- 8	1
346	Electric house appl	2	7	- 27
347	Electric lamps	1	2	1
351	Motor vehicles	2	0	0
352	Manuf motor vehicles	1	2	- 606
362	Railway roll	15	5	6
411	Manuf veg & oils	-10	- 1	- 69
412	Slaughtering prep meat	-1	- 2	- 2
413	Dairy products	- Î	9	- 11
417	Spaghetti industry	-108	-216	-1 575
419	Bread, flour	5	-10	-1925
424	Distilling alcohol	-20	- 24	-100
427	Brewing and malting	0	- 1	-456
428	Soft drinks	9	5	1
431	Wool	-133	-297	-35
432	Cotton	-11	-16	- 51
436	Knitting ind.	257	138	888
438	Manuf. carpets	- 54	-30	103
441	Tanning leather	-14	-14	- 24
442	Leather products	-9	- 7	- 29
451	Footwear	-27	2	-65
453	Manuf. clothing	-9	- 30	325
455	House. textiles	- 244	-354	-4
467	Wooden furniture	3	-1	17
471	Manuf. pulp paper	2	3	- 3
472	Paper proces.	7	10	-10
481	Rubber	5	- 7	22
483	Manuf. plastics	-9	-4	-140
494	Sports and toys	- 3	-11	-2

¹ Imports are almost zero.

The definition of the difference (\blacktriangle) refers to the difference between the mean of the period 1985-87 and the mean of the period 1981-83 for the intra-EC, extra-EC coverage ratio while for the specialization index the difference between the mean for the period 1982-84 is measured.

In 19 sectors, the performance of Greek industries varies between the Community markets and those of third countries (see Table 3). In 16 of these sectors, the extra-EC coverage ratio is greater than unity whereas the balance of intra-EC trade is negative. One finds within this group not only the most capital-intensive sectors, such as the chemicals, metallic building materials, engine and plastic industries but also the food and drink sector and certain areas of the textiles and leather industries which are labour intensive. Only three industries perform better on Community markets, namely the wood, household textiles and non-metallic mineral industries but their performance deteriorated during the 1980s.

2.5. Static competition indicators

In Tables 6 and 7 the indicators of static competition are shown. These indicators are the intra-Community coverage ratio, the extra-Community coverage ratio, the Balassa specialization index (1965), and the production specialization index. The first three indicators correspond to the average values for 1985-87 while the last one refers to the final year.

An aggregate score for these four indicators for each industry has been constructed (algebraic summation) and ranges between -4 and 4.

In this way, a static competitiveness index (SCI) is calculated. Using the SCI (see Table 7, last column), Graph 1 is constructed. Graph 1 gives the competitive position of the reviewed industries according to the SCI (on the horizontal axis) and to the share of industries' employment relative to total manufacturing employment (on the vertical axis).

The employment distribution of the 45 industries with respect to the SCI cannot be characterized as normal. High percentages of employment are concentrated at the extremes -4 and 4 and at the mean. This implies that the positive and negative prospects for employment are almost equally distributed. In addition, according to the SCI criterion, most of the sectors face a negative competitive position.

2.6. Dynamic competition

Tables 8 and 9 give a dynamic representation of the competitiveness indicators studied previously.

When the static and the dynamic indicators are compared—more specifically the coverage ratio—it is clear from Table 10 that the stronger sectors declined in the period under consideration.

Only those sectors which had little impact on the country's trade (all with coverage ratios of less than 25%) showed any improvement.

Dynamic competition indicators II

NACE	Sector	▲ intra-EC X/M ¹	▲ intra-EC SI ²	▲ extra-EC X/M ¹	Total ³
222	Manuf steel tubes	-1	- 1	-1	- 3
224	Non-ferrous metal	0	1	-1	0
24	Glass glassware	0	1	-1	0
247	Ceramics	0	1	1	2
251	Basic chemicals	0	1	0	2
255	Colours varnishes	0	-1	- 1	- 2
255	Chem indust agric	-1	-1	-1	-3
250	Pharmacautical prod	1	1	-1	1
314	Metal construction	1	-1	-1	- 2
314	Boilermaking	0	- 1	- 1	-2
315	Metal products	0	- 1	0	-1
225	Menuf plant mines	0	- 1	0	-1
220	Manuf, plant mines	0	- 1	0	-1
241	Manul. other mach.	0	-1	0	-1
341	Insul, wires & cables	1	1	-1	1
342	Electrical machinery	1	-1	0	0
343	Elec. appl. industrial	0	-1	0	-1
344	Telecommunications	0	-1	0	-1
340	Electric house. appl.	0	1	-1	0
34/	Electric lamps	0	1	0	1
351	Motor vehicles	0	1	0	1
352	Manuf. motor vehicles	0	1	-1	0
362	Railway roll.	1	1	1	3
411	Manuf. veg. & oils	-1	-1	- 1	-3
412	Slaughtering prep. meat	0.	-1	0	-1
413	Dairy products	0	1	-1	0
417	Spaghetti industry	-1	-1	-1	-3
419	Bread, flour	0	1	-1	0
424	Distilling alcohol	-1	-1	-1	-3
427	Brewing and malting	0	0	-1	-1
428	Soft drinks	1	1	-1	1
431	Wool	- 1	-1	-1	-3
432	Cotton	- 1	-1	-1	- 3
436	Knitting ind.	1	1	1	3
438	Manuf. carpets	- 1	-1	1	-1
441	Tanning leather	- 1	- 1	-1	- 3
442	Leather products	- 1	-1	-1	- 3
451	Footwear	- 1	1	-1	-1
453	Manuf. clothing	- 1	-1	1	- 1
455	House. textiles	- 1	- 1	0	-2
467	Wooden furniture	0	- 1	1	0
471	Manuf. pulp paper	0	1	0	1
472	Paper proces.	1	1	- 1	1
481	Rubber	0	-1	1	0
483	Manuf. plastics	-1	-1	- 1	- 3
494	Sports and toys	0	-1	0	-1

If \triangle (X/M intra-EC, extra-EC) < -5% then the corresponding index is -1, if -5% $\leq \triangle$ (X/M intra-EC, extra-EC) \leq 5% then the corresponding index is 0 and, if \triangle (X/M intra-EC, extra-EC) > 5% then the corresponding index is + 1. If \triangle (SI) < 0 then the corresponding index is -1, if \triangle (SI) = 0 then the corresponding index is 0 and, if \triangle (SI) > 0 then the corresponding index is + 1. This last column has been calculated by adding the individual indices of the first three columns.

Static and dynamic competitiveness

		Vulnerable trade performers X/M < 90		Strong trade performers X/M > 110	
▲(intra-EC X/M) < -5%	222 256 411 424 432 438 441 442 483	Steel tubes Chem. indust. agric. Manuf. veg. & oils Distilling alcohol Cotton Carpets Tanning leather Leather products Plastics proces.	417 431 451 453 455	Spaghetti Wool Footwear Clothing House. textiles	
– 5% < ▲(intra-EC X/M) < 5%	247 248 251 255 314 315 316 325 328 343 344 346 347 351 352 412 413 419 427 467 471 481 494	Glassware Ceramics Basic chemicals Colours etc. Metal construction Boilermaking Metal products Manuf. plant mines Manuf. other mach. Elec. appl. ind. Telecommunications Electric house. appl. Electric house. appl. Electric lamps Motor vehicles Manuf. motor vehicles Slaughtering, prep. meat Dairy products Bread Brewing & malting Wooden furniture Pulp, paper Rubber Sports and toys	224	Non-ferrous metals	
(intra-EC X/M) > 5%	257 342 362 428 472	Pharmaceutical prod. Electrical mach. Railway mach. Soft drinks Paper proces.	341 436	Insulated wires & cables Knitting mills	

3. Medium-term perspectives: behaviour of firms

In this section the results of a questionnaire answered by 208 firms are presented.¹ This questionnaire was posted to 690 firms in February 1989. The 50 most and least profitable firms were included. The questionnaire covered all the large firms and a selected number of small and medium-sized firms. The 208 firms which replied represented almost 20 % of total industrial employment.

The questionnaire covered two subperiods, the first one from 1985 to the beginning of 1989 and the second from 1989 to 1992. An aim of this questionnaire was to compare current and future strategies followed by firms, given the establishment of the National Stabilization Programme (1985) and the Single European Act (1986).

Prior to analysing the results of this survey, a few important points need to be made.

Firstly, the optimistic tone of the industrialists' answers partly reflects the recent euphoria of the Greek economy (in terms of volume, the annual growth rate of manufacturing investment had reached 25% compared with the Community average of 8%, currently this has declined to 11% *vis-à-vis* the 10% Community figure).

The creation of the manufacturing sector in Greece started in the early 1950s with the establishment of some consumer goods industries to supply products that were in shortage because of the Second World War and the Civil War during the previous decade. By the end of the decade however, the trend changed with a more rapid expansion of industries that produced capital equipment and intermediate goods. These sectors became dominant in Greek manufacturing. During the 1970s one observed another turning-point in the trend when the intermediate goods industry decreased its share in total manufacturing while the consumer goods industry increased its contribution. This was also the case during the 1980s.² An important characteristic of the Greek economy is the low concentration level of its industries.

Most of the sectors in Greek manufacturing are not concentrated on large industrial establishments. The average level of employment in Greek manufacturing is 4,5 employees per establishment while for the rest of the Community countries, it is much higher (Portugal's average is 15 employees per establishment).³ This small firm size in Greek industry is the prevailing feature of some sectors such as the clothing and footwear, furniture, machinery and leather industries.

In contrast, a higher concentration rate is apparent in industries such as tobacco, cotton, wool and knitting, paper (pulp processing), chemicals, petroleum oil processing, metallurgy (aluminium, copper, zinc and steel) and vehicles production.

These sectors which are concentrated in big units are expected to benefit from the completion of the internal market as this will allow them to achieve economies of scale because of their currently significant size. All the sectors except metal production, metal products, rubber and plastics, increased their rate of concentration between 1973 and 1978. Assuming that this trend is stable, then one can expect that that concentration has continued during the period under review (1980-87), a result which leads us to expect the attainment of economies of scale in the abovementioned industries.

There are other problems for Greek industries: the low quality of factors of production (capital and labour) and a weak product innovation process. The attitudes of the firms towards these problems were examined in the questionnaire. The main results are as follows.

3.1. Merging process

During recent years, a process of mergers and acquisitions has begun. In the questionnaire, firms were asked whether they have taken part in this kind of process since 1985 or if they plan to do so.⁴

A number of firms gave positive answers, both for current and future plans. It is surprising that the chemical industry answered in favour of mergers (35%) from 1985 onwards given that it is already highly concentrated. However, one must therefore expect an even higher level of concentration in the future, although the future plans for acquisitions are very low, i.e. 8%.

16 % of the firms surveyed in the clothing industry gave positive answers for the early period with an even higher figure for the future, namely 24 %. The same trend is apparent in the wooden furniture industry with 12 % for previous years and 23 % for the future. For the food-processing industry, the figures are relatively low, 4,3 % for previous years and 4,2 % for the future. This is, however, very surprising, given that many private firms have been involved in

¹ The questionnaire is provided in Annex 3.

² T. Giannitsis and C. Vaitsos (1987), pp. 35-43.

³ H. Vernathakis (1989), pp. 269-283.

⁴ See Graphs 1 and 2 in Annex 3.

mergers. One possible explanation could be the high rate of cooperative units in the industry which reduces the percentage of the merging private firms. 50 % of the firms contacted were in the motor vehicles, shipbuilding and railway equipment sectors and these answered that they have already been engaged in a merging process and do not have plans for further acquisitions.

Eight per cent of the firms belonging to the plastics and rubber industry answered positively for previous years but the percentage rate rose to 25 % for the future, a trend which is very dynamic.

Finally, the rates for the rest of the sectors were lower than those mentioned above. It is worth noting, however, that the figures for future plans were much higher than the relevant figures for previous years.

In addition, the replies point out that most of the firms prefer to merge with national partners. In the second level of preferences, other Community firms are cited and, finally, firms of third countries.

The merging process has accelerated in Greece since 1988. Capital inflows to the country serving this purpose during 1988 were USD 121 million according to the Ministry of the National Economy. A further intensification of this tendency has been observed in 1989. During the first quarter of the year, the respective capital inflows were USD 102 million dollars, i.e. 84 % of the total capital inflows of 1988.

Firms from Germany, England, France and, to a lesser degree, the Netherlands, Belgium and Italy orientated their efforts on both the services and the manufacturing sectors. As far as the manufacturing sector is concerned, firms of other Member States are interested in the industries related to the chemicals and the food/drink sectors. Cables, electric and electronic sectors come second in their preferences as well as the motor-car and steel industries (the latter industries attracted the interest of German and English firms, i.e. CBS Beteliguns, GM Service and Rapid Tral/Outestar).

As for the chemicals sector (plastic, pharmaceuticals, oil and cosmetics) firms like Dior SA, International CIS, Rhône Poulenc, Total SA (France), Coopers Animal Ltd, SDC Elclevert (England), Bel-Pet SA (Belgium), Nilon NY (Netherlands), Ecolab SRL/Sollax NV (Belgium-Italy), Wella SA, Henkel (Germany) penetrated the Greek market by buying shares of domestic firms.

A special interest was shown by extra-Community firms in the food/drink sector, where they bought domestically reputed firms. For example, Swiss investors Nestlé, Jacobs-Suchard acquired some of the most important chocolatecocoa firms such as Loumidis, ION and Pavlidis. They now dominate the domestic market. The same tendency was displayed by American multinational firms Coca-Cola Co., Pepsi Co. which penetrated other non-food sectors as well.

As for intra-Community investors, Lesaffre, Thomson CSF, Kronenbourg (France), Guinnes Pauline-Marie BV (Netherlands), Marox Gebrueder Kul SA (Germany), Anylyn NV (Belgium) recently acquired well-known firms (Biamyl and Henninger, for example).

Finally, the electric and electronic sectors constitute a third pole in the context of the merging-acquisitions process. Firms like Câbles de Lyon (France), Manouli Câbles SA, Olivetti Holding (Italy), Digital Holding (Netherlands), AEG (Germany) bought shares in electric/electronic firms. Furthermore, other firms such as Siemens increased their penetration in the field of the electrical appliance sectors, controlled by only three groups (based on assembly processes mainly).

Table 11 presents the recent mergers and acquisitions in Greece. The process of 'horizontal integration' seems dominant. Foreign firms clearly want to be present in the Greek market.

Table 11

Some examples of mergers and acquisitions in Greece since January 1989

Acquiring companies				Target companies			
Name	Nation	Main business	Name	Nation	Main business		
Grand Metropolitan	UK	Drinks and food	Metaxa	GR	Brandy maker		
BSN	F	Foods	Henning Hellas	GR	Brewing		
Grand Metropolitan	UK	Drinks and food	Kaloyannis Bros.	GR	Ouzo maker		
BSN	F	Foods	Henninger Hellas	GR	Brewery		
Henkel KG&A	D	Chemicals	A&N Zachariadis	GR	Chemicals		

3.2. Economies of scale

Given the responses which were given by the firms to the question concerning plant expansion since 1985 and if they actually did expand their plants, one can see that most of the sectors in the Greek manufacturing sector have begun a plant-expansion process.¹ It is worth noting that the highest percentage of answers, with respect to plant expansion since 1985, was given by firms belonging to the food-processing, beverages and tobacco industries and in electric and electronic equipment industries (82 % for food processing and 86 % for electric and electronic equipment). The lowest percentage in favour of expansion was recorded for the sports goods and toys industries (40 % for both previous years and future years). However, the firms which belong to this sector are small family units and it seems more difficult for such entrepreneurs to change their attitudes.

The responses concerning the plans for plant expansion prior to 1992 were much higher, for almost every sector. More than half of the firms plan to expand their plants with the exception of two industries (sports goods and toys and metal products). Chemical, mechanical, electric and electronic equipment, motor vehicles, food processing, paper and plastics firms all answered positively about plans by more than 70 % with the response from paper firms reaching 92 %.

3.3. Technical inefficiency

Low technical efficiency is a major problem in Greek manufacturing. Greek manufacturers competing with the technologically advanced countries of Europe and the newly industrialized countries with cheap labour must exploit as far as they can the technological potential in order to survive in a highly competitive market. However, from the answers it seems that entrepreneurs are trying to restructure their production processes.

Greek manufacturing firms also try to apply some product innovation through the employment of researchers and the operations of research and development (R&D) departments. Of course, percentages are still low compared to those of Community competitors, but in some cases where large firms dominate the sector, R&D departments are more readily found, for example in the chemical and electrical and electronic equipment sectors.

3.4. Management information systems and management quality

Greek manufacturing consists of small family units. This fact prevented the application of scientific management techniques which could allow the firms to operate in a manner allowing them to respond more rapidly to changes in the external environment.² This low-quality management situation is an important cause of the bad performance in many industrial sectors during these years and especially in sectors where the dominance of small units is high, such as food processing, clothing, etc. In sectors where large firms are dominant, performance has consequently been better (such large firms are no longer family-owned).

Many firms are changing their attitudes and turning to scientific management techniques. This trend is supported by the hiring of managers³ and the application of management information systems (MIS) to handle the vast amounts of information which are available and to rationalize accounting systems, in order to be able to derive indicators and conclusions for the firm's future.

According to Graphs 5 and 6 in Annex 3, the application of information systems in firms has reached 100 % in many cases; taking into account the plans for further use of information systems towards 1992, it seems that Greek manufacturing intends to absorb new information technology.

In conclusion, firms have a more optimistic view of the future than they had for previous years. It seems that a dynamic process has been established in many sectors in order to adjust positively to the demands of a highly competitive environment.

¹ See Graphs 3 and 4 in Annex 3.

² G. Katsos (1988), pp. 24-29; A. Papageorgiou (1984), pp. 285-331.

³ A. Tratsela (1989).

Greece

Annex 1

Sectors omitted from the list of the 40 sensitive sectors

NACE code	Sectors	
321	Agricultural machines	
322	Machine tools	
323	Manuf. textile machinery	
324	Manuf. food machin.	
326	Transmission equipment	
327	Mach. specif. ind.	
330	Office machinery	
345	Electronic equipment	
361	Shipbuilding	
364	Manuf. aerospace equipment	
372	Manuf. medic. equipment	
421	Confec. cocoa	
425	Wine fresh grape	
491	Manuf. jewellery	
493	Photo cine labs	

Annex 2

Market demand growth of the sensitive sectors

		Weak		Average		Strong
Weak	248	Manuf. ceramics	222	Steel tubes	255	Paints, varnishes & inks
sector	314	Naval construct.	247	Glass & glassware	257	Pharmac. products
	343	Electr. appl. ind. use	256	Chem. prod. for ind. agr. use	344	Telecom. eq.
	362	Manuf. railway roll.	315	Boilermaking	347	Electr. lamps
	424	Distiller alcohol	316	Tools & finished met.	351	Motor vehicles
	438	Carpets	325	Manuf. plant mines	352	Manuf. motor vehic.
	467	Wooden furniture	328	Manuf. other m/c	411	Manuf. veget. & oils
	481	Rubber products	342	Electrical machinery	428	Soft drinks
			346	Electrical house. appl.	441	Leather tan. and fin.
			412	Slaughtering prep. meat	442	Leather industry
			413	Dairy products	471	Pulp & paper industry
			419	Bread & biscuits	483	Plastic processing
			427	Brewing & malting		
			432	Cotton industry		
			472	Process. paper		
			494	Manuf. sports/toys		
Balanced sector						
Strong	224	Prod. non-fer. metals	431	Wool industry	341	Insulated wires & cables
sector			451	Footwear	417	Manuf. spaghetti
			453	Clothing & access.	436	Knitting mills
			455	Household textiles		

Annex 3

Details of questionnaire

(a) This questionnaire was sent to 690 firms. In this sample, the 50 most profitable firms and the 50 big losers of the Greek industrial sector were included.

(b) 208 firms answered the questions, representing 30% of the surveyed firms.

(c) Employment in these 208 firms represents 20% of total manufacturing employment.

(d) The distribution of the number of firms and the percentage of employment accounted for in each industrial sector is shown in Table A.

Table A

Distribution of the firms by sector

NACE code	Industrial sector	Number of firms	Employment (%)
220	Prod. proces. metal	11	31,0
240	Manuf. metal prod.	18	14,2
250	Chem. industry	36	42,0
310	Met. art. and mech. eng.	20	14,05
340	Elect. engineering	16	11,2
350	Motor veh. transp. eq.	4	6,0
410	Food, drink tobacco	28	14,4
430	Textile industry	20	10,7
450	Footw. cloth. ind.	13	5,2
460	Wood. furnit. ind.	9	10,3
470	Paper, print.	13	25,0
480	Proc. rubber. plat.	12	23,4
490	Oth. manuf. ind.	8	6,6
	Total	208	20,0

310 refers to 310 plus 320 350 refers to 350 plus 360 410 refers to 410 plus 420













Annex 4

Main defensive measures in domestic trade policy

Administrative procedures, which affect in principle some extra-Community imports. According to the existing procedure, a limited number of commodities are quoted in two lists, A and B. Prior approval by the Bank of Greece is needed in order for these goods to be imported. A similar regulation relating to a certificate of imported prices is also required for some other products. These two regulations affect basically leather products, fertilizers, textiles, cement, steel, rubber, paper, plastic, ceramic products, electrical machinery, telecommunications equipment, toys and some consumer electronics. In contrast, import restrictions based on Article 115 of the Treaty of Rome affecting extra-Community trade are very limited in the case of Greece. According to recent studies (C. Neme, 1988), the domestic internal policy did not make use of the above article against extra-Community States.

As for the other administrative non-tariff barriers against total imports, a provisional regulation from October 1985 to mid-1987 concerning the deposit of 80% or 40% of the total value of some imported products, and for six months, also mainly affected labour intensive imports as well as a limited number of electric and precision products.

The 'budget effect' rather than the 'production effect' of some fiscal barriers is indicated by Law 1477/1984 which unified all special taxes on consumption affecting, however, both domestic and imported goods, in the same way. Meanwhile, many commodities not

produced in the country (such as consumer electronics) or some high-quality products (glass-glassware, finished metal goods) are classified within these products; in the latter case, a production effect exists. According to the same law, an additional indirect specific tax affected a few imports, mainly competitive to internal production. The taxes in question were recently abolished (in 1989).

A relative discriminatory treatment between imports and domestic production has been introduced by Law 303/1976. This law imposes some extra charges on motor cars of more than 1 200 cc. These charges affect essentially imports because internal production is concentrated on motor cars of less than 1 200 cc.

Besides these measures, effective protection of the national industry was also pursued by the laws on public procurement. The 3095/ 1945 law and the 49381/1955 decision introduced an obvious preference to domestic production against competitive imports. Nevertheless this procedure did not prevent the public procurement of capital intensive goods (equipment and consumer goods) from the international market. The law in question was replaced by Law 1797 of 4 August 1988, which abolishes the preferential treatment towards domestically produced goods.

Finally, taking into account the structure of Greece's external trade, prohibitive standards are also concentrated on the traditional sectors of the economy. In contrast, standards for electric/electronic equipment and transport commodities are limited and the process of certification is non-restrictive.

The list of defensive measures above is completed by an offensive one: export subsidies. These subsidies will be abolished between now and 1990. This elimination procedure started in 1987.

Bibliography

Abd-el-Rahman, K. S. (1986), "La différence" et la "similitude" dans l'analyse de la composition du commerce international', *Revue économique*, No 2, March 1986, pp. 309-338.

Adler, M. (1970), 'Specialization in the European Coal and Steel Community', *Journal of common market studies*, March 1970, pp. 175-191.

Atkins, W. S. (1988a), 'The cost of non-Europe in public sector procurement', *Research on the cost of non-Europe*, Vol. 5, part B, Commission of the European Communities, Brussels, 1988.

Atkins, W. S. (1988b), 'The cost of non-Europe in public sector procurement', *Research on the cost of non-Europe*, Vol. 5, part A, Commission of the European Communities, Brussels, 1988.

Balassa, B. (1965), 'Trade liberalization and revealed comparative advantage', The Manchester School of Economics and Social Studies, May 1965, pp. 99-123.

Balassa, B. (1967), 'Trade creation and trade diversion in the European common market', *Economic Journal*, No 1, 1967, pp. 1-17.

Baldwin, R. E. (1979), *The multilateral trade negotiations*, American Enterprise Institute, Washington DC, 1979, second edition.

Buigues, P. and Ilzkovitz, F. (1988a), 'Les enjeux sectoriels du marché intérieur', Commission des Communautés européennes, Directorate-General II, Brussels, 1988.

Buigues, P. and Ilzkovitz, F. (1988b), 'Les enjeux du marché intérieur pour l'économie belge', Commission des Communautés européennes, Directorate-General II, Brussels, 1988.

Caves, E. R. and Williamson, J. P. (1985), 'What is product differentiation really?', *Journal of Industrial Economics*, No 2, December 1985, pr. 113-132.

Commission of the European Communities (1979), 'GATT Multilateral Trade Negotiations', Communication from the Commission to the Council, Brussels, 8 October 1979.

Commission of the European Communities (1985), 'Competitiveness of European industry. Situation to date', European Economy, No 25, Brussels, 1985. Commission of the European Communities (1988a), 'The economics of 1992', *European Economy*, No 35, Brussels, 1988.

Commission of the European Communities (1988b), Panorama of EC industry 1989, Brussels, 1988.

GATT Director-General (1980), *The Tokyo Round of Multilateral Trade Negotiations*, Vol. II, GATT, Geneva, January 1980.

Giannitsis, T. (1988), The Greek industry development and crisis, third edition, Gutenberg, Athens, 1988.

Giannitsis, T. and Vaitsos, C. (1987), Technological transformation and economic development, Gutenberg, Athens, 1987.

Gray, P. H. and Martin, J. P. (1980), 'The meaning and measurement of product differentiation in international trade', *Weltwirtschaftliches Archiv.*, Vol. 116, No 2, 1980, pp. 322-329.

Gregory, R. C. and Tearle, D. (1973), 'Product differentiation and international trade flows: An application of the "Hedonic" regression technique', *Australian Economic Papers*, Vol. 12, June 1973, pp. 79-90.

Grubel, H. G. and Lloyd, P. (1975), *Intra-industry trade*, MacMillan Press, London, 1975.

Helg, R. and Ranci, P. (1988), 'Economies of scale and the integration of the European economy: the case of Italy', *Research on the cost of non-Europe*, Commission of the European Communities, Brussels, 1988.

Hufbauer, G. C. (1966), Synthetic material and the theory of international trade, Cambridge, Massachusetts, Harvard University Press, 1966.

Jacquemin, A. and Sapir, A. (1986), 'La part des échanges intra-CE dans le commerce communautaire. Une analyse sectorielle', Centre for European Policy Studies (CEPS), Brussels, 1986.

Katsos, G. C. (1988), Failing firms in Greece: causes, prediction and treatment, Centre for Programming and Economic Research (KEPE), Athens, 1988.

Katsos, G. C. and Ioannou, H. (1986), 'Textiles/clothing', Programming Subjects Series, Centre for Programming and Economic Research (KEPE), Athens 1986. Keesing, D. R. (1967), 'The impact of research and development on United States trade', *Journal of Political Economy*, No 1, May 1967, pp. 38-45.

KEPE (1986), 'Manufacturing industry: metallurgy, machinery, electric industries', Programming Subjects Series, Centre for Programming and Economic Research (KEPE), Athens, 1986.

Mardas, D. (1985), 'Les échanges intra-branche. Le cas de la Communauté économique européenne (CEE)', *Revue d'économie industrielle*, No 34, 4th quarter, 1985, pp. 71-86.

Mardas, D. (1988), 'Greek trade weakness in the context of the European Community market', working paper, Department of Economics, Aristotelian University, 1988.

Nerb, G. (1988), 'The completion of the internal market: a survey of European industries—Perception of the likely effects', *Research on the cost of non-Europe*, Vol. 3, Documents series, Commission of the European Communities, Brussels, 1988.

Neme, C. (1988), '1992 et la clause de l'article 115: A quand une politique commerciale commune', Colloque des économistes de langue française, Lille, 30 May to 1 June 1988.

OECD Directorate for Science, Technology and Industry (1984), 'International survey of the resources devoted to R&D by OECD member country Greece', OECD, Paris, December 1984.

OECD Directorate for Science, Technology and Industry (1985), OECD indicators of science and of technology II, OECD, Paris, May 1985.

Papageorgiou, A. (1984), 'Technology and the completion of the internal market' in *The evolution of the internal market in Europe: the case of Greece*, Ionic Bank, Athens, 1984, pp. 285-311.

Posner, M. V. (1961), 'International trade and technical change', *Oxford Economic Papers*, Vol. 11, June 1961, pp. 323-341.

Pratten, C. (1988), 'A survey of the economies of scale' in *Research on the cost of non-Europe*, Vol. 2, Commission of the European Communities, Brussels, 1988.

Tratsela, A. (1989), 'Executive market on the industry', research paper, Thessaloniki, 1989.

Turnovsky, S. J. (1977), Macroeconomic analysis and stabilization policy, Cambridge University Press, London, 1977.

Vernathakis, H. (1989), 'Internal market and strategic choices for industry towards 1992', in *The evolution of the internal market in Europe: the case of Greece*, Ionic Bank, Athens, 1989, pp. 269-283.

Vernon, R. (1966), 'International investment and international trade in product cycle', *Quarterly Journal of Economics*, Vol. 80, May 1966, pp. 90-207.

Velas, F. (1980), 'Le rôle des qualifications du travail dans la théorie du commerce international et la spécialisation des pays intermédiaires', *Revue d'économie industrielle*, No 14, 4th quarter, 1980, pp. 43-51.

Source of data

International trade data: VISA data bank and Volimex data bank of the Commission of the European Communities

Production, value added, employment data: VISA data bank of the Commission of the European Communities. For specific industries belonging to the textile, leather, clothing, footwear, wooden-furniture activities, national data on production have been collected from privileged sources: National Statistical Office of Greece.

Spain

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Contents

1.	Identification of the sensitive sectors	205		
1.1.	The pertinence of the original list of sensitive sectors for Spain	205		
1.2.	The relative importance of the 40 sensitive sectors	205		
2.	International position of Spanish firms in the sensitive sectors	205		
2.1.	An assessment of the competitiveness of the sensitive sectors prior to entry into the EC	205		
2.2.	Changes experienced in the trade flows of the sensitive sectors since EC membership	209		
2.3.	Distribution of trade strength and weakness relative to demand growth	212		
3.	Some characteristics of Spanish sensitive sectors	213		
4.	Medium-term perspectives	215		
4.1.	The behaviour of Spanish entrepreneurs	215		
4.2.	Direct foreign investment	216		
4.3.	The influence of public policies	218		
Conclusion				

Annexes

1.	Sources of information	219	
2.1.	Static competitivity indicators	220	
2.2.	Distribution of industrial employment in the sensitive sectors relative to their static competitiveness	221	
2.3.	Indicator of dynamic competitivity	222	
Bibli	Bibliography		

Bibliography

List of tables

1.	Relative importance of the 40 sensitive sectors in manufacturing industry (1985)	206
2.	Some salient features of the 40 sensitive sectors (1985)	207
3.	Export/import ratios of the 40 sensitive industries (1984-85 average)	208
4.	Import penetration ratios in relation to sectoral competitiveness	209
5.	Manufacturing trade flows before and after accession (rates of vari- ation from figures in current terms)	210
6.	Spain's intra-EC export/import ratios before and after membership	211
7.	The competitiveness of the sensitive sectors	212
8.	Relative weight of weak, average and strong sectors (1985)	212
9.	Growth of EC demand (apparent consumption) in the 40 most sensi- tive industries in relation to Spanish firms' trade performance	213
10.	Employment/output ratios and labour costs per employee (1985)	214
11.	R&D effort in Spanish manufacturing sectors in comparison with EUR 6 (1984)	214
12.	Gross fixed investment (rates of variation)	215
13.	Foreign investment: total and direct	216
14.	Direct foreign investment by countries of precedence	217
15.	Direct foreign investment by branches	217

1. Identification of the sensitive sectors

1.1. The pertinence of the original list of sensitive sectors for Spain

The 40 sectors identified as likely to be substantially affected by the creation of a single European market for the Community as a whole form the starting point of the Spanish analysis. However, one may try to verify the appropriateness in the case of Spain.

In order to identify the sensitive sectors of Spanish industry, one additional element may be of great interest: the tariff and quantitative barriers to trade. This factor is quite significant for the two new Member States—Portugal and Spain—to the extent that these countries have not yet carried out the removal of those barriers in their intra-EC trade. Indeed, the end of the seven-year transition period is fixed at the end of 1992 and around 50 % of the tariff reduction has still to be carried out.

Therefore, in the case of Spain (also of Portugal) the remaining tariff and quantitative sectoral trade barriers should be used as an indicator of the degree of each sector's vulnerability to the effects of the common market.

Furthermore, the assessment of the level of the Spanish sectoral tariff protection is an important factor in identifying the national welfare effects of completing the European market, to the extent that tariffs are, in contrast with non-tariff barriers (such as excessive customs documentation), revenue-generating.

Unfortunately, however, the lack of required data (3-digit NACE level of tariffs and quantitative barriers), precludes the inclusion of this factor in addition to the indicators considered for the 40 sectors.

In conclusion, the most reasonable option in the current data situation, is to take as a basis for a study of Spain the list of the 40 sensitive sectors identified at a Community level.

1.2. The relative importance of the 40 sensitive sectors

Table 1 shows the relative importance of the 40 sensitive sectors in terms of employment, value added and trade flows in 1985.

In Spain, these sectors absorbed around 41 % of value added in 1985. The proportion of employment was also quite similar, but their relative weight in trade flows was much higher. Therefore it can be inferred that those sectors are, on average, more open to international trade than the manufacturing branches as a whole. The 40 sensitive sectors have also an import penetration ratio above the manufacturing average. In comparison with the average of the EC, in Spain these 40 sectors account for a lesser proportion of total manufacturing activities.

Table 2 reports a series of indicators trying to capture the peculiar features of the 40 sensitive sectors in relation to Spanish manufacturing industries as a whole. As indicated, these 40 sectors exhibit both a higher labour productivity and a higher labour cost. In spite of having a rate of real growth almost identical to that of the average, they seem to be more vulnerable to external competition, given their lower export/import ratio and lesser share of domestic production in apparent consumption.

2. International position of Spanish firms in the sensitive sectors

Having identified the industries likely to be most affected by the single European market and examined their relative importance in the Spanish economy, it is necessary to analyse the competitive position of Spanish industries. For this purpose, this analysis is concentrated on the following two issues:

- (i) The assessment of international performance of Spanish firms in the 40 industries during the period preceding the beginning of the internal market project, i.e. before the year of Spain's entry into the EC.
- (ii) The analysis of the industrial trade changes which have occurred since 1986, the first year of EC membership. In some way, these changes can be used as indirect indicators of the extent to which sectoral trade performance on the eve of accession was influenced by trade restrictions.

2.1. An assessment of the competitiveness of the sensitive sectors prior to entry into the EC

As a first indicator of the relative capability of Spanish industry to face the strengthening of external competition, its trade performance will be examined by taking the ratio of exports to imports in the EC and other third markets.

Relative importance of the 40 sensitive sectors in manufacturing industry (1985)

NACE code	Share in value added	Share in employment	Share in manufacturing imports	Share in manufacturing exports	Share of imports on domestic demand
Group 1	2,06	1,51	12,52	4,03	39,89
330 Office and data-processing equip.	0,60	0,13	7,92	3,03	54,37
344 Telecommunications	1,38	1,27	3,85	0,88	23,27
372 Medico-surgical equipment	0,07	0,11	0,76	0,12	51,30
Group 2	7,36	5,67	1,39	2,27	2,18
257 Pharmaceuticals	2,33	1,64	1,09	1,23	4,74
315 Boilermaking	0,61	0,66	0.11	0,11	3,52
362 Rolling stock	0.54	0.66	0.04	0.03	0.77
425 Wine, sparkling wine	1.41	1.09	0.01	0.88	0.12
427 Brewing malting	1 30	0.70	0.11	0.02	2 13
428 Water, soft drinks	1,37	0,93	0,03	0,02	0,20
Group 3	4,51	5,06	1.57	3,75	5,96
341 Insulated wires and cables	0.43	0.36	0.17	0.50	6.02
342 Electrical equipment	2,00	2 02	1 12	0,30	8 78
361 Shiphuilding	1.07	1.87	0,10	2.07	3 42
417 Spaghetti macaroni etc	0.07	0.05	0,10	2,07	0,90
421 Chocolate, confectionery	0,93	0,76	0,18	0,00	2,70
Group 4	26.80	26.88	43.55	54.24	0.68
247 Glass glassware	1.36	1.03	0.70	0.64	10.90
248 Ceramic goods	1 38	1,05	0,70	1.42	7 17
251 Basic industrial chemicals	3 50	1,49	11.00	7.00	25.00
256 Oth chem prod for ind and ag	2 01	1,15	1 01	0.73	0.81
321 Agricultural machinery	0.55	0.66	0.81	0,75	21.57
322 Machines and other tools	0,55	0,00	0,57	1.00	16.42
323 Machines textile industry	0,74	0,70	0,37	1,00	24.07
324 Mach for food chem and rel ind	0,51	0,55	1.49	0,49	40.24
325 Plant for mines etc.	1.02	0,58	1,40	0,90	40,24
326 Transmission equipment	0.24	0,98	1,90	0,00	24,00
327 Other machines and equipment	0,24	0,27	0,97	0,39	47,10
345 Padio TV	1.06	0,38	0,05	0,40	55,57
346 Dom -type el appliances	0.07	0,82	2,04	0,41	6.00
347 Lighting	0,57	0,91	0,40	0,85	12.06
351 Motor vehicles	4.15	4.03	7 17	14.60	13,90
364 Aerospace equipment	0.37	0,42	1.20	0.63	20,50
431 Wool industry	0,37	0,42	1,50	0,03	23,03
432 Cotton industry	0,20	1 13	0,07	0,22	5,50
438 Carpets	0.14	0.17	0,14	0,38	1,19
451 Footwear	1.26	1.88	0,11	0,20	9,09
453 Ready-made clothing	2.15	2.05	0,10	4,15	4,54
455 Household textiles	0.40	0,65	0,49	0,71	2,44
481 Rubber products	1 76	1.56	0,19	0,54	2,54
491 Jewellery	0.20	0.24	1.61	2,17	27.90
493 Photo and cine labs	0,20	0.12	1,01	0,02	37,89
494 Toys, sports goods	0.39	0.37	0,09	0,04	8.26
40 sensitive sectors	40.93	30 13	53 10	57 24	15 59
Total manufacturing			55,10	54,47	13,30
i otal manufacturing	100,00	100,00	100,00	100,00	10,25
Some salient features of the 40 sensitive sectors (1985)

	40 sensitive sectors	Total manufacturing sectors
Labour productivity (million PTA (person)	2.05	282
(inition i i i A/person)	2,75	2,02
(million PTA/person)	1,73	1,54
Labour cost/value added (%)	58,59	54,72
Average size of plants (employees by plant)	50,84	20,34
Growth in terms of real value added (1980-85)	-2,86	-2,87
Export/import ratio (%) (1987)	74,70	76,40
Share of domestic production in apparent consumption	75,66	82,36

However, the ratio which referred to intra-Community trade is more relevant for this study, as the effects of market integration are likely to be seen first in specialization and rationalization changes within the Community according to the comparative advantages of each Member State; at least in the case of Spain, the ratio in other markets is also useful to the extent that additional changes can be expected due to the adoption of the CET (much lower, by average, than the Spanish tariff). This indicator is also important because, although the Community is the major trading partner of Spain, the trade flow with other countries, for the 40 industries considered and the total manufacturing industries, is also substantial. In 1985, 36 % of those 40 industries' imports came from the non-EC countries and 43 % of their exports were directed to non-partner countries.

Table 3 presents the 1984-85 average ratio of exports over imports for the EC, non-EC and world countries.

According to intra-EC trade figures, in only 15 of the 40 considered sectors Spanish firms show a good trade performance. However, the number of relatively competitive sectors rises to 22 when the export/import ratio is referred to world trade flows and it increases to 30 in the case of non-EC trade.

The sectors which appear to have a relatively strong competitive position in the Community are those producing footwear, textile goods, ceramics, some food products, motor

vehicles, and several transport equipment materials. By contrast, the most vulnerable sectors seem to be all kinds of machinery, some branches of the chemical industry and also several more traditional activities such as soft drinks or glass.

All Spanish industries with a good trade performance in the Community also did well in the other markets; but in the extra-EC markets 15 additional industries registered export/ import ratios higher than 110 %. Among those sectors the most remarkable ones are the following: glass, agricultural machinery, machine tools, boilermaking, lighting and carpets, linoleum and other floor coverings; all of them with ratios above 200 %.1

In Table 4 two criteria—1984-85 average intra-EC export/ import and import penetration ratios2-have been combined in matrix form in order to get a better appraisal of the competitiveness of each Spanish industry before EC membership.

From inspection of that table the results show that, as expected, sectors with a good trade performance-in terms of export/import ratios-generally show a below-average rate of import penetration with the exception of motor vehicles and rubber goods whose share of imports over apparent consumption are higher than the manufacturing average. Conversely, the majority of sectors with a weak trade performance present an above-average rate of intra-EC import penetration, but in this case there are, however, other exceptions. Therefore when both criteria are taken together the number of sectors with a really poor competitive situation is reduced to 15, namely glass, basic chemicals, all kinds of machinery and electrical appliances (except those for domestic use), in particular computers and office automation, aerospace equipment, and medical and surgical equipment.

In conclusion, from the overall analysis carried out up to now on the international competitive position of Spanish firms in the most affected industries before accession, a first impression of vulnerability, in particular in relation to those of the Community, emerges. Furthermore, this impression is worse if one takes into account that all trade-performance indicators applied in the analysis surely offer an upwardly biased image of Spanish industry's competitiveness, given

The use of the Balassa's 'revealed comparative advantage index' leads to much the same result. 2

Through the import penetration ratio, one obtains a certain measure of the relative capability of domestic firms, in relation to foreign ones, to satisfy domestic demand.

Export/import ratios of the 40 sensitive industries (1984-85 average)

NACE code	Sectors	EC	Non-EC	World
Weak sect	ors ¹			
247	Glass	71.7	326.4	1157
251	Basic chemicals	57.6	137.8	83 7
256	Other chemical products for industrial and agricultural	51,0	157,0	05,7
200	purposes	27.6	78.6	42.2
315	Boilermaking	25.0	262.0	102.5
321	Agricultural machinery	23.0	305.9	64.1
323	Textile machinery	49.5	122.3	76.2
324	Food processing and chemical plant	37.1	168.0	70.3
325	Mining, metallurgical and related plant	25.4	113.4	58.5
326	Transmission equipment for motive power	34.1	85.3	47.7
327	Wood, paper and leather machinery	32.4	157.7	62.2
330	Computers and office automation	51.7	29.6	43.1
342	Electrical plant and machinery	65.4	108.5	80.5
344	Telecommunications equipment	23.0	30.9	27.0
345	Electronic appliances, radio, TV	38.2	8.9	17.8
347	Lighting	63.8	223.8	118.9
364	Aerospace equipment	79.8	65.2	69.7
372	Medical and surgical equipment	14.5	23.5	18.4
417	Pasta	2.7	181.3	47.7
427	Brewing and malting	8.9	164.2	18.5
428	Mineral water and soft drinks	60.2	139.3	106.1
491	Jewellery	38.5	80.4	67.0
493	Photographic processing	67,4	43,9	57,0
Balanced p	position ¹			
257	Pharmaceuticals	95.2	166.9	131.9
322	Machine tools	106.1	381.3	189.2
438	Carpets, linoleum and other floor coverings	95,5	522,1	255,6
Strong sec	tors ¹			
248	Ceramics	189,8	1 296,7	444.2
341	Insulated wire and cables	236,5	975.5	361.5
346	Domestic electrical appliances	237,9	495,4	276,9
351	Motor vehicles	263,9	238,9	260,8
361	Shipbuilding	543,9	24 226,9	4 903,4
362	Railway equipment	158,7	160,9	160,0
421	Chocolate and sugar confectionery	148,8	569,6	287,0
425	Wine and sparkling wine	6 032,1	68 357,6	10 189,5
431	Wool industry	362,0	533,3	395,7
432	Cotton industry	868,5	231,2	506,7
451	Footwear	2 581,1	4 373,8	3 417,2
453	Clothing and accessories	171,2	208,7	190,5
455	Household textiles	386,2	385,7	385,8
481	Rubber goods	205,3	940,7	338,8
194	Toys, games and sports goods	368,9	168,5	248,7
	Total 40 sectors	106,6	147,0	121,2
	Total manufacturing	102,8	151,9	123,6

¹ This threefold classification corresponds to intra-EC export/import ratios. The relatively strong, average and weak performers are those sectors whose ratios were over 110%, between 90% and 110% or under 90% respectively. *Source:* Dirección General de Aduanas.

Import penetration ratios in relation to sectoral competitiveness

(1984-85 uvorage)			Intra-EC import	penetration r	atio			
(1764-65 average)		> Average manf. ind.		< Average manf. ind.				
	NACE code	Sectors	PR ¹	NACE code	Sectors	PR ¹		
Weak (90%)	247	Glass, glassware	10,9	256	Oth. chem. prod. for ind. and ag.	9,6		
	251	Basic industrial chemicals	27,7	315	Boilermaking	3,6		
	321	Agricultural machinery	20,5	342	Electrical equipment	8.6		
	323	Machines textile industry	32,6	417	Spaghetti, macaroni, etc.	8,6		
	324	Mach. for food, chem. and rel. ind.	40,1	427	Brewing, malting	2,1		
	325	Plant for mines, etc.	22,0	428	Water, soft drinks	0.2		
	326	Transmission equipment	47,3	493	Photo and cine labs	7,1		
	327	Other machines and equipment	32,2					
	330	Office and data-processing equip.	46,0					
	344	Telecommunications	22,3					
	345	Radio, TV	12,0					
	347	Lighting	13.1					
	364	Aerospace equipment	28.1					
	372	Medico-surgical equipment	48,5					
	491	Jewellery	37,6					
Average (between	322	Machines and other tools	16.2	257	Pharmaceuticals	4.8		
90% and 110%)	438	Carpets	10,5			.,-		
Strong (110%)	351	Motor vehicles	19,4	248	Ceramic goods	6,9		
	481	Rubber products	10,9	341	Insulated wires and cables	6,2		
		CHORAGE REPORTED A PROPERTY SETTING		346	Domtype el. appliances	6,1		
				361	Shipbuilding	2,3		
				362	Rolling stock	0,7		
				421	Chocolate, confectionery	2,5		
				425	Wine, sparkling wine	0,1		
				431	Wool industry	4,5		
				432	Cotton industry	1,2		
				451	Footwear	3,2		
				453	Ready-made clothing	2,3		
				455	Household textiles	2,2		
				494	Toys, sports goods	7,8		

Source: Dirección General de Aduanas e INE.

that they incorporate the effects of its relatively high level of both tariff and non-tariff barriers.

2.2. Changes experienced in the trade flows of the sensitive sectors since EC membership

By comparing trade performance in the years preceding accession and in those in the post-accession period, one can achieve a better founded judgment not only about current sectoral competitiveness but also about its possible trend in the near future when firms have to face continued increases in external competitive pressures. In this sense, one has to take into account that during the first two years of membership, Spanish firms had to respond to the removal of a great part of tariff restrictions: 22,5% of reduction in its tariff on EC trade, total elimination—through the adoption of VAT—of the significant hidden protection which existed in the previous indirect tax system, and elimination of a substantial part of the quantitative barriers.

As can be seen in Table 5, since accession, Spain's manufacturing imports as a whole, and particularly those of the most sensitive sectors, have experienced a sharp increase. That increase is higher in the case of imports from the EC.

Manufacturing trade flows before and after accession (rates of variation from figures in current terms)

17,0	20,2	18,1	32,9	35,1	19,1	34,0
18,9	14,4	12,3	11,3	22,7	13,3	16,9
17,8	17,6	15,6	23,9	30,4	16,6	27,1
18,9	20.3	17.1	33.7	42.8	18.7	38.2
21.0	10.2	13.2	18.2	26,1	11.7	22.1
19,7	16,4	15,7	28,1	37,3	16,0	32,6
30.5	33.2	17.4	10.0	16.8	25.0	13.3
21.7	30.0	4.0	-23.9	0.5	16.0	-12.6
25,6	31,2	10,2	-7,2	10,0	20,2	1,0
36.5	38.3	16.1	10.3	17.2	26.7	13.7
21,5	29,3	4,7	-16,7	2,6	16.3	-7.5
29,0	34,1	10,9	-1,3	11,9	21,9	5,1
	17,0 18,9 17,8 18,9 21,0 19,7 30,5 21,7 25,6 36,5 21,5 29,0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Source: Dirección General de Aduanas.

On the contrary, manufacturing exports have suffered a deceleration in the EC market and a dramatic drop in the whole of the other third countries.

In consequence, as may be expected given the relatively high degree of protectionism of the Spanish economy, since EC membership a substantial worsening in manufactured products trade balances-in relation to both partner and nonpartner countries-has taken place.

In any case, it is worth pointing out that the 1985-87 worsening of Spain's manufacturing trade balance must not be solely attributed to EC membership, but also to the process of the recovery of the economy registered during these years and to the simultaneous appreciation of the peseta.

In Table 6 we have checked if the competitive position (weak, average or strong) of each sector in terms of its 1984-85 average intra-EC export/import ratio prevailed during the two first years of EC membership. This is the case in the major part of the sectors. However, there are some exceptions. Thus, the trade performance deterioration

suffered by seven activities with good or moderate competitiveness has been strong enough to place those sectors within either the group of the weakest (e.g. pharmaceuticals, machine tools, carpets or shipbuilding) or, as in the case of the clothing sector, within the average-performers group. These changes suggest somewhat that those sectors based their competitiveness to a great extent on the existence of high trade barriers.

Nevertheless, rather more surprising behaviour is that followed by the three sectors which, in spite of the trade barrier reduction process, improved their export/import ratios: photographic processing, aerospace equipment and jewellery.

In summary, when one takes into account the sectoral trade performance before and after Spain's entry into the ECproxied by the 1984-87 average export/import ratios-and also the 1984-85 average proportion of import penetration -this leads to the threefold classification (weak, average, strong) reported in Table 7, which will be used in the following sections.

Spain's intra-EC export/import ratios before and after membership

1984-85 average intra-EC export/import ratio									
export/import ratio		Weak			Medium			Strong	
	NACE code			NACE code			NACE code		
Weak	247	Glass, glassware	56,3 (-)	493	Photo and cine labs	96,6 (+)	364	Aerospace equipment	121,4 (+)
	251	Basic industrial chemicals	43,1 (-)				491	Jewellery	149,3 (+)
	256	Oth. chem. prod. for ind.	21,9 (-)						
	315	Boilermaking	133(-)						
	321	Agricultural machinery	164(-)						
	323	Machines textile industry	36.6(-)						
	324	Mach. for food, chem. and rel. ind.	28,2 (-)						
	325	Plant for mines, etc.	20.2(-)						
	326	Transmission equipment	33,1(+)						
	327	Other machines and equipment	20,8 (-)						
	330	Office and data-process-	59,5 (-)						
	342	Electrical equipment	51.9(-)						
	344	Telecommunications	20.4(-)						
	345	Radio, TV	25.5(-)						
	347	Lighting	51.6(-)						
	372	Medico-surgical equipment	17,6 (+)						
	417	Spaghetti, macaroni, etc.	0,3(-)						
	427	Brewing, malting	7,4 (-)						
	428	Water, soft drinks	27,6 (+)						
Medium	257	Pharmaceuticals	78.9 (-)						
	322	Machines and other tools	82.6(-)						
	438	Carpets	60,8 (-)						
Strong	361	Shinbuilding	731(-)	453	Ready-made clothing	90.0 ()	248	Ceramic goods	181.9(+)
Strong	362	Polling stock	559(-)	455	Ready-made clothing	90,0()	341	Insulated wires and cables	200.7(-)
	421	Chocolate confectionery	737(-)				346	Dom stype el appliances	1435(-)
	421	chocolate, confectionery	13,1()				351	Motor vehicles	1367(-)
							425	Wine sparkling wine	20105(-)
							431	Wool industry	1763(-)
							432	Cotton industry	231.1(-)
							451	Footwear	1605.4(-)
							455	Household textiles	180.0(-)
							481	Rubber products	127.5(-)
							494	Toys, sports goods	321,3 (-)

¹ Figures reflect 1986-87 average intra-EC export/import ratios. Signs in parentheses show the trend of intra-EC export/import ratio for the period 1985-87. *Source* : Dirección General de Aduanas.

The competitiveness of the sensitive sectors

NACE code Weak 247 Glass 251 Basic chemicals¹ 256 Other chemical products for industrial and agricultural purposes 257 Pharmaceuticals 315 Boilermarking 321 Agricultural machinery Machine tools 322 323 Textile machinery Food processing and chemical plant 324 325 Mining, metallurgical and related plant 326 Transmission equipment for motive power 327 Wood, paper and leather machinery 330 Computers and office automation 342 Electrical plant and machinery² 344 Telecommunications equipment 345 Electronic appliances, radio, TV 347 Lighting 362 Railway equipment 364 Aerospace equipment 372 Medical and surgical equipment 417 Pasta 427 Brewing and malting 428 Mineral water and soft drinks 493 Photographic processing Average 361 Shipbuilding 421 Chocolate and sugar confectionery 438 Carpets, linoleum and other floor coverings 491 Jewellery Strong 248 Ceramics 341 Insulated wire and cables Domestic electrical appliances 346 351 Motor vehicles 425 Wine and sparkling wine 431 Wool industry 432 Cotton industry 451 Footwear 453 Clothing and accessories 455 Household textiles 481 Rubber goods 494 Toys, games and sports goods 252 + 253.342 + 343.

Table 8

2.3. Distribution of trade strength and weakness relative to demand growth

firms perform moderately or badly.

In Table 9 the relative competitive position of Spanish industries is compared with the trend of demand for each industry's products in the Community between 1980 and 1985.

As shown, that comparison does not offer a satisfactory picture. In effect, the major part of the activities where the Spanish firms suffer a clear disadvantage are average or strong demand sectors. This is particularly true, when we use as an indicator of demand dynamism the 1973-85 average growth in the EC, the USA and Japan, and then, all branches of machinery for industrial purposes become strong demand sectors.

By contrast, the nucleus of Spanish comparative advantages mainly consist of industrial activities for which there is weak growth in demand. As well, those industries are more open to competition from the less developed countries to the extent that they are, in general, relatively labour-intensive.

It is important to underline that the bulk of industries where public purchases (telecommunications equipment, office equipment, railway equipment, etc.) are concentrated is within the group in which Spanish firm's competitiveness is relatively poor. Thus, the opening up of public purchasing to EC-wide competition could lead to a substantial increase in import penetration.

Relative weights of weak, average and strong sectors (1985)

Sector	Number of sectors	Value added	Employment
Weak	24	23,1	17,4
Average	4	2,3	3,1
Strong	12	15,5	18,6
Total 40 sectors		40,9	39,1
Total manufacturing		100,0	100,0

As can be seen in Table 8, the overall picture is not very

encouraging. Industries in which Spanish trade performance

is relatively good (12 out of 40) are less important in terms

of value added and employment than those where Spanish

3. Some characteristics of Spanish sensitive sectors

In this section, some characteristics of Spanish sensitive sectors are examined in order to get a better understanding of their trade performance. In this respect, one considers factors mentioned in traditional (Heckscher-Ohlin model) and modern (neo-technology and industrial organization models) trade theories. According to Heckscher-Ohlin predictions (and assuming that Spain is relatively well labour-endowed in comparison with the EC), one would expect to find that sectors in which Spanish firms enjoy an advantage *vis-à-vis* the EC are relatively more labour-intensive than those where Spanish firms have a poor competitive position.

On the basis of the employment output ratio, this pattern is not, however, followed by all the sectors (see Table 10).

Table 9

Growth of EC demand (apparent consumption) in the 40 most sensitive industries in relation to Spanish firms' trade performance

				EC growth demand (1980-85)				
		Weak		Average		Strong		
	NACE		NACE code		NACE			
Weak	247	Glass	315	Boilermaking	251	Basic industrial chemicals		
sectors	3221	Machines tools	325	Mining, met. plant	256	Other chem.		
	3231	Textile machinery	362	Rolling stock	257	Pharmaceuticals		
	3241	Food proc. and chem. plant	364	Aerospace equipment	321	Agricultural machinery		
	326 ¹	Mining met. and rel. plant	372	Medico-surgical equipment	330	Office machinery		
	3271	Trans. equip. Wood, paper and leath. mach.	417	Spaghetti, macaroni	342	Electr. plant and mach.		
			427	Brewing, malting	344	Telecommunications		
					345	Electr. appl., radio, TV		
					347	Lighting		
					428	Water, soft drinks		
					493	Photo, cine labs		
Balanced	438	Carpets	361	Shipbuilding				
position		-	421	Chocolate, confectionery				
			491	Jewellery				
Strong	248	Ceramic goods	346	Domtype el. appliances	341	Insulated wires and cables		
ectors	432	Cotton industry	425	Wine, sparkling wine	351	Motor vehicles		
	451	Footwear	431	Wool industry				
	481	Rubber goods	453	Clothing				
	494	Toys, sports goods	455	Household textiles				

¹ According to data of demand growth in EC + USA + Japan, these are dynamic sectors *Source:* Dirección General de Aduanas and INE (for Spain) Commission (for EUR 12).

Employment/output ratios and labour costs per employee in 19851

	Sectors	Employment/output ratios ²	Labour costs	Spain/EC	
		Spain (persons/ECU 1 000)	Spain (ECU 1 000)	EC (ECU 1 000)	(%)
Weak		0,1055	15,07	24,36	0,62
Strong		0,1331	12,13	19,93	0,61
	Total 40 sectors		13,4	22,6	0,59
	Total manufacturing	0,1211	12,0	22,0	0,54

¹ In both cases it has been calculated from cost-labour figures in ECU 1 000

² Instituto Nacional de Estadística.
³ Dirección General de Aduanas.

Dirección General de Adualias.

That rather inconclusive evidence agrees with the results obtained in previous and more formal tests of factor proportion models.¹

Labour-cost figures per employee (see Table 10)² are conducive to conclusions in line with those obtained from labour-output ratios. Thus, Spain exhibits a non-negligible comparative advantage in terms of labour costs in all manufacturing branches; according to the labour costs/employment ratio in 1985, it was, on average, about 46 % lower than in the EC as a whole. The Spanish labour-cost advantages were slightly less in the group of 40 sensitive sectors. Within the latter group the greatest cost advantages were in the average trade performers.

The examination of other factors suggested in modern trade theories provides additional insights into the variables influencing the pattern of Spanish manufacturing trade.

Spain can be also characterized as a country with a rather weak technological capability in relation to the EC average. In effect, according to the most recent data, in 1986 Spanish R&D expenditure represented solely around 0,7 % of GDP, whereas this percentage was above 2 % in the EC on average.

When one takes into account manufacturing technological effort (R&D/value added) at a sectoral level (see Table 11), the relative position of Spanish firms appears especially weak

in those areas producing machinery and transport equipment goods.

Table 11

R&D effort in Spanish manufacturing sectors in comparison with EUR 6 (1984)

NACE-CLIO	R&D expenditure/value added			
Sectors	Spain	EUR 6		
Ferrous and non-ferrous ores and metals	0,7	1,8		
Non-metallic minerals	0,4	1,8		
Chemical products	2,2	11,3		
Metal products	0,3	1,1		
Machinery	1,0	4,6		
Office machines	4,0	7,9		
Electrical and electronic goods	2,7	14,1		
Transport equipment	4,1	10,4		
Food, beverages and tobacco	0,3	0,4		
Textiles, leather and clothing	0,1	0,3		
Paper and printing products	0,2	0,3		
Rubber and plastic	1,4	2,4		
Other manufacturing	0,1	0,6		
Total manufacturing	1,1	4,6		

Sources: Instituto Nacional de Estadística, Eurostat and OECD (STII).

The recent rather poor trade performance of traditional sectors in which Spanish firms enjoy a relatively good competitive position suggest that technological upgrading of firms is not crucial in the high-tech branches but throughout the whole industrial structure.

¹ Fariñas and Martín (1989).

² The above ratios are only a rough indicator of relative levels of labour costs to the extent that they are not corrected by labour productivity and that ecu exchange rates have been used instead of PPP exchange rates.

Spain

In traditional sectors like footwear, textiles, clothing or toys, games and sports goods, the application of new technologies and the specialization in upmarket product ranges in conjunction with an emphasis on brand policies seems to be the best strategy to face the growing competition of both South-East Asian countries and other EC partners, basically Italy and France.

In other branches with an average and high technological content the development or, at least, the application of new technologies is even more indispensable, given the increasing role of product and process innovation within the determinants of international competitiveness. In fact, the relatively weak innovative capacity of Spanish industry in conjuction with its limitations in other non-price factors also relevant to competition in imperfect markets (marketing, post-sales assistance, etc.) may have much to do with the relatively poor trade results exhibited by those branches (most of them included within the group of vulnerable sectors).

When, on the basis of the study carried out by Pratten (1987), one considers the different sector potential for economies of scale, it emerges that they are larger in sectors, like electrical and electronic equipment or means of transport, in which Spain's competitive position is currently more under threat.

By contrast, economies of scale are smaller in footwear and (excepting the cases of ceramics and motor vehicles) in the rest of the industrial branches where Spanish firms enjoy a comparative advantage.

Therefore, one can wonder if the Spanish firms are able to take advantage of cost reductions through reaping currently unexploited economies of scale.

In conclusion, the weak trade performance of Spanish firms seems most noticeable in the industries which, in general, have the following features:

- (i) fast growth rates of demand in the EC, and particularly in the USA and Japan;
- (ii) above-average share of public procurement;
- (iii) relatively high capital/labour ratios;
- (iv) high R&D content;
- (v) more scope for sale economies.

In contrast, Spanish firms seem to perform relatively more strongly in products which are characterized overall by the opposite features.

4. Medium-term perspectives

4.1. The behaviour of Spanish entrepreneurs

A very positive signal coming from different surveys (see Commission of the European Communities (1988) and Gonzalez (1987)) is the firms' high concern for the need to improve both productivity and competitiveness and, hence, their planned investment increase for rationalization and product innovation.

When asked about the planned strategies for facing the challenge of the Community market, most responses emphasized that of speeding up investment at home in order to improve productivity. The cooperation agreements with companies in other member countries for production and R&D projects were also particularly stressed.

When those firms' attitudes and expectations are considered in relation to Spanish industrial performance over the last few years, one can find a noticeable number of coincidences. Thus, as expected, in spite of the substantial increase in import penetration, domestic production has experienced an important rise since 1985 as a consequence of a considerable increase in domestic demand. Within domestic demand the most dynamic component has been investment. In Spain the volume of gross fixed investment in the manufacturing industry, after a long period of recession since 1974, has been increasing since 1984 at a much higher rate than in the Community as a whole (see Table 12).

Table 12

Gross fixed investment¹ (rates of variation)

	1985/84	1986/85	1987/86	1988/87
Spain	4,1	10,0	14,6	14,0
ÉC	2,5	3,4	4,8	8,4

Source: European Economy.

At a sectoral level, the most dynamic investors during the 1986-88 period appear to be the food and beverages industry, the chemical sector and most branches producing equipment goods among others. Many of those branches have also been important receivers of direct foreign capital investment inflows.

Additionally, on the basis of the renewed investment enquiry conducted by the Ministry of Industry and Energy (Miner) on a sample of enterprises, one knows that a great amount of investment in 1987 was mainly devoted to increases of capacity and rationalization and also that both objectives pointed, in the end, to the goal of achieving new products and processes of production.

4.2. Direct foreign investment

Since the beginning of the 1960s, foreign investment has shown an upward trend; since accession, it has also shown an upsurge.

Therefore, it seems that accession has increased the already substantial degree of attractiveness of the Spanish economy for foreign investors (see Table 13).

Table 13

Foreign investment: total and direct

	Net inflows ^{1,2} Billion PTA	Rate of variation ²
1982	198,8 (111,4)	
1983	243,7 (121,5)	22,5 (9,1)
1984	322,1 (156,1)	32,2 (28,5)
1985	412,9 (164,2)	28,2 (5,2)
1986	716,8 (284,2)	73,6 (73,1)
1987	996,5 (321,5)	39,0 (13,1)
1988	1 063,5 (521,1)	6,7 (62,1)

¹ Total inflows — Disinvestments.

² Figures referring to direct foreign investment are given in parentheses.

Source: Bank of Spain (Registro de Caja).

On the basis of the information about the geographical origin of direct investors, which account for more than half of the equity capital of the recipient firm, one knows that the EC has increased its already prominent participation in total foreign investment inflows of this kind (see Table 14).

From the same source of information broken down into branches (see Table 15) a quite preoccupying trend in the sectoral distribution of direct foreign investment emerges: a bias towards financial projects to the detriment of the manufacturing ones. Therefore, although without a doubt foreign investment may have contributed to the industrial recovery of the last few years, there are signs of its increasing diversion from industrial to services branches. Moreover, when examining other forms of foreign investment a trend appears towards speculative rather than productive projects.

In conclusion, it is reasonable to say that the negative impact of accession on the trade balance has been somehow offset by the positive reactions of firms to the challenge of membership in conjunction with the increase in foreign investment.

Many plausible explanations for the upsurge in direct foreign inflows may be found. Basically:

- (a) firstly, to take advantage of the possibility of supplying, through exports, the Community market from a country with high labour-cost advantages, and which, since 1986, was enjoying reductions in the CET until its disappearance in 1992;
- (b) secondly, to profit from a domestic market with a rate of growth above the Community average since the year of the entry into the EC;
- (c) thirdly, to benefit from the substantial reductions in the costs of imported inputs, derived from the reductions registered in Spanish tariffs on both intra-EC and extra-EC imports;
- (d) and, finally, to take advantage of the different types of public aid supplied by the government to attract direct foreign investment, in particular, towards the activities more related to the new technologies and/or regions of special interest.

Given that the majority of abovementioned factors are likely to remain in the next years, it is reasonable to expect that the current upward trend in direct foreign investment is going to continue in the future.

In theory, those direct investment inflows could give rise to improvements in productivity and competitiveness and hence in the trade performance of Spanish industry, particularly to the extent to which they help to better orientate domestic industrial structure to trends in both domestic and international demand.

Such desirable prospects seem to be feasible in some medium or high-tech branches like most of chemicals and some machinery industries.

Direct foreign investment by countries of precedence

		1982	1985	1986	1987	1988
France		4,4	10,2	6,2	6,9	7,7
Germany		10,3	10,3	26,1	3,7	7,4
Italy		1,1	2,2	0,6	9,2	1,2
UK		5,6	6,5	7,0	6,2	13,1
Other EC countries	_	12,9	29,2	10,8	26,0	25,6
	Total EC	34,3	40,4	50,7	49,1	55,0
USA		23,1	22,3	8,0	5,5	4,0
Japan		1,9	5,0	2,5	4,6	1,6
Other OECD countries		22,5	10,6	7,2	11,4	11,1
	Total OECD	81,8	78,3	68,4	70,6	71,7
Other countries		18,1	21,7	31,6	29,4	28,3
	Total	100	100	100	100	100

Table 15

Direct foreign investment by branches

Sectors ¹		1982	1985	1986	1987	1988
Agriculture		2,4	1,3	1,7	1,5	1,2
Energy		0,1	0,4	0,4	0,3	2,0
Mining and chemical		15,1	17,3	14,0	28,4	10,7
Metal products (including all equipment)		36,3	28,2	29,9	11,3	9,1
Other manufacturing		24,1	17,4	17,5	12,9	16,9
Building		0,6	0,9	0,1	0,2	0,6
Financial services		8.3	17,6	19,3	24,4	43,7
Other services	_	13,2	17,2	17,1	21,2	15,8
	Total	100	100	100	100	100

4.3. The influence of public policies

However, this assessment of Spanish industry's performance in the first years after accession has left aside one factor—the nature of government intervention—which seems important not only in order to have a better understanding of the recent industrial trends but also in any attempt to outline prospects.

The stabilization policies implemented since the late 1970s have permitted an improvement in the macroeconomic environment, in particular, as regards inflation and external equilibrium.

Furthermore, a growing intervention in the industrial adjustment process has taken place since the early 1980s. As in other EC countries, public assistance to industry was firstly aimed at restructuring traditional industries like steel, ships, textiles, etc., more affected by the crisis and competitive pressures from the NICs (newly industrialized countries). However, later, the government have also tried to speed up the development of the 'sunrise' activities, that is, those more related to new technologies, in particular in the field of electronics. More recently, the concern of the government with the new technologies has taken the form of stimulating R&D activities. In this context, in 1988 a National Plan for R&D was launched, similar to that launched by the Community, to coordinate the public efforts devoted to promote R&D in the next four years.

In addition, the Spanish Government has been playing an active role in attracting foreign investment, in particular towards activities with a high technological content.

Finally, to complete this brief description of the industrial policy measures which seem more related to industrial adjustments which occurred over the last few years, it is necessary to mention those of public firms.

As in other fields of supply-side government intervention, in this field of public enterprise, the main target pursued at the beginning of the 1980s was the adjustment of the traditional branches, in which public enterprise has an important presence (steel, shipbuilding, etc.), to changes in the international context. Therefore, as in other traditional sectors with less public participation, a strategy aimed at reducing the excesses in productive capacity was undertaken.

Apart from this monitoring role in the restructuring of traditional activities, public enterprise policy has been increasingly orientated towards promoting a more general process of modernization of enterprises in order to enhance their productivity and competitiveness. For this purpose an increasing number of total or partial privatization initiatives has been accomplished, in many cases with the involvement of multinational firms.

Additionally, public enterprise policy has been paying increasing attention to the target of achieving an improvement in public firms' technological capabilities, as shown in the rising trend in resources devoted to promote R&D activities. This policy orientation is also aimed at encouraging growing participation of public enterprises in the R&D Community programmes (Esprit, Brite, etc.)

Conclusion

Overall, the current competitive position of Spanish firms appears rather worrying. Nevertheless, if with the assistance of appropriate macroeconomic and supply-side policies, firms keep up their investment efforts for improving qualitatively both products and process, Spanish industry is likely to enhance its competitiveness in branches where it has traditionally enjoyed comparative advantages. Thus, with a quickening in the dissemination of technological innovation in conjunction with the preservation of labour-cost advantages vis-à-vis partners, Spanish firms are likely to increase their share in the Community market in most of the following industries: ceramics, footwear, textiles, toys and sports goods, wine and sparkling wine and other food industries, shipbuilding and motor vehicles. In the latter, composed of subsidiaries of multinationals, prospects are logically determined by the global strategies of parent firms.

In some other branches, where Spanish industry exhibits a worse competitive position, such as chemicals, machinery tools and electrical plant and machinery, but firms, characterized by a high level of foreign investment, are making great efforts in modernizing productive structures, improvements in competitiveness may be also expected.

The future of the highest technological industries where domestic firms have a low presence in the internal market and a clear disadvantage on the international front (aerospace, computers and office automation, telecommunications equipment, etc.) is not very encouraging. Nevertheless, a more optimistic view, based on the locational advantages which the Spanish economy provides for investment in production facilities by multinationals, could be envisaged. In addition, an active strategy of firms—with public assistance—based on R&D collaboration agreements, licensing deals and mergers may also lead to better results.

Annex 1

Sources of information

This study has required the compilation of information from several data-sets provided with different sectoral nomenclatures and levels of disaggregation, which have been made homogeneous. All data referring to Spain come from national sources, whereas those of the other partners are provided by the Commission.

In relation to Spain, the main sources of information have been the National Institute of Statistics for data on industrial structure and the Customs Directorate-General (Dirección General de Aduanas) for data on trade. The former were provided under CNAE nomenclature (Clasificación Nacional de Actividades Económicas) and therefore had to be translated into the NACE codes (by using the official table of equivalence). The latter required also a harmonization from the original classifications (Nimexe and SITC) to the NACE. In this case the tables of equivalence provided by the Commission were used.

Annex 2.1.

Static competitivity indicators for the sensitive sectors identified at the national level

NACE code	Sector	Intra X/M (average 1986-87)	Intra SI 1987	Extra X/M (average 1986-87)	SI 1985 prod.	Intra X/M	Intra SI	Extra X/M	SI prod.	Global note
247	Glass	0,56	0,77	1,65	1,06	-1	- 1	1	0	- 1
248	Ceramics	1,82	1,81	9,41	1,56	1	1	1	1	4
251	Basic industrial chemicals	0,43	0,82	0,97	0,74	-1	-1	0	-1	- 3
256	Oth. chem. prod. for ind.									
	and ag.	0,22	0,28	0,59	1,70	-1	-1	- 1	1	-2
257	Pharmaceuticals	0,79	0,93	1,66	0,94	-1	0	1	0	0
315	Boilermaking	0,13	0,35	2,47	0,51	-1	- 1	1	-1	-2
321	Agricultural machinery	0,16	0,42	0,91	0,64	-1	- 1	0	-1	- 3
322	Mach. tools	0,83	1,12	1,61	0,60	-1	1	1	- 1	0
323	Textile machinery	0,37	1,06	0,75	0,54	-1	0	-1	- 1	- 3
324	Food proc. and chem. plant	0,28	0,67	1,16	0,40	- 1	-1	1	-1	-2
325	Mining, met. plant	0,20	0,37	0,69	0,48	-1	- 1	- 1	- 1	-4
326	Mining, met. and rel. plant	0,33	0,79	0,51	0,35	- 1	- 1	- 1	- 1	-4
327	Mech. trans.									
	Wood, paper and leath.									
	mach.	0,21	0,52	0,78	0,45	- 1	- 1	- 1	- 1	-4
330	Comp. office equip.	0,60	0,87	0,15	0,39	- 1	- 1	- 1	-1	-4
341	Insulated wires and cables	2,01	2,03	3,18	0,51	1	1	1	-1	2
342	El. plant and mach.	0,52	0,31	0,72	0,53	-1	- 1	- 1	- 1	-4
344	Telecommunications	0,20	0,29	0,23	0,35	- 1	- 1	- 1	-1	-4
345	El. appl., radio, TV	0,26	0,34	0,07	0,57	- 1	- 1	- 1	- 1	-4
346	Dom. el. appliances	1,44	1,38	1,96	1,24	1	1	1	1	4
347	Lighting	0,52	1,21	1,15	1,61	- 1	1	1	1	2
351	Motor vehicles	1,37	2,77	1,08	1,20	1	1	0	1	3
361	Shipbuilding	0,73	0,45	27,20	1,10	- 1	-1	1	1	0
362	Rolling stock	0,56	0,34	1,64	1,35	-1	-1	1	1	0
364	Aerospace equipment	1,21	0,69	0,43	0,12	1	-1	- 1	-1	-2
372	Medical and surgical									
	equipment	0,18	0,41	0,35	0,20	-1	-1	- 1	-1	-4
417	Spaghetti, etc.	0,00	0,00	1,27	0,41	-1	-1	1	1	-2
421	Chocolate, confectionery	0,74	0,49	3,24	0,87	-1	-1	1	-1	-2
425	Wine, sparkling wine	20,10	48,73	336,69	4,00	1	1	1	1	4
427	Brewing, malting	0,07	0,10	3,25	0,73	-1	-1	1	-1	-2
428	Mineral water and soft									
	drinks	0,28	0,17	1,79	1,98	-1	-1	1	1	0
431	Woollen goods	1,76	0,26	3,45	0,29	1	-1	1	- 1	0
432	Cotton goods	2,31	0,45	0,79	0,91	1	-1	- 1	0	-1
438	Carpets	0,61	0,24	1,68	0,46	-1	- 1	1	- 1	-2
451	Footwear	16,05	1,39	14,06	1,53	1	1	1	1	4
453	Clothing	0,90	0,40	0,95	0,94	- 1	-1	0	0	-2
455	Household textiles	1,80	0,83	1,94	2,37	1	-1	1	1	2
481	Rubber goods	1,27	1,64	6,21	1,11	1	1	1	1	4
491	Jewellery	1,49	0,46	2,27	0,60	1	- 1	1	-1	0
493	Photo, cine labs	0,97	1,35	0,47	2,13	0	1	- 1	1	1
494	Toys, sports goods	3,21	1,94	0,81	1,47	1	1	-1	1	2
	Total sensitive sectors	0,78	1,08	0,89	0,83	- 1	0	- 1	- 1	- 3
	Total manufacturing	0,78	1,00	0,90	1,00	- 1	0	0	0	- 1

Note: This table has been requested by the Commission in order to prepare a synthesis at Community level.



Annex 2.3.

Indicator of dynamic competitivity in 40 sensitive sectors

NACE	Sector	▲ intra X/M ¹	▲ intraSI ²	▲extraX/M ³		Score		Overall
code					1	2	3	assessment
	Class	21.5	2	40.5	1	1	1	1
247	Glass	-21,5	3	- 49,5	-1	1	- 1	-1
248	Ceramics	-4,2	35	-27,4	0	1	-1	0
251	Basic industrial chemicals	- 25,2	-6	- 30,3	-1	-1	-1	- 3
256	Oth. chem. prod. for ind. and ag.	- 20, /	0	- 25,1	-1	-1	-1	- 3
257	Pharmaceuticals	- 17,1	17	-0,7	- 1	1	0	0
315	Boilermaking	-46,8	14	- 5,6	-1	1	- 1	-1
321	Agricultural machinery	-28,7	9	-70,3	-1	1	- 1	-1
322	Mach. tools	-22,1	15	- 57,7	- 1	1	- 1	-1
323	Textile machinery	-26,1	3	-38,4	-1	1	-1	- 1
324	Food proc. and chem. plant	-24,0	7	-31,2	-1	1	-1	-1
325	Mining, met. plant	-20,5	8	-39,1	-1	1	-1	-1
326	Mining, met. and rel. plant	-2,9	15	-40,3	0	1	-1	0
327	Mech. trans.							
	Wood, paper and leath. mach.	- 35,8	1	-50,4	- 1	1	-1	-1
330	Comp. office equip.	15,1	-25	- 49,7	1	-1	-1	-1
341	Insulated wires and cables	-15,1	41	-67,4	- 1	1	-1	- 1
342	El. plant and mach.	-20,6	- 1	-33,7	-1	- 1	- 1	- 3
344	Telecommunications	-11,3	3	-25,6	- 1	1	- 1	- 1
345	El. appl., radio, TV	-33,0	0	-25,8	- 1	0	-1	- 2
346	Dom. el. appliances	-39,7	4	-60,3	-1	1	-1	-1
347	Lighting	-19,1	12	-48,6	- 1	1	-1	-1
351	Motor vehicles	-48,2	- 32	- 54,7	- 1	-1	-1	- 3
361	Shipbuilding	-86,5	- 76	-88,7	- 1	-1	-1	- 3
362	Rolling stock	-64,8	-17	1,8	- 1	- 1	0	-2
364	Aerospace equipment	52,1	51	- 34,2	1	1	-1	1
372	Medical and surgical equipment	21,4	10	50,6	1	- 1	1	1
417	Spaghetti, etc.	-81,8	0	-29,7	- 1	0	- 1	-2
421	Chocolate, confectionery	-50,5	6	-43,1	- 1	1	- 1	- 1
425	Wine, sparkling wine	-66,6	138	-50,7	-1	1	- 1	- 1
427	Brewing, malting	-16,9	1	97,8	- 1	1	1	1
428	Mineral water and soft drinks	-54,1	16	28,8	- 1	1	1	1
431	Woollen goods	-51,3	- 1	-35,4	-1	- 1	-1	- 3
432	Cotton goods	-73,4	- 3	-65,7	- 1	- 1	- 1	- 3
438	Carpets	-36,3	7	-67,8	- 1	1	- 1	-1
451	Footwear	-37,8	4	-67,9	-1	1	-1	-1
453	Clothing	-47,7	5	- 54,6	-1	1	-1	- 1
455	Household textiles	-53,4	- 3	-49,6	-1	-1	-1	- 3
481	Rubber goods	-37,9	-9	-34,0	-1	-1	- 1	- 3
491	Jewellery	87,8	3	182,7	1	1	1	3
493	Photo, cine labs	43,3	5	6,6	1	1	1	3
494	Toys, sports goods	-12,9	- 5	- 51,8	- 1	- 1	- 1	- 3
	Total 40 sensitive sectors	- 26,5	0	- 39,2	- 1	-1	- 1	- 3
	Total manufacturing	-23,9	0	-40,7	- 1	0	-1	-2

1986-87 average (X/M) intra — 1984-85 average (X/M) intra. SI intra 1987 — SI intra 1985. 1986-87 average (X/M) extra — 1984-85 average (X/M) extra.

Note: This table has been requested by the Commission in order to prepare a synthesis at Community level.

Bibliography

Atkins Management Consultants (1988), 'The cost of non-Europe in public-sector procurement', *Research on the cost* of non-Europe, EC Commission.

Atkins Management Consultants (1988), 'The cost of non-Europe: some case-studies on technical barriers', *Research* on the cost of non-Europe, EC Commission.

Buigues, P. and Ilzkovitz, F. (1988), The sectoral impact of the internal market, EC Commission.

Caves, R. (1985), Multinational enterprise and economic analysis, Cambridge University Press.

Corden, W. M. (1984), 'Normative theory of international trade', in Jones, R. W. and Kenen, P. B. (eds), *Handbook of international economics*, North Holland.

EC Commission (1985), 'Completing the internal market', White Paper from the Commission to the European Council, Brussels.

EC Commission (1988), 'The completion of the internal market. A survey of European industry's perception of the likely effects', in *Research on the cost of non-Europe*, Vol. 3, EC Commission.

EC Commission (1989), Panorama of EC industry.

Emerson, M. et al. (1988), 'The economics of 1992. An assessment of the potential economic effects of completing the internal market of the European Community', European Economy No 35, EC Commission, Brussels.

Fariñas, J. C. and Martín, C. (1989), La ventaja comparativa de España y las exportaciones netas de productos manufacturados, Fundación Empresa Pública.

Geroski, P. and Jacquemin, A. (1985), 'Industrial change, barriers to mobility and European industrial policy', *Economic policy*, Vol. 1.

Gonzalez, A. (1987), 'Nueva encuesta de inversión en la industria: primeros resultados', Miner.

Helpman, E. and Krugman, P. (1985), Market structure and foreign trade: increasing returns, imperfect competition and international economy, Cambridge, Massachusetts.

Hooper, P. and Larin, K. (1988), 'International comparisons of labor costs in manufacturing', *International Finance*, Discussion Paper No 330. Jacquemin, A. (1987), The new industrial organization. Market forces and strategic behaviour, Oxford University Press.

Jacquemin, A.; Buigues, P. and Ilzkovitz, F. (1989), 'Horizontal mergers and competition policy in the European Community', *European Economy* No 40, May 1989, EC Commission.

Jones, R. and Kenen, P. (eds) (1984), Handbook of international economics, North Holland.

Krugman, P. (ed.) (1987), Strategic trade policy and the new international economics, MIT Press.

MAC Group (1988), 'The cost of non-Europe: technical barriers', *Research on the cost of non-Europe*, EC Commission.

Martín, C. (1989), 'Spain's foreign trade and industrial structure: the effects of EC membership and the single European market of 1992', report prepared for the EC Commission.

Nerb, G. (1988), 'The completion of the internal market: a survey of European industry's perception of the likely effects', *Research on the cost of non-Europe*, EC Commission.

OECD (1988), Main science and technology indicators, Paris.

Padoa-Schioppa, T., et al. (1987), Efficiency, stability and equity (A strategy for the evolution of the economic system of the European Community), Oxford University Press.

Posner, M. V. (1961), 'International trade and technical change', Oxford Economic Papers, Vol. 13.

Pratten, C. (1987), 'A survey of the economies of scale', *Research on the cost of non-Europe*, EC Commission, Brussels.

Robson, P. (1987), The economics of international integration.

Segura, J.; Martín, C.; Rodriguez, L. et al. (1989), La industria Española en la crisis 1978/1984, Alianza Editorial, Madrid.

Vernon, R. (1966), 'International investment and international trade in the product cycle', *Quarterly Journal of Economics*, Vol. 80.

Vernon, R. (1979), 'The product cycle hypotheses in a new international environment', Oxford Bulletin of Economics and Statistics, Vol. 41.

Contents

1.	The sensitive sectors in France	227
1.1.	Identification and level of sensitivity	227
1.2.	The share of the 40 sensitive sectors in French industry	230
1.3.	Sectoral analysis of the share of the 40 sensitive sectors in French industrial employment and value added	230
2.	French competitiveness in the sensitive sectors	231
2.1. 2.1.1. (a) (b) 2.1.2. 2.1.3. 2.1.4. 2.2.	Intra-Community trade Coverage ratio The strong points The stable sectors and the weak points Levels of specialization Price indices Growth in demand Extra-Community trade	231 231 233 234 234 234 236 237 238
3. 3.1. 3.1.1. 3.1.2. 3.2.	Dynamic adjustments Assessment of company strategies The position of French firms The profitability of French firms Medium-term effects of the internal market	239 239 240 240 242

Bibliography

246

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List of tables

1.	The 40 sensitive sectors identified by the methodology	228
2.	Comparison between the sensitive sectors in the Community and in France	229
3.	The share of the 40 sectors: importance in France of the 40 sensitive sectors identified at Community level and at national level	230
4.	Classification of the sensitive sectors according to their share of French industrial employment in 1985	232
5.	Classification of the sensitive sectors according to their share of the value added of French industry in 1985	232
6.	Share of weak points, strong points and sectors in a stable position	233
7.	The weak and strong points of French industry in the sensitive sectors	235
8.	Classification of the sensitive French sectors according to their price index in 1985	237
9.	Development of demand in the sensitive sectors of French industry	238
10.	Coverage ratio of France for the non-EC countries	239
11.	Distribution of the world's top 500 enterprises per country of origin	240
12.	The 40 largest European enterprises in 1987	241
13.	European ranking of French enterprises in 1987	241
14.	Analysis of financial profitability by major sector	242
15.	Indicators of static competitiveness in the sensitive sectors identified at national level	244
16.	French industries in the context of 1992	245

List of graphs

1.	Distribution of industrial employment in the French sensitive sectors	
	relative to their static competitiveness	243
2.	French industries in the context of 1992	243

1. The sensitive sectors in France

1.1. Identification and level of sensitivity

BIPE experts examined first whether there were any sectors that were sensitive only in France and which would not have been included in the list of 40 sectors identified at Community level.

This first stage involved research into the (possible) existence of specific French characteristics with respect to the 250 industrial or commercial products which the BIPE monitors regularly in compiling its medium-term forecasts. Specifically French characteristics could, for example, have included technical barriers particular to France or the application of quotas—in areas where France is alone in employing this type of market protection—as well as of specific dispensational measures. Any of these specific characteristics would make what was a non-sensitive sector for the Community a sensitive one for France. Regular monitoring undertaken by the BIPE has, however, shown that none of the industrial sectors fits this picture.

The survey then turned to the sectors which were defined in the reference study (see Buigues and Ilzkovitz [1]) as having a medium level of non-tariff barriers and which were not classified as very sensitive. Analysis of the statistical data for these sectors did not succeed in pinpointing any sectors which would have been very sensitive for France while not being so for the rest of the Community.

The study subsequently undertaken has therefore addressed only those 40 sectors classified at Community level as most sensitive to the impact of the 1992 internal market. In a second stage, it was determined whether the degree of sensitivity of these 40 sectors is the same for France as for the Community. In order to assess the effects of 1992, the BIPE analysed what the impact of the single market would be according to the following four criteria:

- (i) the elimination of customs controls and fiscal harmonization;
- (ii) technical standards;
- (iii) subsidies and public procurement;
- (iv) capital flow and company law.

Each of these criteria was attributed a score between 0 and 2 according to the importance of the impact of 1992 (see Box).

The information gathered to evaluate the sensitivity of industrial sectors derives from enquiries among several enterprises undertaken by the BIPE in the framework of the 'Detailed sliding projections' (a medium-term forecast involving 250 to 300 industrial products and services). It should be mentioned that these projections involve an analysis which integrates an assessment not only of past and current effects but also of the future impact of 1992.

At the end of this investigation, the group of 40 sectors was subdivided into, on the one hand, those sectors deemed very sensitive, i.e. those where the overall score is higher than or equal to 3, and, on the other hand, those sectors deemed moderately sensitive. This subdivision established by the BIPE for France was then compared with that prepared for the Community as a whole.

The four criteria as applied to France:

The elimination of custom controls and fiscal harmonization

Major impact if trade quotas exist today. Here it is a question of assessing the impact on trade of the abolition of import quotas which restrict penetration of the French market (removal of customs controls).

Major impact if the progressive approximation of VAT rates is to have an impact for France. This criterion involves assessing the importance of increases in market size following the reduction in VAT rates (fiscal harmonization).

Technical standards

Major impact if the sector is to be subject to standards for which there is a strong application of the mutual recognition procedure or the establishment of joint standards. This criterion involves determining the number of technical trade barriers which would disappear given the harmonization of standards and the development of a mutual recognition of standards and regulations.

Subsidies and the volume of public procurement

Major impact if significant public procurement in France exists today and/or if specific aid is granted to certain sectors. Here it is a question of determining the extent of modifications affecting certain protected markets in terms of trade, organization of demand, etc.

Capital flow and company law

Major impact if there are only a few international companies active on the French market today and/or if European companies can become established in the future. This criterion involves assessing whether capital flows along with changes in company law imposed by the opening up of the single market will facilitate the economic development path of an industrial structure characterized more or less by international enterprises in sectors barely affected by the world market at the moment.

The 40 sensitive sectors identified by the methodology

NACE code	Sectors	Removal of customs control and tax harmonization	Technical standards	Subsidies and public procurement	Flow of capital and company law	Global score
330	Office and data-processing machinery	0	1	1	1	3
334	Telecommunications	0	2	2	1	5
372	Medical and surgical equipment	0	1	2	1	4
257	Pharmaceutical products	1	2	1	0	4
315	Boilermaking	0	2	1	1	4
362	Rolling stock	0	1	2	1	4
425	Champagne, sparkling wines	1	2	1	0	4
427	Brewing and malting	1	2	1	1	5
428	Soft drinks, water	1	1	0	1	3
341	Insulated wires and cables	0	0	2	1	3
342	Electrical machinery	0	1	2	1	4
361	Shipbuilding	0	0	1	0	1
417	Spaghetti, macaroni, etc.	0	2	1	0	3
421	Cocoa, chocolate, sugar confec.	1	2	0	1	4
247	Glass and glassware	0	1	0	0	1
248	Ceramic goods	0	0	0	1	1
251	Basic industrial chemicals	0	2	0	0	2
256	Other ind. & agric. chem. prods	0	2	0	0	2
321	Machine & other tools	0	1	0	1	2
322	Textile mach.	0	1	0	1	2
323	Mach. for food, chem. & related ind.	0	1	0	1	2
324	Agricultural mach.	0	1	0	1	2
325	Plant for mines etc.	0	1	0	1	2
326	Transmission equip.	0	1	0	1	2
327	Equip. for spec. branches of industries	0	1	0	1	2
345	Radio, TV	2	2	0	1	5
346	Domestic-type electrical applicances	1	0	0	1	2
347	Lighting	0	0	0	0	1
351	Automobiles	2	2	0	0	4
364	Aerospace equipment	0	0	1	1	2
431	Wool industry	0	1	0	1	2
432	Cotton industry	0	1	0	1	2
438	Carpets	1	0	0	0	1
451	Footwear	1	0	0	1	2
453	Ready-made clothing & access.	2	0	0	0	2
455	Household textiles	1	0	0	1	2
481	Rubber goods	0	0	0	1	1
491	Jewellery	1	1	0	0	2
493	Photog. & cinemat. labs	0	0	0	0	1
494	Toys & sports goods	1	1	0	0	2

Note: Score per criteria: 0 =slight or no impact; 1 =major impact; 2 =very major impact. Global score: 0 or 1 =slightly or not sensitive; 2 =sensitive; 3 and above = very sensitive.

These sectors were included as sensitive because there are non-tariff barriers at Community level.

France

This comparison between the three groups which are deemed very sensitive at the European level (Groups 1, 2 and 3) and the sectors deemed very sensitive at the French level by the BIPE (score higher than or equal to 3, see Table 1) illustrates that the sectors viewed as very sensitive at the European level are frequently seen in the same way at the French level (see Table 2).

There is, however, one exception, namely shipbuilding. This sector would appear unaffected by the completion of the European internal market except for the fact that there are sizeable State subsidies in this area. The BIPE has determined that the impact here will be moderate because the shipbuilding sector is highly internationalized and is above all a market already operating in accordance with rules discussed at the Community level (particularly with respect to the volume of authorized aid).

Conversely, if the majority of sectors deemed relatively less sensitive at the European level (Group 4) are similarly classified for France, two sectors (the motor vehicle sector and electronic equipment, radios, TV, i.e. consumer electronics)

Table 2

Comparison between the sensitive sectors in the Community and in France

France	Sectors deemed very sensitive	Sectors deemed moderately sensitive
Sectors deemed very sensitive (score > 3)	Office and data-process. mach. (G 1) Telecommunications (G 1) Medical & surg. equip (G 1) Pharmaceutical products (G 2) Boilermaking (G 2) Rolling stock (G 2) Champagne, sparkling wines (G 2) Brewing & malting (G 2) Soft drinks, water (G 2) Insulated wires & cables (G 2) Electrical mach. (G 3) Spaghetti, macaroni, etc. (G 3)	Shipbuilding (G 3)
Sectors deemed moderately sensitive (score < 3)	Radio, TV (G 4) Automobiles (G 4)	Glass and glassware (G 4) Ceramic goods (G 4) Basic ind. chemicals (G 4) Other chem. products (G 4) Agric. mach. (G 4) Motor vehicles (G 4) Machine & other tools (G 4) Mach. for food, chem. & related industries (G 4) Plant for mines, etc. (G 4) Transmission equip. (G 4) Equip. for spec. branches of ind. (G 4) Domestic-type electrical appliances (G 4) Lighting (G 4) Wool industry (G 4) Cotton industry (G 4) Carpets (G 4) Footwear (G 4) Ready-made clothing (G 4) Household textiles (G 4) Rubber goods (G 4) Jewellery (G 4) Photog. & cinemat. labs (G 4) Toys & sports goods (G 4) Aerospace equipment (G 4)

are exceptions. These two sectors were deemed more sensitive to the impact of the single market in the case of France than in that of the Community as a whole.

The main specific characteristic of France lies in the much greater sensitivity of these two sectors as compared with the situation in the Community as a whole.

1.2. The share of the 40 sensitive sectors in French industry

As a first step, a comparison was made of the importance of the 40 sectors classified in French and European industry. This comparison was undertaken in terms of the share of these 40 sectors in value added and industrial employment in 1985.

The relative importance of these 40 sectors is more or less the same for both the Community and France (although slightly higher for the latter). In fact, the 40 sensitive sectors represent 50 % of industrial employment in the Community and 51 % in France (see Table 3).

Furthermore, the share of these 40 sectors in industrial value added is in both cases close to 50 % (49 % for the Community and 53 % for France).

1.3. Sectoral analysis of the share of the 40 sensitive sectors in French industrial employment and value added

A sector-by-sector analysis of the distribution of industrial employment is fruitful to the extent that the sectors most sensitive to 1992 account for a very significant share of industrial employment (the motor vehicle industry, for example).

Table 3

The share of the 40 sectors : importance in France of the 40 sensitive sectors identified at Community level

Sensitive sectors	Share of industrial value added (1985)	Share of industrial employment (1985)	1987 imports intra 1987 exports extra ¹	Intra- penetration rate ²
High-technology public procurement Traditional public-procurement markets or	6,1	3,9	67	24
regulated markets	5,8	4,6	214	4
Sectors in competition with the NICs	6,0	6,4	222	11
Sectors with average NTB	35,53	35,93	164	22
Total for sensitive sectors	53,4	50,8	143	19
Industry total	100,0	100,0	180	19

1987 imports (intra-EC)/internal market 1985. Not included: household textiles.

Importance of sensitive sectors identified at national level

Sensitive sectors	Share of industrial value added (1985)	Share of industrial employment (1985)	1987 imports intra 1987 exports extra ¹	Intra- penetration rate ²
High NTB ³	22,7	22,0	137	12
Average NTB ³	30,74	28,84	146	25

1987 imports (intra-EC)/imports 1987 (extra-EC).

1987 imports (intra-EC)/internal market 1985. Total score 3 in Table 1 for high NTB and total score < 3 for average NTB. Not included: household textiles

Note: The 40 sensitive sectors identified at national level after analysis are the same as those adopted at Community level

Seventeen sectors have a share greater than 1% of total French industrial employment, accounting for 40,6% of total employment (Table 4). The first five alone amount to more than a fifth of total French industrial employment.

Among these sectors accounting for a high proportion of total manufacturing employment, one finds the high-technology sectors (aerospace, office and data-processing machinery, and telecommunications), but also certain consumer goods industries (domestic-type electrical appliances, electronic appliances, radio, TV, clothing, footwear).

The sector most important in terms of employment is that of the 'manufacture and assembly of motor vehicles (including trucks) and the manufacture of motor vehicle engines' (NACE 351).

The share of this sector in French industrial employment was 6,6 % in 1985. It thus represents a major sector, despite the fact that employment dropped regularly within it during the first half of the 1980s (from 1980 to 1985, the number of jobs fell at an average annual rate of 4,1 %).

The same was true for the clothing (-3,9% per year) and telecommunications (-2,7%) sectors.

Information technology and pharmaceutical products, which are among the most important sectors, experienced a slight rise.

For France, the 40 sensitive sectors thus represent a slightly greater share in value added than in the Community (53 % as opposed to 49 %).

In the majority of cases the most significant sectors in terms of value added are also the most significant in terms of employment (see Table 4). Nevertheless, certain more specific points should be mentioned.

The motor vehicle sector remains the leading sector in order of importance (6,1 % of the industrial value added, which represents a percentage slightly lower than that expressed in terms of employment).

By contrast, aerospace, which only has a 2,4% share in industrial employment, enjoys a more substantial share in industrial value added (3,9%).

Two groups of sectors may be distinguished: on the one hand, those which are more significant in terms of employment (for instance the clothing and footwear or motor vehicle sectors); on the other hand, those more numerous which are weighted stronger in terms of value added than in terms of employment (such as aerospace equipment, dataprocessing machinery, telecommunications, pharmaceutical products, basic industrial chemicals).

Furthermore, it is interesting to note that with the exception of the sectors comprising the agricultural and food industries (champagnes and sparkling wines; brewing and malting; bottled waters and soft drinks; spaghetti, macaroni, etc.; cocoa, chocolate and sugar confectionery), the most sensitive sectors (see Table 1) are highly capital-intensive sectors requiring very substantial non-material investments in R&D. Thus, data-processing machinery, telecommunications, and pharmaceutical products are included in this group.

2. French competitiveness in the sensitive sectors

This section is devoted primarily to an analysis of the competitiveness of France $vis-\dot{a}-vis$ its Community partners in the 40 sensitive sectors.

To begin this analysis, we will study coverage ratios and their evolution, specialization indices and the terms of trade. Extra-Community trade indicators will also be taken into account.

2.1. Intra-Community trade

2.1.1. Coverage ratio

Before undertaking an analysis of French competitiveness in terms of its manufacturing industry's strong and weak points, it should be noted that the French position deteriorated between 1980 and 1987. In fact, the vast majority of the 40 sensitive sectors experienced a decline in their intra-Community coverage ratio during this period: 26 sensitive sectors experienced an occasionally major decrease in the coverage ratio while only 14 showed improvements. We therefore have a relatively classic picture of an almost comprehensive deterioration in French external trade during the 1980s. Among the sectors whose position is deteriorating, as shown in Table 7, are strong points such as pharmaceutical products, rolling stock, and aerospace equipment, together with almost all the stable sectors (excluding telecommunications), but among these the decline is especially visible in the motor vehicle industry which represents a substantial sector in employment terms.

Overall, the analysis of intra-Community trade indicates that France is in a delicate position, to the extent that the 23 sensitive sectors comprising its weak points represent

Classification of the sensitive sectors according to their share of French industrial employment in $1985^{\rm l}$

Table 5

Classification of the sensitive sectors according to their share of the value added of French industry in 1985

NACE code	Sectors	Share of industrial employement (%
351	Motor vehicles	6.6
342	Flectrical mach	4.0
453	Ready-made clothing	4,0
345	Radio TV	3.5
364	Aerosnace equipment	2,5
244	Telecommunications	2,0
3 44 401	Publications	2,4
401 251	Rubber goods	2,1
251	Basic ind. chemicals	2,0
315	Bollermaking	1,8
257	Pharmaceutical products	1,6
256	Other chem. prods for ind. & agric.	1,6
451	Footwear	1,6
432	Cotton industry	1,5
325	Plant for mines etc.	1,4
247	Glass & glassware	1,4
330	Office & data-processing mach.	1,2
346	Domtype electrical appliances	1,1
361	Shipbuilding	0,9
324	Mach. for food, chem. & related industries	0,9
321	Africultural mach.	0,8
421	Cocoa, chocolate & sugar confec.	0,8
431	Wool industry	0,8
248	Ceramic goods	0,7
322	Machine & other tools	0.6
326	Transmission equipment	0.6
341	Insulated wires & cables	0.6
494	Toys & sports goods	0.5
347	Lighting	0,3
362	Rolling stock	0,3
372	Medical & surgical equip	0,3
125	Sparkling wines champagne	0,3
127	Brewing & malting	0,3
128	Soft drinks	0,5
101	Jewellery	0,5
323	Textile machinery	0,5
327	Other machinery & equin	0,2
138	Carnets	0,2
103	Phot & cinemat equip	0,2
117	Spaghetti macaroni etc	0,2
455	Household textiles	n.a.
Гotal		50,8

16,5 % of industrial employment and more than 17 % of industrial value added, as compared with 12,4 % and 16 % respectively for the strong points (see Table 6).

code	Sectors	share of industrial value added (%)
351	Motor vehicles	6,1
364	Aerospace equipment	3,9
342	Electrical mach.	3,8
345	Radio, TV	3,5
251	Basic ind. chem.	3,4
330	Office & data-processing mach.	3,1
344	Telecommunications	2,7
453	Ready-made clothing	2,4
257	Pharmaceutical products	2,3
256	Other chem. prods for ind. & agric	2,0
481	Rubber goods	1,9
315	Boilermaking	1,6
247	Glass and glassware	1,5
325	Plant for mines etc.	1,4
451	Footwear	1,3
432	Cotton industry	1,1
324	Mach. for food, chem. & rel. ind.	1,0
346	Domtype electrical appl.	0,9
421	Cocoa, chocolate & sugar confec.	0,9
248	Ceramic goods	0,7
321	Agricultural mach.	0,7
431	Wool industry	0,7
322	Machine & other tools	0,6
326	Transmission equipment	0,6
341	Insulated wires & cables	0,6
361	Shipbuilding	0,6
425	Champagnes, sparkling wines	0,6
427	Brewing & malting	0,5
428	Soft drinks, water	0,5
494	Toys & sports goods	0,4
347	Lighting	0,3
362	Rolling stock	0,3
372	Medical & surgical equip.	0,3
491	Jewellery	0,3
323	Textile machinery	0,2
438	Carpets	0,2
493	Phot. & cinemat. equip.	0,2
327	Equip. for spec. branches of ind.	0,2
417	Spaghetti, macaroni, etc.	0,1
455	Household textiles	n.a.
Total		53,4

The importance of both employment and value added in those sensitive sectors which have a stable performance (21,9% and 20% respectively) should be noted. It is often in these sectors that one finds manufacturers with the least positive views of the impact of 1992 on their sector.

Share of weak points, strong points and sectors in a stable position

	Number of sectors	Share of industrial value added	Share of industria employment
Weak points	23	17,41	16,51
Stable position	6	20,0	21,9
Strong points	11	16,0	12,4

¹ Not included: household textiles.

(a) The strong points (Table 7)

The strong points belong primarily to two groups of industries. The first homogeneous group comprises the 'traditional' industries, in which France enjoys a special position due to either a high brand image (champagne, sparkling wines) or substantial know-how (such as the bottled waters and soft drinks sector or rubber products sector). The second group comprises certain heavy equipment industries that serve public procurement needs: aerospace equipment, railway rolling stock, boilermaking. These are generally protected sectors¹ in which substantial investment in industrial plant took place and where the role of public authorities has been relatively important (either directly or indirectly since, for example, the sectors supplied were public procurement or could be considered as such). Thus:

- (i) aerospace equipment has, without a doubt, benefited from the existence of public or quasi-public procurement (Air France, Air Inter, the Armed Forces, etc.);
- (ii) the rolling stock sector has been able to rely on the SNCF for its development;
- (iii) the boilermaking sector (or at least that of the large boilermakers) has at its disposal a substantial market with the development of nuclear electricity generating stations by EDF.

Several strong points have high levels of intra-Community trade. Two categories of explanatory factors emerge for these sectors. For some of the sectors involved, internationalization (and Europeanization) is already well advanced because national standards are relatively compatible if not identical. This is the case of, for example, the data-processing machinery or rubber tyre tractors. For the latter, the increase in concentration which has become more pronounced in recent years (particularly the takeover of Uniroyal Europe and Semperit by the German tyremaker Continental, and of Dunlop by Sumitomo) has resulted in the predominance of a few suppliers on the Community market. Their strategy, whether with respect to investment or commercial policy, is no longer formulated on a country-by-country basis but rather at the Community level.

The particular position of office and data-processing machinery is due primarily to the situation of IBM France. This subsidiary of the IBM Corporation was the third largest French exporter of electrical and electronic equipment in 1987, with a foreign turnover of almost FF 20 billion. This result indicates the importance of the IBM plants (six factories or laboratories on French territory).

In other sensitive sectors, France enjoys a high brand image placing it in a favourable position for the unification of the European market. Luxury industries, although distributed among different NACE categories (4250, 4510, 4530, 4910, etc.) are a typical example of this category of industry. It should be recalled that luxury industries and related products achieved a surplus balance of FF 34 billion in intra- and extra-Community trade in 1987. But there are still not enough of these industries to compensate for the negative overall impact of the weak points.

With the notable exception of the pharmaceutical industry, which has experienced difficulties in France due to the insufficient level and results of its R&D efforts (compared with those of the German, Swiss, or Japanese pharmaceutical industries) which has resulted in a decline in the number of new drug launches, the strong points of France should benefit from the completion of the European internal market.

Naturally, the relatively substantial size of French public procurement markets forces a number of these sectors to step up their efforts to enhance productivity in order to, on the one hand, withstand the competition of new suppliers on the French market and, on the other hand, to penetrate the markets of other countries within the Community. The contract signed by Alsthom in Spain for the sale of highspeed trains (TGV) can be viewed in this context. Community policy on the development of a trans-European TGV network represents an appreciable opportunity for one of the rare strong points of French industry.

¹ Their intra-EC import penetration ratio is particularly low: it amounts to 1% for boilermaking, 3% for aerospace equipment, and 4% for rolling stock.

The pharmaceutical industry is in an odd situation among the so-called strong sectors. The assessment in terms of its commercial situation (trade balance, coverage ratio) has given rise to a positive prediction on the impact of 1992 for the French industry. The sector is, however, currently protected (an intra-EC import penetration rate of 6) and thus other factors than the coverage ratio must be considered.

The reports submitted to the public authorities have therefore very clearly indicated that the situation is extremely delicate, requiring a major and rapid response if there is to be hope of maintaining (i.e. bolstering) the French pharmaceutical industry. The French pharmaceutical industry has a handicap in that the size and international linkages of its laboratories are too small.

A lack of response on the part of French laboratories would most likely lead to a marked decline in the French position in this domain by the beginning of the twenty-first century. Infact, the open borders of 1992 could succeed in bolstering the position of German or UK laboratories on the French market, the second largest market in the Community. Nevertheless, this does not appear to be the most likely scenario. We find that a willingness to respond is emerging, which should have some positive consequences despite the existence of undeniable weaknesses.

One could thus witness, in the medium term, an integration of the small and medium-sized laboratories within the French leaders (Rhône-Poulenc, Sanofi, etc.) as well as the emergence of a few medium-sized laboratories specialized in a number of specific therapeutic areas. At the same time, the internal market of 1992 could foster the trend of takeovers of small and medium-sized French laboratories by international consortiums. In such a context, the establishment of Community cooperation agreements cannot be excluded.

It is interesting to note that in several sectors considered as strong points there will have to be in the medium term rationalization at the European level due to surplus capacity and the existence of too many producers. For these sectors French supply did not appear to be that badly placed. The KWU and Framatome accord in the nuclear boilermaking sector demonstrates this, as does the (one-third) capital share of Alsthom-Atlantique in the German boilermaker EVT.

The emergence of Alsthom as the principal producer of rolling stock following the takeover of the rail activities of Jeumont-Schneider may enable France to bolster its European position in this sector.

234

(b) The stable sectors and the weak points (Table 7)

The stable sectors and the weak points are sectors involving both equipment goods and basic consumer goods. Here one finds the extreme examples of specialization in French industry come together in capital goods (machine tools, equipment for the agricultural and food industries, etc.) and in consumer goods (footwear, electronic appliances, radio and TV, clothing, etc.).

For the majority of these sectors, the level of intra-Community trade is already relatively high and, in particular, the competition among imports from other EC countries is strong. Thus the import penetration rate is greater than a third of the domestic markets for chemical products, mechanical engineering products, and footwear. For these sectors, the single market of 1992 should certainly boost French imports from other Community countries, but it would not appear that the most substantial consequences will occur at this level (their markets would appear already highly internationalized). The most notable exception to this rule is that of spaghetti, macaroni, etc. due to the law governing the purity of pasta products. According to this law, spaghetti, macaroni, etc. may not be made in France or Italy except with hard wheat, whereas in the Federal Republic of Germany the authorized addition of eggs and additives makes it possible to compensate for the deficiencies of soft wheat. Moreover, hard wheat pasta is more expensive than pasta made from soft wheat. However, as the Court of Justice ruled against Italy in July 1988 in its efforts to forbid soft wheat pasta products, trade should develop between Community countries in the medium to long term.

In certain sectors, one of the conditions for the internal market to have positive consequences for sensitive sectors comprising the weak and stable points lies in the continuation of efforts to renew industrial structures as undertaken by French firms. This is, for example, the case in the motor vehicle industry (CR = 101 %) which is currently in an uncertain position since its restructuring efforts (modernizing production facilities, restoring profit margins, updating its range of models) are as yet incomplete. The issue of restructuring action on the part of French manufacturers will be discussed in section 3.

2.1.2. Levels of specialization (Table 7)

Specialization indices facilitate the identification of sensitive sectors in which France has a higher level of specialization with respect to Community countries as a whole. Overall, France's situation is not devoid of potential. Indeed, al-

The weak and strong points of French industry in sensitive sectors

Weak points					Balanced position					Strong points				
NAC	E Sectors	CR	▲CR	SI	NACE	Sectors	CR	▲ CR	SI	NACE	Sectors	CR	▲ CR	SI
372	Medical equipment	55	123	79	344	Telecommunications	90	115	101	330	Data processing, office machinery	120	140	118
341	Insulated wires & cables	63	52	72	342	Electrical equipment	97	88	124	257	Pharmaceutical products	151	87	118
417	Spaghetti, macaroni, etc.	11	63	30	247	Glass & glassware	95	83	131	315	Boilermaking	134	108	88
421	Cocoa, choc., sugar confec.	63	92	83	345	Radio, TV	91	96	115	362	Rolling stock	150	75	111
248	Ceramic goods	44	127	77	351	Motor vehicles	101	60	101	425	Champagne, sparkling wines	265	213	178
251	Basic industrial chemicals	86	95	118	453	Ready-made clothing	100	88	83	427	Brewing & malting	128	135	125
256	Other chemical products	71	96	106		, ,				428	Soft drinks, water	135	59	193
321	Agricultural machinery	39	85	84						361	Shipbuilding	166	106	78
322	Machines & other tools	40	82	56						364	Aerospace	192	44	111
323	Textile machinery	57	124	72						431	Wool industry	195	85	163
324	Mach. for food, chemical &									481	Rubber goods	139	104	170
	related industries	43	94	64										
325	Plant for mines, etc.	68	73	101										
326	Transmission equipment	82	111	113										
327	Equip. for special branches													
	of industry	39	86	49										
346	Domestic electrical appl.	51	74	80										
347	Lighting	50	118	84										
432	Cotton industry	78	95	94										
438	Carpets	25	50	34										
451	Footwear	43	61	49										
455	Household textiles	42	65	56										
491	Jewellery	56	155	20										
493	Photograph. & cinematogr.													
	equipment	67	188	119										
494	Toys & sports goods	56	84	74										

ACR = Variation in coverage ratio overSI = Balassa specialization index in 1987.Variation in coverage ratio between 1980 and 1987 (1980 = 100).

though the number of sectors in which France appears more specialized is low, these sectors nevertheless comprise 26 % of value added.

A detailed analysis of the sectors in which French industry appears specialized enables the identification of key sectors which will achieve satisfactory conditions in preparation for the total abolition of intra-Community borders.

Thus, France's good position in the rolling stock sector does not depend solely on the major world position of Alsthom, but depends equally on the substantial reorganization of this industry and on the inclusion of leading products in its 5 B

portfolio (such as the TGV, integrally automated underground systems such as the VAL, or bi-level rolling stock.)

The rolling stock sector has in a certain sense already shown the way for other sectors by becoming rapidly involved in radical restructuring in order to adapt to the new market conditions; these include some 10 000 staff cuts between 1980 and 1987, realized closures (Le Mans, Balbigny, Villeurbanne, La Plaine Saint-Denis) or planned ones for 1989 (Raisnes, Aubevoye).

As a result, the reduction in surplus production capacity and the concentration of supply on Alsthom and ANF are strong points in favour of French suppliers with respect to 1992.

Moreover with the sale of SATI (railcar hire) and of Sambre et Meuse (bogies, etc.), ANF has refocused its activities onto a single area in the rolling stock sector.

The product range of French manufacturers is likewise an advantage. Mastering the technology of the TGV should enable France to participate actively in the development of the European TGV network. Thus, Alsthom will deliver 24 trains to Spain for the Madrid-Seville line. Similarly, the development of the northern TGV to the United Kingdom or to Brussels, Cologne, and Amsterdam is a manifestation of France's dominant position as regards this type of railway rolling stock.

Aerospace equipment represents another cornerstone for France in the context of 1992, even if restructuring in this sector is less advanced. The French position in the European Airbus programmes¹ and Arianespace should enable France to approach 1992 under favourable conditions, especially since French manufacturers have taken action to achieve increased productivity.

The shift in concentration among equipment purveyors should also make it possible to maintain the marked French specialization in this European sector. Here a new company has been established in the avionics sector with the grouping together of Thomson AVG, Sfena, Crouzet, and EAS managed by a holding company owned 50/50 by Aérospatiale and Thomson. This company has become the fourth largest in the world behind three American firms (Honeywell/ Sperry, Litton, and Allied) with a turnover of FF 5.5 billion. At the same time, Labinal and Turbomeca have merged their activities, forming a powerful group for small and medium-sized gas turbines in the aerospace sector. Nonetheless, French companies must pursue a policy of restructuring in order to optimize their situation with a view to 1992.

The final strong area of industrial specialization in France that we wish to discuss here is glass. Saint-Gobain has undertaken steps which should make possible a strengthening of the French supply position in the medium term. The French group is currently investing in a new float which will enter operations at the end of 1989. This float is to supply flat glass to the Italian, Swiss and, of course, French markets. Consequently, an improvement in French specialization in the glass sector can be anticipated between now and 1992, especially since Saint-Gobain has embarked on a parallel programme of financial investments. Saint-Gobain has thus acquired the second largest bottle glass manufacturer in Italy (Vetri) and has acquired a 38 % share in the second largest German manufacturer (Oberland) with the likely aim of ultimately becoming the majority shareholder.

To summarize, it would appear that French industry has a tendency to specialize in upmarket products. The relative unsuitability of the available nomenclatures do not, however, permit a thorough treatment of this subject (see N. Haleblat and J.-L. Tavernier [4])

Certain sensitive sectors that account for an appreciable share of industrial employment are characterized by a low specialization ratio (less than 90). This mainly involves the consumer goods sectors with balanced trade accounts (footwear, articles of clothing, domestic-type electrical appliances, etc.) and the capital goods sectors (machine tools, textile machines, machinery for the foodstuff and chemical industries, etc.). These weak points for France in terms of specialization moderate the positive conclusions arising from the French position in railway equipment, glass, etc.

2.1.3. Price indices (Table 8)

In order to assess the price competitiveness of the sensitive sectors, prices in France were compared with the Community average (EUR 9). Given the difficulties in carrying out this calculation, the results should be interpreted with caution.

The comparison shows that prices in France are generally higher than in Europe as a whole. In fact, 15 sectors have a price index of 105 in France (compared with 100 for EUR 9) and these 15 sectors represent a little less than 15% of industrial value added. Only five sectors have a price level significantly lower than that of our European partners (less than 95) and they only account for 9% of industrial value-added.

It would therefore appear that France will, for an initial period, seldom enjoy an advantage as regards price competitiveness. Moreover, for the sectors in which France has an apparently more favourable position in terms of prices, it is not clear that this will be a bonus to the manufacturers of our country. As Debonneuil and Delattre have shown [3], price competitiveness does not explain France's loss of market shares. In their study, they clearly indicate that the change in terms of trade can be explained by a structural effect which results from specialization on products whose relative price is increasing. This factor being positive, there is no reason to look here for the source of France's loss of market shares.

¹ Airbus is expecting to supply approximately one third of the world market in civilian aircraft with the development of an entire new range of planes (A 300, A 310, A 320, A 330, and A 340).

Classification of the sensitive French sectors according to their price index in 1985

NACE code	Sectors	Price index
		1985
432	Cotton industry	144
431	Wool industry	144
427	Brewing & malting	142
324	Machines for food, chemical and related	
	industries	122
327	Equipment for special branches of industry	119
362	Rolling stock	117
247	Glass & glassware	111
248	Ceramic goods	111
341	Insulated wires and cables	110
344	Telecommunications	110
491	Jewellery	109
330	Office & data-processing machinery	108
417	Spaghetti, macaroni, etc.	107
421	Cocoa, chocolate & sugar confectionery	106
346	Domestic-type electrical appliances	106
322	Machinery & other tools	105
323	Textile machinery	104
372	Medical & surgical equip.	104
425	Champagne, sparkling wines	103
493	Photographic & cinematographic laboratories	102
428	Soft drinks, water	102
345	Radio, TV, electronics	101
453	Ready-made clothing	101
451	Footwear	100
361	Shipbuilding	100
438	Carpets	100
494	Toys & sportswear	99
347	Lighting	97
481	Rubber goods	96
321	Agricultural machines	95
351	Motor vehicles	95
325	Plant for mines, etc.	93
315	Boilermaking	88
455	Household textiles	88
364	Aerospace equipment	80
257	Pharmaceutical products	66
342	Electrical machinery	n.a.
326	Transmission equipment	n.a.
256	Other chemical products for industry &	
	agriculture	n.a.
251	Basic industrial chemicals	n.a.
1 The	price index refers to the Community average (FUR 9) which is equal	to 100

The aerospace sector is an example of how a more competitive price no longer necessarily entails a competitive advantage. The competitive factors (and therewith sales on foreign markets) in the civilian branch of the aerospace sector are more likely to be found in more advanced technical performance, greater reliability, and lower running costs than simply in the purchase price of new aircraft. In the military aerospace sector price is even less important as a competitive criterion, although this does not imply that purchasing decisions are totally insensitive to prices.

Conversely, among the markets where France has a price index higher than that of the Community, one often finds consumer goods or semifinished products (goods from the cotton and wool industries, beers and malt, ceramic goods, chocolate, domestic-type electrical appliances). For these goods, price competitiveness is often decisive in gaining market shares.

Furthermore, account must also be taken of the fact that for those products where disparities between prices applied in France and in partner countries are negligible (e.g. footwear and clothing items), there exists in practice an unfavourable price differential between products made in France and extra-EC imports. For certain products, French supply may be very limited since imports satisfy a large proportion of the domestic market demand.

2.1.4. Growth in demand (Table 9)

Table 9 indicates that a large number of the sectors with a coverage ratio lower than 90 have been characterized by a high level of market growth. This problem quite clearly reflects the poor position of French industry. Here we discover France's incapacity to position itself in the international league due to a lack of strong points. In a general sense, one could say that its strong points are at the same time insufficiently dynamic, too few, and poorly distributed throughout the productive system.

In this way, France's position would appear difficult in the capital goods sector (machine tools, medical equipment, machinery for the agricultural and foodstuff industries, etc.) and in sectors where alteration of the product range is essential (e.g. chemical products). To take the example of this latter sector, the deficiencies in refined, specialized, or applied chemical products help to explain the French industry's decline within the Community.

Development of demand in the sensitive sectors of French industry

A		Low ¹		Average ¹		High ¹	
	NACE	Branches	NACE	Branches	NAC code	E Branches	
Weak points	248 326 421 438 491	Ceramic goods Transmission equipment Cocoa, chocolate & sugar confect. Carpets Jewellery	251 256 321 324 325 346 347 432 451 455 494	Basic industrial chemicals Other chemical products Agricultural machinery Machines for food, chem. & rel. ind. Plant for mines, etc. Domesttype electrical appliances Lighting Cotton industry Footwear Household textiles Toys, sportswear	322 323 327 341 372 417 493	Machines & other tools Textile machinery Equipment for special branches of in- dustry Insulated wires & cables Medical & surgical equipment Spaghetti, macaroni, etc. Photographic & cinematographic labs	
	as a % as a %	of value added: 2.7 ² of employment: 2.6 ²	as a % as a %	of value added: 12.5 ² of employment: 11.7 ²	as a % of value added: 2.2 ² as a % of employment: 2.2 ²		
Balanced position			247 342 453 as a % as a %	Glass, glassware Electronic equipment Ready-made clothing of value added: 7.7 ² of employment: 9.4 ²	344 345 351 as a %	Telecommunications Radio, TV Motor vehicles 6 of value added: 12.3 ² 6 of employment: 12.5 ²	
Strong points	361 362 481	Shipbuilding Rolling stock Rubber goods	315 425 427 431	Boilermaking Champagne, sparkling wines Brewing & malting Wool industry	257 330 364 428	Pharmaceutical products Data processing, office machinery Aerospace equipment Water, soft drinks	
	as a % as a %	of value added: 2.8 ² of employment: 3.3 ²	as a % as a %	of value added: 3.4 ² of employment: 3.2 ²	as a % of value added: 9.8 ² as a % of employment: 5.9 ²		

¹ Growth in demand in EUR 9 (1980-87).

 2 Share of the value added and employment, respectively, of these sectors in the industrial total in 1985.

Nevertheless, despite the clear limitations¹ of this kind of analysis, we can observe that some key French sectors will benefit from the positive consequences of the completion of the 1992 internal market. The average coverage ratio of France is high for the performing European sectors, such as aerospace, data processing, and electronics. Furthermore, these sectors are frequently ones in which French enterprises have implemented major internationalization and investment programmes. Electronic appliances, radio and TV (consumer electronics) comprise one sector where the French position should improve in the run up to 1992. In fact, the reacquisition of consumer goods activities of General Electric and Thorn-EMI in 1987 enabled the French group to expand its role as a driving force in the development of a European supply industry, especially in the development of high-definition television. Therefore, in the long run, it cannot be excluded that France's position will be strengthened by technological developments which are currently under way.

2.2. Extra-Community trade (Table 10)

The structure peculiar to French foreign trade (deficit vis-àvis the Community, surplus vis-à-vis other countries, especially the developing countries and OPEC) dictates that the

¹ Especially the failure to take into account the latest efforts of French enterprises.

analysis should not solely be limited to intra-European trade. It is logical to suppose that completion of the European market in 1992 will not only entail modifications in intra-Community trade, but will also result in substantial changes in the volume of trade with non-Community countries.

The single European market will lead to increased competitiveness and growth in the Community countries as a whole. Thanks to the direction of its sales (developing countries, OPEC) and to its areas of expertise (military, large civil contracts in such areas as water supply, purification, public works, etc.) France should, consequently, be able to benefit from growing extra-Community exports in these several sectors.

As Table 10 illustrates, French extra-Community trade suffers from a smaller deficit than intra-Community trade because a majority of the 40 sensitive sectors have a coverage ratio greater than 100. Nevertheless, this can only be construed as a positive element if the demand growth prospects from non-EC countries towards French suppliers are very favourable. The composition of French extra-EC exports is characterized by a substantial African share (almost 20 % in 1987), an equivalent share for North America, and an especially low share for Japan and the NICs (newly industrialized countries) of the Far East (nearly 15 %).

Thus, the optimistic view which could emerge from a positive extra-EC trade balance for France must be put into perspective. France also finds it difficult to penetrate the United States and Japanese markets. Although it helps France's trade balance, this concentration on the developing and OPEC countries could also become a structural weakness.

In the medium term, the improvement in the competitiveness of French enterprises, the first signs of which became apparent in 1988, and the renewed demand for French goods from countries of the Middle East could have favourable consequences for extra-Community trade.

3. Dynamic adjustments

3.1. Assessment of company strategies

Given the high level of disaggregation represented by the 3digit NACE classification system, it was impossible to analyse the competitive position of French firms for all sectors. Consequently, the analysis was not undertaken for all of the 40 sensitive sectors. Furthermore, the analysis of the competitiveness of French enterprises was applied to the entire industrial sector, broken down into major branches which correspond to the structure of the economy (in terms of enterprises).

Table 10

Coverage ratio of France for the non-EC countries¹

NACE code	Sectors	Extra-EC coverage rate
330	Office & data-processing machinery	39
494	Toys & sports goods	58
421	Cocoa, chocolate & confectionery	59
345	Radio, TV	62
455	Household textiles	66
451	Footwear	67
453	Ready-made clothing	69
372	Medical & surgical equipment	72
438	Carpets	73
346	Domestic-type electrical appliances	88
493	Photographic & cinematographic labs	92
322	Machinery & other tools	94
432	Cotton industry	100
491	Jewellery	104
431	Wool industry	110
344	Telecommunications	118
327	Equipment for special branches of industry	119
347	Lighting	137
251	Basic industrial chemicals	137
351	Motor vehicles	137
326	Transmission equipment	139
323	Textile machinery	142
248	Ceramic products	146
321	Agricultural machinery	166
364	Aerospace equipment	170
256	Other chemical products for industry and	205
	agriculture	205
341	Insulated wire & cables	249
324	Machinery for food, chemical and related	2(0
	industries	260
417	Spaghetti, macaroni, etc.	260
342	Electrical equipment	264
481	Rubber goods	292
325	Plant for mines, etc.	307
361	Shipbuilding	362
247	Glass & glassware	3/3
257	Pharmaceutical products	388
315	Bollermaking	918
425	Champagne, sparkling wines	1 028
362	Kolling stock	1 949
428	water, soft drinks	3 489
427	Brewing & malting	3914

Calculation based on the average for the years 1985 to 1987.

The aim of this section is to supplement the analysis using statistical data (coverage ratio, etc.) by shedding light on the competitive position of French firms (existence of market leaders, profitability levels, etc.). These factors have a substantial influence on the balance of trade.

To take the chemical industry as an example, the weakness of French groups emerges quite clearly: groups are too small (the share of Rhône-Poulenc was less than half of Bayer or Hoechst in 1987), they have average profitability levels (see Graph), and a relatively narrow range of products (too many basic industrial chemicals)—all factors which could have a negative effect on the future of the French chemical industry following the completion of the internal market in 1992. These factors explain the negative intra-Community trade balance for France and the less favourable recent development of this industry when compared with that in the past.

3.1.1. The position of French firms

As Table 11 shows, France has fewer large-scale enterprises (listed among the top 500 in the world) than the other leading industrial countries.

Even within the Community, French groups do not always occupy a good position. Of the 20 largest European companies, France only has five (see Table 12) while the Federal Republic of Germany has eight.

Nevertheless, even if they are still too weak, the position of the French firms is improving: with the exception of CFP and Elf, the nine French firms appearing among the top 40 in Europe rose in the world ranking between 1982 and 1987. Furthermore, Elf Aquitaine is expected to considerably improve its position this year with its friendly takeover of the American chemical company Pennwalt (1987 turnover: USD 1 024 million) and its acquisition of Racon and Johnstone's Paints.

Likewise, it should be mentioned that Thomson is expected to improve its ranking, since the recently acquired consumer goods activities of Thorn-EMI and General Electric did not figure in its 1987 turnover figures.

The relative weakness of French industry can be detected in the major industrial sectors (see Table 13) in that, for example, none of the French firms is a European leader in its sector. On this latter point, the recent improvement in the position of French firms should not obscure the fact that they still have to recover the previously lost ground.

This is why a definite weakness can be detected in the French supply of consumer goods. Even when motor vehicles (i.e. Peugeot and Renault) are included, only four enterprises¹ appear among the 30 largest European firms, accounting for a mere 15 % of the overall turnover of these 30 companies.

3.1.2. The profitability of French firms

As Table 14 shows, French enterprises have suffered (and still are suffering) from insufficient profitability in comparison with their main European competitors, which represents an appreciable handicap if they wish to enter the 1992 market with an advantaged position.

Table 11

Distribution of the world's top 500 enterprises per country of origin

							(%)
Country Ranking	USA	Japan	D	·F	UK	Others	World total ¹
From the 1st to the 100th	41	14	11	9	5	20	100
From the 101st to the 200th	35	23	7	4	7	24	100
From the 201st to the 300th	43	19	7	4	11	16	100
From the 301st to the 400th	34	21	4	6	12	23	100
From the 401st to the 500th	35	24	6	5	6	24	100
From the 1st to the 500th	38	20	7	6	8	21	100
% GDP	29	16	7	6	4	38	100
Except for countries with a planned economy							

Except for countries with a planned economy.

¹ Peugeot, Renault, BSN and Thomson.

The 40 largest European enterprises in 1987

Company	Country	1987 turnover (Billion USD)	Movement on world ranking 1987/82	Company	Country	1987 turnover (Billion USD)	Movement on world ranking 1987/82
Shell	NL/UK	78,3	_	CFP Total	F	14.5	- 33
BP	UK	45,2	-2	Thyssen	D	14.2	- 5
IRI	Ι	41,3	+ 7	Bosch	D	14,1	+67
Daimler-Benz	D	37,5	+17	Saint-Gobain	F	13.1	+21
Volkswagen	D	30,4	+20	INI	E	12,7	n.d.
Fiat	Ι	29,6	+19	BAT Indus.	UK	12,3	- 30
Siemens	D	27,5	+ 5	Ruhrkohle	D	11,3	+19
Unilever	NL/UK	27,1	- 3	Usinor-Sacilor ¹	F	11.2	+109
Philips	NL	26,0	+ 5	Montedison	Ι	10,6	+18
Renault	F	24,5	+ 5	Electrolux	Sweden	10,6	+ 72
ENI	Ι	24,2	-13	Ciba-Geigy	CH	10,6	+14
Nestlé	CH	23,6	+16	BMW	D	10,2	+114
BASF	D	22,4	+19	Thomson	F	10,0	+ 5
CGE	F	21,2	+ 33	Opel	D	9.6	n.a.
Elf	F	21,2	-9	Rhône-Poulenc	F	9,3	+32
Bayer	D	20,7	+9	Mannesmann	D	9,3	+2
Hoechst	D	20,6	+ 7	Hanson Trust	UK	8,9	+316
Peugeot	F	19,7	+19	Petrofina	В	8,6	- 35
ICI	UK	18,2	+11	Statoil	Norway	8,3	+214
Volvo	Sweden	14,6	+ 3	Asea ²	Sweden	8,2	+81

2

Movement assessed with reference to Sacilor in 1982. USD 15,2 billion turnover for ABB. Increase of 122 places in world ranking compared with BBC alone in 1982.

Source: Fortune, 1983 and 1988.

Table 13

European ranking of French enterprises in 1987

Branches	Ranking of first French companies in the EC	Turnover of first French company in the EC (%)	Number of French companies among the European Top 10	Number of French companies among the European Top 20
Agro-foodstuffs	7	23	1	2
Chemical	5	59	3	5
Mechanical	20	15	0	1
Wood — paper	7	24	1	5
Textiles — footwear	6	35	4	7
Metals	3	27	2	2
Electrical equipment	31	74	31	71
Transport equipment	4	65	2	5 ²

Including French subsidiaries of foreign groups (1 and 2 respectively).
Including French subsidiary of a foreign group.
Source: BIPE, according to Le nouvel économiste 'the Top 5 000'.

Nevertheless, 1988 appears to have brought a clear recovery in their financial situations. As a result, a number of large French firms attained record profit levels.

By way of example, the three major national chemical companies (Rhône-Poulenc, Atochem, Orkem) each achieved a net profit of around FF 3 billion in 1988.

Although these results stem in part from the good economic situation in the developed countries, they are in our opinion mainly due to the efforts undertaken by national enterprises in recent years (renewed investment programmes, improvements in product ranges, internationalization of activities, etc.), efforts which are only just beginning to bear fruit and which are not taken into account by the figures currently available for all European groups (1987 data).

The good position of certain French groups, especially in the capital goods sectors as regards growth in turnover (Bull, CGE, Matra), is to be noted. This results in part from the active participation of these groups in the trend towards corporate internationalization which is being fostered by the imminent completion of the European market (acquisition of ITT's telephone activities by CGE, acquisition of GEC's electric and railway activities by the same group, integration of Honeywell Information Systems within Bull, creation of a European centre for semi-conductors with SGS-Thomson Microelectronics, which recently integrated with Inmont).

All of these factors give rise to the prediction that, contingent on a continuation of efforts already begun, French firms can be expected to improve control over their international markets as well as increase their penetration of other markets within the Community.

3.2. Medium-term effects of the internal market

Graph 1, which indicates the share of industrial employment and the value of the composite index for static competitiveness (see Table 15), highlights the difficult position of France. In terms of employment, the majority of sensitive sectors are classified in the 0 to 2 bracket. But France's position would appear difficult due to the presence, among the sensitive sectors, of sectors characterized by highly negative indicators (-3) and which represent an appreciable volume of employment (see Graph 1). All these things being equal, however, the impact of 1992—if accurately measured by the statistical figures employed here—will probably be slightly positive in terms of employment.

Nevertheless, the criteria employed by the services of the Commission suffer from certain limitations. For this reason, we have established a second classification synthesis. This system takes account not only of past situations reflected in statistics, but also of the most likely prospects which emerge from discussions and contacts that experts of the BIPE have with manufacturers. This approach integrates an additional dimension in terms of the likelihood of French firms to respond according to their potential (scope for flexibility, product range, etc.).

Graph 2 summarizes the results and offers a view of what should eventually be the foreseeable effects of the internal market of 1992. These are medium-term effects to the extent that the analysis of the positioning of French firms is based on their undertaking operations to modify their initial positions (that which is expressed by statistical data on the coverage ratio, specialization index, and price index).

Table 14

Analysis of financial profitability by major sector

		Financial profitability ¹							
	1985	1986	1987 ²	1985	1986	1987 ²			
Wood — paper	16,4	22,0	16,9	10,1	12,5	15,6			
Electrical equipment	10,4	12,1	13,9	10,2	10,3	8,9			
Agro-foodstuffs	9,5	11,9	17,6	14,1	16,0	21,9			
Chemical	11,2	10,1	17,6	13,6	12,7	14,0			
Textiles — footwear	8,7	8,7	16,7	18,7	14,3	16,3			
Mechanical	11,0	1,2	1,7	10,8	15,4	12,2			
Transport	-82,5	-10,1	33,8	12,2	8,5	13,1			
Metals		-60,3	- 39,5	7,6	4,4	6,0			
		((

Net result/shareholders' equity.
The Top 10 enterprises only.

Source: BIPE, according to Le nouvel économiste, 'The Top 5 000'.




Indicators of static competitiveness in the sensitive sectors identified at national level

NACE code	Sectors	Intra X/M ¹	Intra SI ²	Extra X/M ¹	Prod. SI ³	Global score
220		100	110	20	122	
330	Office & data-processing machinery	120	118	39	132	+ 2
344	Telecommunications	90	101	118	81	0
312	Medical equipment	55	/9	79	95	- 3
257	Pharmaceutical products	151	118	388	137	+4
315	Boilermaking	134	88	918	157	+2
362	Rolling stock	150	111	1989	145	+4
425	Champagne, sparkling wines	265	178	1028	199	+4
427	Brewing & malting	128	125	3974	41	+2
428	Water, soft drinks	135	193	3489	90	+ 3
341	Insulated wires & cables	63	72	249	241	0
342	Electrical equipment	97	124	264	125	+ 3
361	Shipbuilding	166	78	362	96	+1
417	Spaghetti, macaroni, etc.	11	34	260	59	-2
421	Cocoa, chocolate & confectionery	63	83	59	94	- 3
247	Glass & glassware	95	131	373	131	+ 3
248	Ceramic goods	44	77	146	63	-2
251	Basic industrial chemicals	86	118	137	77	0
256	Other chemical products	71	106	205	251	+ 1
321	Agricultural machinery	39	84	166	84	- 2
322	Machines & other tools	40	56	94	53	- 3
323	Textile machinery	57	72	142	41	-2
324	Machines for food, chemical and related industries	43	64	260	88	-2
325	Plant for mines, etc.	68	101	307	83	-1
326	Transmission equipment	82	113	139	73	0
327	Equipment for special branches of industry	39	49	119	31	- 2
345	Radio, TV	91	115	62	221	+1
346	Domestic-type electrical appliances	51	80	88	104	- 3
347	Lighting	50	84	137	83	- 2
351	Motor vehicles	101	101	137	147	+2
364	Aerospace equipment	192	111	170	319	+4
431	Wool industry	195	163	110	93	+2
432	Cotton industry	78	94	100	89	- 2
438	Carpets	25	34	73	57	- 4
451	Footwear	43	49	67	109	- 3
453	Ready-made clothing	100	83	69	88	- 3
455	Household textiles	42	56	66		- 3
481	Rubber goods	139	170	292	112	+4
491	Jewellery	56	20	104	62	-3
493	Photographic & cinematographic labs	67	119	92	207	+1
494	Toys & sports goods	56	74	58	98	- 3

For calculating the average for 1985 to 1987.
1987 specialization index.
Calculation for the year 1985.

French industries in the context of 1992

NACE	Sectors			Positioning from	the point of view of	:	
code		Coverage ratio ¹	Special. index ²	Price index ³	Companies ⁴	Products ⁵	Global score
512	Motor vehicles	0	0	0	0	0	0
342	Electrical equipment	0	1	na	2	0	3
453	Ready-made clothing	0	-1	0	0	0	- 1
345	Radio, TV	0	1	0	1	0	2
364	Aerospace equipment	1	1	1	0	1	4
344	Telecommunications	- 1	0	-1	2	2	2
481	Rubber goods	1	1	0	0	1	3
251	Basic industrial chemicals	- 1	1	na	0	- 1	- 1
315	Boilermaking	1	- 1	1	0	0	1
257	Pharmaceutical products	1	1	1	- 1	-2	0
256	Other chem, prod, for industry & agriculture	- 1	0	na	0	-1	-2
451	Footwear	- 1	- 1	0	0	- 1	- 3
432	Cotton industry	-1	0	- 1	0	0	-2
325	Plant for mines, etc.	-1	Õ	î	0	1	1
247	Glass & glassware	- Î	1	-1	2	2	3
330	Office & data-processing machinery	1	ĩ	- 1	1	-1	1
346	Domestic-type electrical appliances	- 1	- 1	- 1	î	1	-1
361	Shipbuilding	0	- 1	0	0	0	-1
324	Machines for food & chemical industries	- 1	- 1	- 1	0	0	- 3
321	Agricultural machinery	- 1	- 1	0	0	0	- 2
421	Cocoa, chocolate & confectionery	- 1	- 1	- 1	0	0	-3
431	Wool industry	ĩ	1	- 1	0	0	1
248	Ceramic products	-1	- 1	- 1	- 1	0	-4
322	Machines & other tools	- 1	- 1	0	0	- 1	- 3
326	Transmission equipment	-1	1	na	0	0	0
341	Insulated wire & cables	- 1	- 1	- 1	2	1	0
494	Toys & sports goods	-1	- 1	0	-1	-1	-4
347	Lighting	-1	- 1	0	0	0	- 2
362	Rolling stock	1	1	- 1	2	2	5
372	Medical & surgical equipment	-1	- 1	0	- 2	- 1	- 5
425	Champagne sparkling wines	î	1	0	õ	2	4
427	Brewing & malting	1	1	- 1	1	õ	2
428	Water soft drinks	i	î	0	0	0	2
491	Iewellerv	-1	$-\hat{1}$	- 1	- 1	0	$-\frac{1}{4}$
323	Textile machinery	-1	- 1	0	1	1	0
327	Equipment for special branches of industry	- 1	- 1	-1	0	0	- 3
438	Carnets	- 1	-1	0	0	0	-2
493	Photographic & cinematographic labs	-1	1	0	0	-1	- 1
417	Snaghetti macaroni etc	- 1	-1	- 1	1	0	-2
455	Household textiles	- 1	- 1	1	0	Ő	-1
-155	Troubentoit textiles	1	1	1	0	v	1

¹ Intra-Community coverage ratio (CR): -1 = CR < 90; $0 = 90 \le CR \le 110$; 1 = CR > 110. ² Specialization index (SI): -1 = SI < 90; $0 = 90 \le SI \le 110$; 1 = SI > 110. ³ Price index (PI): -1 = PI > 105; $0 = 105 \ge PI \ge 95$; 1 = 95 > PI. ⁴ Companies: the higher the score, the stronger the capacity for manœuvre of the companies (score of -2 to 2). ⁵ Products: the higher the score, the greater an asset the product range (score of -2 to 2).

Bibliography

- 1. Buigues, P. and Ilzkovitz, F, 'Les enjeux sectoriels du marché européen', Document II/335/88-EN, Commission of the European Communities.
- 2. Commission of the European Communities, 'The completion of the internal market, a survey of European industry's perception of the likely effects', 1988.
- Debonneuil, M. and Delattre, M. 'Les portes de parts de marché: la compétitivité en cause', Économie et statistique, No 203 (October 1987).
- 4. Haleblat, N. and Tavernier, J.-L., 'Entre 1979 et 1986, la France a perdu des parts de marché industriel' in 'La France dans la perspective du grand marché européen', Économie et statistique, No 217-218 (January-February 1989).

Ireland

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Contents

1.	Manufacturing sectors likely to be most affected by the single European market	249
1.1.	The relative importance of the sensitive industries	249
2.	The competitive position of the sensitive sectors in Ireland	251
2.1.	Indicators of international trade performance of the sensitive sectors	252
2.2.	Industries with a relatively strong trade performance	252
2.3.	Industries with an 'average' export-import ratio	254
2.4.	Industries with low export-import ratios	255
3.	Dynamic adjustment	256
3.1.	Strategic reactions of economic agents	257
3.1.1	. Clothing: W. P. McCarter & Co. Ltd	257
3.1.2	Footwear: Dubarry Shoemakers Ltd	258
3.1.3	. Domestic electrical applicances: Gien Dimplex Ltd	238
3.2.	Trends in foreign direct investment in Ireland	259
Conc	lusion	260
Anne	v	261
Anne	A	201
Bibli	ography	261

List of tables

1.	Revised list of 39 sensitive sectors, relevant for Ireland	250
2.	Employment in groups of sensitive sectors, 1987	250
3.	Percentages of total manufacturing employment and value added in each group of sensitive sectors, 1985	250
4.	Relative importance and export performance of foreign-owned and indigenous industry, 1986	251
5.	Number and importance of sensitive sectors with high, average and low intra-EC export-import ratios	252
6.	International trade indicators for sensitive sectors with relatively strong trade performance	253
7.	EC demand growth for sensitive sectors with strong trade performance	254
8.	International trade indicators for a sensitive sector with an 'average' export-import ratio	254
9.	International trade indicators for sensitive sectors with relatively low export-import ratios	255
10.	EC demand growth for sensitive sectors with low export-import ratios	256
11.	Recent growth of volume of output in high-growth, predominantly foreign-owned industries	259
12.	Response of companies in office and data-processing machinery, elec- trical engineering and instrument engineering to 'What impact do you expect the completion of the internal market by 1992 to have on the following?' (% of respondents)	260
13.	Capital expenditure by US manufacturing firms in Ireland (million USD)	260

1. Manufacturing sectors likely to be most affected by the single European market

To identify the Irish manufacturing sectors which are likely to be affected most by the completion of the internal market, we begin with the list of 'sensitive' sectors drawn up by Buigues and Ilzkovitz (1988) for the EC as a whole.

However, some revisions to this list are needed to obtain a listing of sensitive sectors that is relevant for Ireland.

First, pharmaceutical products was identified as a particularly sensitive sector and included in Group 2 because different registration and approval procedures for drugs in different countries create non-tariff impediments to free trade, and also because public sector purchasing is of some importance. These factors affect trade directly in the final or finished products, whereas the pharmaceuticals industry in Ireland is largely engaged in production of intermediate compounds or ingredients which are used as inputs for finished drugs made elsewhere. Thus most of the Irish industry would not be affected directly by freer trade, although it would be affected indirectly. Thus it would be more appropriate to move pharmaceuticals from Group 2 to Group 4 which contains the moderately sensitive industries.

Second, boilermaking was identified as a particularly sensitive sector because in other Member States a major part of this industry is the production of large-scale boilers for power generating stations, an activity which is subject to preferential public sector purchasing. In Ireland, however, boilermaking is a minor industry and it is not involved in the type of activity referred to. Thus it seems appropriate to delete boilermaking from the list of sensitive sectors for Ireland.

Third, the production of champagnes and sparkling wines is of no significance in Ireland. This industry, too, can be deleted from the list of sensitive sectors for Ireland.

Fourth, brewing and malting was included in Group 2 largely because the 'Reinheitsgebot', or beer purity law, in Germany has protected the German market against imports to a significant degree. Full free trade could lead to a marked restructuring of German brewing and significant new export opportunities for non-German breweries which are well placed to sell in Germany.

It seems rather doubtful, however, whether this will be of such great significance for brewing in Ireland. Whether because of substantial transport costs over long distances or because of important differences in consumer tastes, Ireland's international trade in beer is relatively limited and quite largely confined to trade with Northern Ireland and Great Britain, rather than the continental EC. It seems unlikely, therefore, that the opening up of the German market will be of major significance for Irish brewing, and it would be appropriate to classify the brewing industry in Group 4 rather than Group 2 as far as Ireland is concerned.

Fifth, soft drinks was identified as a particularly sensitive sector and included in Group 2 primarily because of restrictive regulations on the sale of drinks containing certain ingredients in France and Spain. While the removal of these impediments to free trade is likely to have important implications for the soft drinks industry in France, Spain and neighbouring countries, it seems doubtful whether it will be of great significance for this industry in Ireland.

Whether because of high transport costs or differences in consumer tastes, Ireland's international trade in soft drinks (as in beer) is relatively limited and is largely confined to trade with the UK, rather than the continental EC countries. It seems unlikely, therefore, that the removal of existing restrictions on exports to some member countries will be of great significance for the soft drinks industry in Ireland. It would therefore be appropriate to classify soft drinks in Group 4 rather than Group 2 as far as Ireland is concerned.

Sixth, it seems that the dairy products industry (NACE code 413), which is not included in the list drawn up by Buigues and Ilzkovitz, could be affected fairly significantly by the completion of the internal market. Pitts and Simms (1988) have found over 30 non-tariff barriers to international trade affecting dairy products. It would therefore be appropriate to include dairy products in the list of sectors likely to be significantly affected by the completion of the internal market. This sector should be included in Group 4, among the industries likely to be relatively moderately affected, since the implications of the internal market apply to some, but not all, of the sector's products.

To conclude, in the case of Ireland, it is appropriate to make these six adjustments to Buigues and Ilzkovitz's list of industries likely to be most affected by the single European market. The revised list of 39 industries likely to be most affected is shown in Table 1.

1.1. The relative importance of the sensitive industries

The 39 sensitive industries employed a total of 94 300 people at the end of 1987, which was 46,7% of total manufacturing employment. Table 2 shows the breakdown of this employment according to the industry groups distinguished in

Revised list of 39 sensitive sectors, relevant for Ireland

Category	NACE code	Industry
Group 1	330	Office and data-processing machinery
	344	Telecommunications equipment
	372	Medical and surgical equipment
Group 2	362	Railway and tramway rolling-stock (including repairs)
Group 3	341	Insulated wires and cables
	342	Electrical machinery
	361	Shipbuilding
	417	Spaghetti, macaroni, etc.
	421	Cocoa, chocolate and sugar confectionery
Group 4	247	Glass and glassware
	248	Ceramic goods
	251	Basic industrial chemicals
	256	Other chemical products, mainly for industrial
		and agricultural purposes
	257	Pharmaceutical products
	321	Agricultural machinery
	322	Machine-tools for working metal
	323	Textile machinery
	324	Machinery for food, chemical and related indus-
	325	Plant for mines iron and steel industry
	325	Transmission equipment for motive power
	320	Other machinery for specific branches
	345	Radios televisions consumer electronics
	346	Domestic electric appliances
	347	Electric lamps and other electric lighting
	351	Motor vehicles
	364	Aerospace equipment (including repairs)
	413	Dairy products
	427	Brewing and malting
	428	Soft drinks
	431	Wool industry
	432	Cotton industry
	438	Carpets and floor coverings
	451	Footwear
	453	Clothing
	455	Household textiles
	481	Rubber products
	491	Jewellery
	493	Photographic and cinematographic laboratories

494 Toys and sports goods

Table 1. It can be seen that most of this employment is concentrated in Group 4. Group 2, which is expected to be most strongly affected at the EC-wide level, is of rather little significance in Ireland.

To calculate value added in the sensitive sectors, the most suitable available data, at the NACE 3-digit level of disaggregation required here, come from the Statistical Office of the European Communities (SOEC). These data, however, exclude enterprises employing less than 20 people and thus are not directly comparable with the more complete coverage of the IDA survey which was used for Table 2. Table 3 shows the breakdown in 1985 of value added, as well as employment using comparable SOEC data, according to the industry groups distinguished in Table 1, for enterprises employing over 20 people.

Table 2

Employment in groups of sensitive sectors, 1987

Group	Employment	% of total manufacturing employment
1	17 707	8,8
2	1 546	0,8
3	9 575	4,7
4	65 487	32,4
Il sensitive sectors	94 315	46,7
ll sensitive sectors	94 315	

Source: Industrial Development Authority (IDA) employment survey, November 1987.

Table 3

Percentages of total manufacturing employment and value added in each group of sensitive sectors (in enterprises employing over 20 people), 19851

Group	% of total manufacturing employment	% of total manufacturing value added ²
1	9,2	16,4
2	0,9	0,4
3	5,5	3,3
4	38,1	40,9
	53.6	60.9

1

The table refers to 1985, since value added data for later years at the NACE 3-digit level are missing or unreliable for quite a high proportion of the sensitive sectors. In the case of a number of industries with missing data on value added, the figures were taken from the Census of Industrial Production if available for the (NACE 3-digit) industry concerned, or else estimated by multiplying the industry's employment by the value added per employee in the relevant larger (2-digit) NACE class. 2

Source: Mainly data supplied by the Statistical Office of the European Communities

The table indicates that the 39 sensitive sectors account for a distinctly larger share of manufacturing value added than of manufacturing employment. This is mainly because the three industries in Group 1 account for a much greater share of value added than employment, while the same applies to the pharmaceuticals industry, which is in Group 4. It is worth pointing out that the three Group 1 industries and pharmaceuticals have two significant things in common they are predominantly foreign-owned and they are very profitable.

The point about this is that in the industries which account for the sensitive sectors' disproportionately high share of value added relative to their share of employment, a very substantial proportion of the value added is in the form of profits of foreign companies, which can be readily withdrawn from Ireland. There are in fact very substantial flows of profits out of Ireland, and O'Malley and Scott (1987) have shown that most of these profit outflows come from a small number of industrial sectors. These sectors are office and data-processing machinery, electrical engineering (which includes telecommunications equipment), instrument engineering (which is mostly medical and surgical equipment), and pharmaceuticals.

It may be concluded, therefore, that a significant proportion of the value added in those sensitive sectors which have relatively high value added does in fact leave the country, rather than accruing as a real contribution to the Irish economy. Consequently, the value-added figures in Table 3 would give a somewhat misleading impression of the relative importance of the sensitive sectors in total Irish manufacturing, since part of their value added habitually leaves the country. The employment figures in Table 2 would give a better impression of the real importance of the 39 sensitive sectors for Irish manufacturing or the Irish economy.

2. The competitive position of the sensitive sectors in Ireland

Having identified the 'sensitive' sectors, which are likely to be most affected by the completion of the internal market, we now assess the competitive position of these industries in Ireland.

As background to this assessment, it is worth noting that until the early 1960s there was a policy of strong protection against imports and most industries concentrated on the protected home market. There was little development of manufactured exports before the 1960s. However, new policies were introduced in the late 1950s to promote industrial exports by means of grant assistance and tax concessions, and export-oriented investment from abroad was actively sought as a means of contributing to export growth. Complementary to this more 'outward-looking' approach, it was subsequently decided to introduce free trade policies by removing tariff and quota protection.

As the new outward-looking policies were applied, there was a marked increase both in import penetration and in export orientation. Competing imports of manufactured products gained a 1,2 % increase in market share per annum during the period 1967-79. On the export side, manufactured exports increased from 19 % of manufacturing gross output in 1960 to 33 % in 1973 and 55 % in 1986. It is clear, however, that the growth of manufactured exports was very largely a result of the establishment of new foreign-owned, highly export-oriented firms, rather than a result of a switch from domestic to export markets by Irish indigenous firms. The formerly protected indigenous firms bore the brunt of increased competition from imports and, for the most part, they did not attain a sufficient increase in exports to compensate for this (O'Malley, 1989).

Table 4

Relative importance and export performance of foreign-owned and indigenous industry, 1986

	% of	% of % of Exports as % distribution		6 distribution of expo	tion of exports		
	employment	gross output	exports	% of gross output	UK	Other EC	Elsewhere
Foreign	40,8	50,0	75,8	83,2	23,1	46,0	30,9
Indigenous	59,2	50,0	24,2	26,6	55,2	16,5	28,2
Total	100	100	100	54,9	30,9	38,9	30,2

251

By now, therefore, manufacturing industry in Ireland consists, on the one hand, of foreign-owned companies which are mostly highly export-oriented and internationally competitive; on the other hand, there are Irish indigenous companies which are mostly much less export-oriented and have had a poorer record in international competition. Table 4 shows the relative importance of foreign-owned and indigenous industry, and their export-orientation, within the overall structure of Irish manufacturing.

Given this 'dualistic' industry structure—as reflected in the marked difference in the performance of foreign-owned and indigenous industry in international markets—the question of nationality of ownership has a bearing on the competitive position of individual 'sensitive' sectors. Taking the whole group of 39 sensitive sectors, foreign-owned firms account for 56 % of their employment, which is substantially greater than the 40,8 % share of foreign firms in total manufacturing employment. Thus foreign firms are disproportionately concentrated in the sensitive sectors, which would be likely to make many of them stronger than the average Irish manufacturing sector when it comes to international competition.

2.1. Indicators of international trade performance of the sensitive sectors

To assess the competitive position of the sensitive sectors, we use four indicators of their international trade performance: the ratio of intra-EC exports to intra-EC imports, the change in the intra-EC export-import ratio (designated Delta X/M) between 1980 and 1987, an intra-EC export specialization index, and finally, the ratio of total exports to gross output.

Judged on the basis of the export-import ratios alone, the overall position of Irish industry in the sensitive sectors looks quite good. The 15 industries for which the intra-EC export-import ratios exceed 110 are more important, in terms of employment or value added, than the 23 industries with ratios below 90, as shown in Table 5. The 15 sectors with high export-import ratios account for 26,5 % of manufacturing employment, compared with 18,9 % for the 23 sectors with low export-import ratios.

As Table 5 also shows, the share of value added in the sectors with high export-import ratios exceeds the share of value added in those with low ratios by a far greater margin. It has already been pointed out above, however, that the value added figures can overstate the real importance of certain industries for the Irish economy. This is particularly the case for the sectors with high export-import ratios in

Table 5

Number and importance of sensitive sectors with high, average and low intra-EC export-import ratios

	Number of industries	% of manu- facturing employment, 1987	% of manu- facturing value added, 1985	
Export-import ratio above 110	15	26,5	50,4	
Export-import ratio 90-110	1	1,3	0,8	
Export-import ratio below 90	23	18,9	9,7	

Sources: IDA employment survey 1987, for column 2. Statistical Office of the European Communities, for column 3.

Table 5. The employment figures in Table 5, however, give a much more realistic measure of the importance of the different categories of industry for the Irish economy, and they do clearly indicate that the industries with high exportimport ratios are more important than those with low ratios.

2.2. Industries with a relatively strong trade performance (Table 6)

The sectors included in Table 6 have high intra-EC exportimport ratios, which suggests that they have quite a strong competitive position relative to other Member States. For the most part, the impression given by this indicator is supported by at least two of the other three indicators in Table 6; these show that most of the industries in the table have not only high but also rising export-import ratios, a high degree of specialization, and a high proportion of output going to export markets.

One exception is brewing and malting, with a declining export-import ratio and a low level of export-orientation. The situation here, however, is that there is a generally low level of international trade. Imports have been increasing from an extremely low base level in 1980—hence the falling export-import ratio; but imports still amount to less than 5 % of the domestic market so that this trend is not of great significance. The high export-import ratio can still be taken to indicate a position of relative competitive strength. The cotton industry, too, has a declining export-import ratio, as well as a low specialization index. But since the vast majority of its output is being sold in export markets, the indicators for this industry are rather ambiguous.

International trade indicators for sensitive sectors with relatively strong trade performance

Group	NACE code	Sector	Intra-EC export-inport ratio 1985-87	▲ X/M ratio 1980-87	SI 1986	Total exports as % of gross output	Employment as % of total manufacturing 1987
Group 1	330	Office and data-processing					
Gloup I	550	machinery	643	191	569	081	3.8
	344	Telecommunications equipment	210	152	106	871	2.6
	372	Medical & surgical equipt.	520	98	512	99 ²	2,3
Group 3	341	Insulated wires & cables	265	732	330	70 ³	2,1
1	421	Cocoa, chocolate, confectionery	137	124	272	62 ²	1,2
Group 4	251	Basic industrial chemicals	169	109	91	431	1,2
	257	Pharmaceuticals	115	171	205	971	2,8
	345	Radios, TVs, etc.	117	159	71	38 ³	1,1
	413	Dairy products	1 746	164	300	291	3,8
	427	Brewing & malting	238	9	215	133	1,6
	428	Soft drinks	185	127	210	133	1,3
	432	Cotton industry	135	83	92	843	0,4
	481	Rubber products	115	136	71	851	1,0
	491	Jewellery	276	129	61	high ³	0,9
	494	Toys & sports goods	153	107	161	85 ²	0,3
Employme	nt of abo	ove industries as a percentage of tota	l manufacturing:				26,5

Source: Statistical Office of the European Communities, for columns 1 to 3. Various sources for column 4, as outlined in the Annex; superscript number on data in column 4 indicate which of the three sources referred to in the Annex is used. IDA employment survey, November 1987, for column 5.

In general, then, all or nearly all of the industries in Table 6 can be regarded as quite competitive. They should mostly be in a good position to take advantage of improved export opportunities under free trade, and even if they do not do so in a major way, they generally do not look vulnerable to the effects of freer trade.

Many of the 15 industries with a strong trade performance are benefiting from relatively rapid growth in demand. Table 7 groups these industries according to the strength of growth in demand in the EC, and it can be seen that the high growth industries constitute the largest group.

It should be to Ireland's advantage that its relatively strong sensitive sectors tend to be concentrated to this degree in high-growth activities.

Finally, it was pointed out above that highly export-oriented and internationally competitive branches of foreign multinational companies constitute the major part of the sensitive sectors in general. This feature is even more marked in the 15 sectors with a strong trade performance. In these 15 sectors as a group, foreign-owned companies account for 68,9 % of employment, compared with 56 % of employment in all 39 sensitive sectors and 40,8 % in total manufacturing. In view of the strong export record of the foreign firms in general, this would tend to confirm that the 15 sectors considered here generally have a strong competitive position in international trade.

But if an industry is mainly composed of branches of foreign multinational companies, one would need to be somewhat cautious about concluding that this relatively strong industry will generally undertake significant expansions in response to the new opportunities presented by the single European market. Even a strong multinational enterprise with a very satisfactory operation in Ireland may not necessarily expand production in Ireland. Instead, it might expand production in other satisfactory European establishments, or it might set up a new establishment elsewhere in the EC, perhaps with newer, more advanced technology. The range of such options which are available means that it cannot be confidently expected that expansion in Ireland will necessarily result from a strong performance in existing Irish operations.

EC demand growth for sensitive sectors with strong trade performance.

251	Basic industrial chemicals
257	Pharmaceuticals
330	Office and data-processing machinery
341	Insulated wires and cables
344	Telecommunications equipment
345	Radios, TVs, etc.
428	Soft drinks
413	Dairy products
421	Cocoa, chocolate, sugar confectionery
427	Brewing and malting
372	Medical and surgical equipment
432	Cotton industry
481	Rubber products
491	Jewellery
494	Toys and sports goods
	237 330 341 344 345 428 413 421 427 372 432 481 491 494

 High-growth industries are those for which growth exceeded the total industry figure by over 10%.
Low-growth industries are those for which growth was 10% or more below the total industry

figure. Source: Statistical Office of the European Communities.

On the more positive side, it is worth bearing in mind that a major consideration for many foreign companies when deciding to invest in Ireland in the first place was the fact that, as an EC member since 1973, Ireland had attained guaranteed tariff-free access to EC markets. If this was so after 1973 as a result of the removal of tariff barriers to exports to EC countries, the removal of nontariff barriers to such exports by 1992 should further enhance the motivation for new export-oriented foreign investment in industries which now face non-tariff barriers to trade (see Section 3 for a description of recent trends in foreign direct investment in Ireland).

2.3. Industries with an 'average' export-import ratio (Table 8)

In Ireland, only one industry, domestic electrical appliances, has an export-import ratio falling in the 'average' range of 90-110, as seen in Table 8. Although the export-import ratio for this industry is on the low side, at 92, the other indicators of its trade performance look quite strong. Thus its exportimport ratio has been rising quite rapidly, it has quite a high export specialization index and it exports a large majority of its output.

The explanation for this situation is that this industry in Ireland concentrates almost exclusively on the smaller electrical appliances such as electrical heaters, shavers, food mixers, vacuum cleaners and hair dryers. The larger appliances such as washing machines, refrigerators and dishwashers are scarcely made in Ireland at all, and hence they have to be imported. But such imports do not really reflect on the competitive position of the industry in Ireland since they generally do not represent competiton for Irish firms. Thus this industry is, in fact, quite competitive and successful in export markets within its own particular areas of specialization. (In Section 3, strategic reactions of a major company within this sector are presented.)

Table 8

International trade indicators for a sensitive sector with an 'average' export-import ratio

Group	NACE code	Sector	Intra-EC export-import ratio 1985-87	▲ X/M ratio 1980-87	SI 1986	Exports as % of gross output	Employment as % of total manufacturing 1987
Group 4	346	Domestic electrical appliances	92	134	117	78 ³	1,3

rce: Data supplied by Statistical Office of the European Communities, for columns 1 to 3. Source for column 4 as outlined in the Annex. IDA employment survey, November 1987, for column

Demand growth for domestic electric appliances in the EC is relatively high, so again it should be to Ireland's advantage to be relatively strong in this sector.

2.4. Industries with low export-import ratios (Table 9)

The sectors included in Table 9 are those with relatively low export-import ratios. This would appear to indicate that these industries have a rather weak competitive position and are vulnerable to the effects of freer trade, but further consideration suggests that this is not necessarily so in every case. As in the case of electrical appliances, a number of industries in Table 9 are not very fully developed and do not produce the full range of products covered by the official industry definition. Hence, imports can be quite high, resulting in a low export-import ratio, without necessarily reflecting a weak competitive position in the particular areas of specialization of the firms which do exist. Some of the other indicators of international trade performance can help warn us where a low export-import ratio may be misleading for this reason.

If we look at the mechanical engineering group of industries (NACE 321-327), for example, we find that all seven of them have low export-import ratios and low indices of export specialization. But in most of them the export-import ratio has been rising, or at least holding steadily, while these seven industries as a group export as much as 69 % of their output. There is no doubt that many types of machinery are simply not produced in Ireland and hence imports have to be rather high, without necessarily reflecting on the competitiveness of the existing firms. The high proportion of mechanical

Table 9

International trade indicators for sensitive sectors with relatively low export-import ratios

Group	NACE code	Sector	Intra-EC export-import ratio 1985-87	▲X/M ratio 1980-87	SI 1986	Exports as % of gross output	Employment as % of total manufacturing 1987
Group 2	362	Railway equipment	2	10	7	4 ³	0,8
Group 3	342	Electrical machinery	74	107	66	n.a.	1.1
	361	Shipbuilding	60	336	24	93 ³	0.3
	417	Spaghetti, macaroni, etc.	37	21	22	n.a.	0,02
Group 4	247	Glass & glasswere	86	161	70	55 ²	1,9
	248	Ceramic goods	56	109	38	912	0,4
	256	Other chemical products	69	134	79	high ³	0,7
	321	Agricultural machinery	13	79	19	e	0,6
	322	Machine tools	60	177	38		0,6
	323	Textile machinery	18	92	9		0,05
	324	Food, chemical machinery	21	97	18	69 ¹	0,2
	325	Plant for mines, steel industry	55	146	45		0,6
	326	Transmission equipment	22	154	10		0,1
	327	Other machinery	41	279	15		0,04
	347	Electric lamps	14	97	9	n.a.	0,1
	351	Motor vehicles	15	43	4	n.a.	0,4
	364	Aerospace equipment	78	107	13	>40	1,1
	431	Wool industry	84	92	87	701	1,9
	438	Carpets, floor coverings	67	79	60	65 ²	0,4
	451	Footwear	15	55	12	42 ¹	0,6
	453	Clothing	56	118	88	54 ²	6,5
	455	Household textiles	70	54	109	74 ²	0,5
	493	Photographic labs	41	35	22	n.a.	0,1
Total							18,9

Source: Data supplied by Statistical Office of the European Communities, for columns 1 to 3. Various sources for column 4, as outlined in the Annex; superscript numbers on data in column 4 indicate which of the three sources referred to in the Annex is used (in the case of Aerospace, the source is annual reports of Aer Lingus, which dominates this sector). IDA employment survey, November 1987, for column 5.

engineering output which is exported shows that many firms in this group of industries must be internationally competitive in their own limited areas of specialization.

In the aerospace equipment industry, no aircraft are actually made in the Republic of Ireland, so that aircraft have to be imported, and this results in a low export-import ratio. The industry in Ireland is almost entirely engaged in overhaul, repair and maintenance of aircraft and aircraft engines. This activity, carried out by the State-owned airline, Aer Lingus and its subsidiaries, is partly work for Aer Lingus itself but also partly for foreign airlines. Given the substantial amount of work done for foreign customers, and the satisfactory profitability of these activities within Aer Lingus, this industry seems to be quite competitive and not particularly vulnerable to free trade, despite the low export-import ratio.

The railway equipment industry is also something of a special case, although for somewhat different reasons. All the indicators of international trade performance for this sector look extremely poor, and this reflects the fact that there are very little exports. The industry consists almost entirely of part of Iarnrod Eireann, the State-owned railway company; in 1986, two-thirds of the industry's output was repair and maintenance work and one-third was manufacture of rolling stock or parts of rolling stock. Virtually all 'sales' are intra-firm sales within Iarnrod Eireann. Thus although there is little indication that this industry could take much advantage of new export opportunities, it does not appear to be vulnerable to competition under freer trade since it is part of a vertically integrated company which itself constitutes its market.

Table 10 groups the sensitive sectors with low export-import ratios according to the strength of growth in EC demand. Most of these industries and the vast majority of their employment are in activities with only low or average growth. As can be seen by comparing with Table 7, the relatively strong sensitive sectors in Ireland tend to be more in high-growth activities while those which may be relatively weak tend to be more in low or average-growth activities. Overall this is a fairly favourable situation for Ireland, since it means that Irish industry is relatively well placed to make gains in the sectors which are increasing in importance; other things being equal, it would be better to have one's strengths concentrated in high-growth rather than low-growth sectors. However, it does mean that a number of the sectors which look vulnerable to freer trade are likely to have any difficulties arising from this source compounded by the effects of relatively slow growth in demand.

Finally, in the 23 sectors with low export-import ratios taken as a group, foreign firms account for only 36,5 % of

Table 10

EC demand growth for sensitive sectors with low export-import ratios

Demand growth	NACE code	Industry
High growth ¹ (employment 1,8%)	256 321 351 493	Other chemical products Agricultural machinery Motor vehicles Photographic laboratories
Average growth (employment 12,7%)	325 342 361 362 364 417 431 453 455	Plant for mines, steel industry Electrical machinery Shipbuilding Railway equipment Aerospace equipment Macaroni, spaghetti, etc. Wool industry Clothing Household textiles
Low growth ² (employment 4,3%)	247 248 322 323 324 326 327 347 438 451	Glass and glassware Ceramic goods Machine tools Textile machinery Food, chemical machinery Transmission equipment Other machinery Electric lamps Carpets, floor coverings Footwear

High-growth industries are those for which growth exceeded the total industry figure by over 10%.
Low-growth industries are those for which growth was 10% or more below the total industry

figure.

Source: Statistical Office of the European Communities

employment, compared with 68,9 % of employment in the 15 sectors with a strong international trade performance. Given the strong export record of most foreign firms and the much weaker record of indigenous industry in general in international trade, this would tend to confirm that many firms in the 23 sectors with low export-import ratios could be somewhat vulnerable to stronger competition under freer trade.

3. Dynamic adjustment

This chapter completes the competitive analysis of the sensitive sectors in two directions:

- by presenting strategic reactions of companies to adjust to the single European market;
- (ii) by describing recent trends of foreign direct investment in Ireland and related expectations.

3.1. Strategic reactions of economic agents

This section presents a number of brief case studies of sensitive sectors and leading companies in those sectors. In these case studies, we are mainly interested in examining how the industries and companies concerned are planning and implementing strategies to adjust to the single European market. The industries for these case studies were selected on the basis that they are relatively important in Irish manufacturing, that they represent a balance between relatively strong and potentially vulnerable industries, and that a reasonable amount of relevant information about them is available.

3.1.1. Clothing: W. P. McCarter & Co. Ltd

The clothing sector is the largest of the 39 sensitive sectors in Ireland in terms of employment. It is included among the potentially vulnerable industries identified in this report, although there are signs of certain strengths within the industry. For example, the larger firms, at least, already export quite a substantial proportion of their output, and labour-cost competitiveness is reasonably strong relative to the EC average but not relative to the United Kingdom which is Ireland's major trading partner in clothing (Apparel Industries Federation, 1989).

On the negative side, the intra-EC export/import ratio for clothing is low, profit margins are generally low (Apparel Industries Federation, 1989), and the industry's overall output and employment performance in the 1980s has been particularly weak. The clothing industry in Ireland is predominantly indigenous although foreign multinational companies make up a substantial minority of the sector, with 39 % of its employment.

The completion of the internal market by 1992 will have a number of implications for the clothing industry, including the removal of border controls and opening up of public procurement (of army uniforms, for example); but much the most important effects concern the operation of the Multifibre Arrangement (MFA) which controls EC imports of clothing from low-wage developing countries (Ackermann and Lindquist, 1989).

At present, this country-specific quota system gives a relatively high degree of protection to the Irish market for a number of clothing products, relative to other EC countries; consequently, developing countries account for only about 10 % of Irish clothing imports compared with about 40 % of UK clothing imports (Apparel Industries Federation, 1989). This suggests that import competition from developing countries is likely to become more intense in the Irish

market once clothing imports into any part of the EC are allowed to be freely sold in Ireland.

It appears to be generally recognized that there will be both threats and opportunities in the market environment to be created by 1992 and that much will depend on individual companies adopting strategies that can work for them. In particular, companies will need to take greater account of competition from low-wage developing countries in this relatively labour-intensive industry.

In adjusting to freer trade with larger scale European competitors since Ireland joined the EC, and in attempting to cope with low-wage competition from developing countries, the more successful Irish companies have mostly opted for one of two types of approach. Some have moved upmarket into more expensive fashion garments which are produced in relatively small production runs; in this type of business, economies of scale and labour costs are of less significance. Others have become more highly specialized producers of high volumes of a limited range of products aimed at niches in the mass market. In the latter type of strategy, it is crucial to sell through the small number of large multiple retail chains which account for a high proportion of the clothing market (70 % in Ireland). By specializing in a limited range of products, even small to medium-sized Irish manufacturers can attain a competitive scale in their chosen niches. And they have the advantage over developing country competitors in Irish or European markets that lines of supply are shorter and lead times between ordering and delivery are less, which is often important for the retail multiples since they aim to respond rapidly to changing consumer preferences.

An example of the second type of strategy could be given by W. P. McCarter & Co. Ltd, the largest employer in the Irish clothing industry. In order to expand substantially, this company reached a joint venture agreement with an American firm, Union Underwear, better known by its brand name 'Fruit of the Loom', which was looking for a European base to manufacture for sale in the integrated European market. Owing to this joint venture agreement, the company has become highly specialized in mass production of sweat-shirts and T-shirts in large volumes for the total European market.

A key element in the company's strategy is high volume, and consequently low-cost, production of a specialized range of products. It also deliberately carries a large stock so that it can immediately supply very large orders. To minimize labour costs, production is highly mechanized, at least to the extent that this is possible. Production is on a piece-work basis to create an incentive for high labour productivity.

3.1.2. Footwear: Dubarry Shoemakers Ltd

The Irish footwear industry is another sector which looks relatively weak. Many footwear companies had been established after the early 1930s, with the help of protection against imports. When tariff and quota protection was gradually removed under the Anglo-Irish Free Trade Agreement (beginning in the mid-1960s) and the terms of accession to EC membership, most of these companies failed to respond adequately to the challenge of freer trade. Consequently, import penetration increased substantially without a sufficiently compensating growth of exports and a number of companies closed down.

For the most part, imports of footwear come from other EC countries, particularly the United Kingdom, rather than low-wage developing countries. This suggests that the problems of the Irish footwear industry are not caused simply by the difficulty of competing against very low labour costs in a labour-intensive industry, since a good deal of the home market has been lost to competitors with roughly comparable or even higher labour costs. This would indicate that quality of management and individual companies' strategies for adapting to freer trade can be of decisive importance.

Some Irish footwear companies have, in fact, survived and adapted to freer trade quite successfully and these should be well placed to face the single market. Dubarry Shoemakers Ltd, which can be regarded as the country's leading footwear manufacturer, is a good example.

The strategy of Dubarry is based on a combination of keeping management overheads low, emphasizing marketing, promoting exports (in order to obtain an adequate scale of production), specializing in less price-sensitive market segments (golf shoes, relatively high quality women's shoes, etc.), investing in up-to-date technology, and smoothing out the costly seasonal pattern of production.

3.1.3. Domestic electrical appliances: Glen Dimplex Ltd

The domestic electrical appliances industry in Ireland concentrates on production of a range of small appliances while the larger appliances such as 'white goods' are imported. As was shown in Section 2, this results in imports being greater than exports, but the industry is nevertheless quite strong in its own particular areas of specialization.

The domestic appliances sector is very largely composed of three sizeable companies although there are a further 10 smaller establishments. The principal firms are Glen Dimplex Ltd, Krups Engineering Ltd and Braun Ireland Ltd. Krups and Braun are both subsidiaries of German multinational companies. Glen Dimplex, however, is Irishowned and has its headquarters in Ireland, although it, too, has developed into a substantial multinational company. Glen Dimplex was the fifth largest Irish indigenous manufacturing company in terms of sales in 1987.

The Glen Dimplex group is a relatively new creation which started life in 1973 and it has grown very rapidly since that time. The growth of the company has featured a series of takeovers of established firms which were mostly engaged in production of small domestic electric appliances. There have been acquisitions in the UK, in France and also in the USA.

In a variety of ways, the group as a whole benefits from its greatly increased size as a result of this series of takeovers and acquisitions: economies of scale in production, spread of the management and R&D costs over a large sales volume, scope for swopping of products, designs and technology between different branches of the group, etc. Its expansion primarily by this method began in the 1970s and clearly was not prompted originally by consideration of the challenge of 1992. But Glen Dimplex does appear to have developed a strategy and management style which would be well suited to the context of the single market with its expected intensification of international competition and concentration of many industries into larger companies.

Much of the impetus behind the strategy of expansion by acquisition of existing firms arose from an early recognition of the importance of established brands names in this consumer products industry. Rather than introducing and building up entirely new brand names, it is easier to acquire a company with a well-established brand and perhaps to exploit it further by enhancing the product range sold under that name. Given that the established brands in the United Kingdom are largely different to those in the USA, this consideration led to the acquisition of local companies in each market, and a similar approach would probably be appropriate for achieving further penetration of continental EC markets.

From the point of view of the development of the Irish economy, however, growth by acquisition of foreign firms means that a company such as Glen Dimplex contributes rather less to the economy than its overall size might suggest at first sight. Nevertheless, the Irish branches of the firm have grown and they can benefit from participation in a large multinational group. In addition, Glen Dimplex recently announced plans to expand employment at its two Irish factories, it plans to locate a new design centre in Dublin, and there have been recent announcements of other new investments in Ireland.

3.2. Trends in foreign direct investment in Ireland

Ireland's accession to EC membership in 1973 considerably enhanced new foreign investment in Ireland by firms from outside the Community, particularly the USA, selecting a suitable site in which to produce for sale in EC markets. Ireland's attractions for such investors have been principally in low or negligible taxes on profits, as well as in government grants, availability of labour including certain skills which are in demand, and relatively low labour costs compared with many EC Member States.

Of course, Ireland also has disadvantages as a location, particularly owing to its distance from the major EC markets, scarcity of some of the specialist services and subsuppliers found in more advanced industrial economies, and the problem of non-tariff barriers for exports of many of the products of the 'sensitive' sectors discussed in this paper. Nevertheless, Ireland has become, relative to its size, quite an important supplier to other EC countries of certain types of products, for example, digital computers, digital central processors and bulk antibiotics.

If the removal of tariff barriers to exports to EC countries after 1973 increased the motivation for foreign investment in Ireland, it seems reasonable to expect that the removal of non-tariff barriers by 1992 should further enhance the motivation for new foreign investment in industries whichnow face non-tariff barriers to trade. There are, in fact, some indications that this expectation will be fulfilled.

First, it is worth noting that growth has been particularly rapid very recently in the principal sectors which are predominantly composed of foreign-owned multinational companies. Table 11 shows that the growth rate accelerated from early 1988 to early 1989, as compared with the average rate for 1980 to 1988, in three of the four sectors; the fourth sector, office and data-processing machinery, also continued to grow very fast recently although at a somewhat reduced rate. This recent growth performance would not, of course, be solely a response to the prospects of the single market, but it is an encouraging indicator none the less.

A clearer indication of companies' response to the single market comes from the April 1989 Investment Survey by the Confederation of Irish Industry and the Economic and Social Research Institute. Companies were asked what impact they expected the completion of the internal market to have on their sales, investment and employment, and Table 12 shows the responses from office and data-processing machinery, electrical engineering and instrument engineering combined. It can be seen that most of these companies expect

Table 11

Recent growth of volume of output in high-growth, predominantly foreign-owned industries

NACE	i Industry	Annual average 1980-88	First quarter 1988 to first quarter 1989
257	Pharmaceuticals	11,3	21,6
330	Office & data-processing machinery	31,5	20,5
34	Electrical engineering	15,8	35,7
37	Instrument engineering	8,5	17,2

Source: Central Statistics Office, Industrial Production Index.

the single market to result in an increase in their sales to the other EC countries, entailing an increase in the volume of their fixed investment in Ireland. A smaller proportion—but still a majority—expect that this will also mean an increase in their employment in Ireland. Scarcely any of the companies foresee a reduction in their sales in Ireland as a result of the liberalization of trade. This would reflect the fact that most of the companies concerned export the vast majority of their output at present, and that they may consequently be regarded as internationally competitive.

Table 12, however, refers only to the expectations of existing companies in Ireland. But investment by new arrivals in Ireland can be at least as important for growth as expansion of the existing firms.

It is, however, not so easy to ascertain the expectations and intentions of potential, but largely unknown, new foreign investors in Ireland. It would be reasonable to expect that the completion of the internal market will increase non-European foreign direct investment in the EC generally. And indeed, there is already evidence that both US and Japanese direct investment in Europe has increased recently (O'Donnell, 1989).

Other things being equal, this trend would result in increased foreign investment in Ireland. Ireland's share of the available mobile investment coming into the EC might tend to be reduced by competition from the newest Member States— Spain and Portugal—but it could also tend to be increased by a curtailment of State incentives offered by the richer member countries.

Response of companies in office and data-processing machinery, electrical engineering and instrument engineering to 'What impact do you expect the completion of the internal market by 1992 to have on the following?' (% of respondents)¹

		198	39-92			199	93-96	
	Increase	No change	Decrease	Don't know	Increase	No change	Decrease	Don't know
Your sales:								
in Ireland	17,2	75,9	3,4	3,4	13,8	69,0	6,9	10,3
to other EC countries	75,9	24,1	0	0	75,9	17,2	6,9	0
Your investment:								
in Ireland	65,5	35,5	0	0	55.2	31.0	3,4	10.3
in other EC countries	34,5	41,4	0	24,1	31,0	34,5	0	34,5
Your firm's employment:								
in Ireland	51,7	37,9	10,3	0	55,2	34,5	6,9	3,4
in other EC countries	24,1	41,4	3,4	31,0	24,1	37,9	3,4	34,5

¹ The number of companies surveyed in these sectors was 29, including most of the largest firms.

Source: Unpublished data from the Confederation of Irish Industry/Economic and Social Research Institute joint investment survey, April 1989.

Table 13

Capital expenditure by US manufacturing firms in Ireland (million USD)

	1987	1988	1989 ¹
Food and kindred products	20	29	32
Chemicals & allied products	37	46	44
Primary & fabricated metals	6	7	30
Machinery, except electrical ²	45	53	87
Electrical & electronic equipment	33	35	48
Transportation equipment	6	2	2
Other manufacturing	46	60	105
Total manufacturing	195	232	349
Total as % of EUR 12	2,0	2,0	2,6

Porecast.
Includes computers.

Source: US Department of Commerce, Survey of Current Business, March 1989.

Recent data on US foreign manufacturing investment suggest that, on balance, the outlook is favourable for Ireland, at least as regards American investment. Table 13 shows a substantial rise in US manufacturing investment in Ireland from 1987 to 1989, with an increase occurring in most sectors. Ireland's share of US manufacturing investment in the EC also shows an increase, which suggests that Ireland could reasonably expect to gain from any further growth in such investment in the future.

Conclusion

There are 39 manufacturing sectors in Ireland which are likely to be relatively strongly affected by the completion of the internal market. Taken together, these 'sensitive' sectors account for 47 % of Irish manufacturing employment. The sensitive sectors which are in a relatively strong competitive position are more important, in terms of employment or value added, than those which may be vulnerable to increased international competition in the single market. About 28 % of manufacturing employment is in relatively strong sensitive sectors, as compared with 19 % in potentially vulnerable sectors.

Irish industry, therefore, looks to be in a relatively favourable position, on balance, to face the single European market. This conclusion is somewhat strengthened by the fact that the stronger sectors are relatively concentrated in activities which are enjoying fast growth in demand and which are likely to become increasingly important.

Many of the stronger sensitive sectors, however, are largely composed of branches of foreign-owned multinational companies. Such companies might not always respond to the new opportunities of the single market by expanding production in Ireland, since they would often have other options to expand production elsewhere. But the indications to date are that expansion of the predominantly foreign-owned sectors can, in fact, be expected.

Ireland

Annex

Sources used for the indicator of the share of exports in gross output.

'Exports as % of gross output' is total Irish exports, to all countries, of the industry concerned as a percentage of its gross output. The data are from three different sources. Source 1 is the Census of Industrial Production (CIP) 1986, Table 9; this is the preferred source when data are available at the required NACE 3-digit level. Source 2 is the Industrial Development Authority (IDA) (1985), Appendix V. Data from this source cover enterprises employing over 30 people in 1983. This is the preferred source for sectors which are not distinguished separately in the CIP 1986. Source 3 is export data from the SOEC combined with gross output data from the CIP 1986, where available, or SOEC (covering only enterprises employing over 20 people) if CIP data are not available. These sources are used for sectors for which data are not available from the other sources.

Bibliography

Ackermann, Charbel and Lindquist, John, 1989. '1992: Implications for the EC textile and clothing industry', *Textile outlook international*, The Economist Intelligence Unit.

Apparel Industries Federation, 1989. *The challenges ahead*: *Irish clothing into the nineties*, Confederation of Irish Industry, Dublin.

Atkins, W. S., Management Consultants, 1988. 'The cost of non-Europe in public sector procurement', in *Research on the cost of non-Europe*, Basic findings, Vol. 1, Commission of the European Communities.

Buigues, Pierre and Ilzkovitz, Fabienne, 1988. 'The sectoral impact of the internal market', Directorate-General for Economic and Financial Affairs, Commission of the European Communities, Document II/335/88-EN.

Economists Advisory Group, 1988. 'The cost of non-Europe in the pharmaceutical industry', in *Research on the cost* of non-Europe, Basic findings, Vol. 1, Commission of the European Communities. MAC Group, 1988. 'The cost of non-Europe in the foodstuffs industry', in *Research on the cost of non-Europe*, Basic findings, Vol. 1, Commission of the European Communities.

Industrial Development Authority, 1985. The Irish economy: expenditures of the Irish manufacturing sector, IDA, Dublin.

O'Donnell, Rory, 1989. 'Manufacturing', in John Bradley, Rory O'Donnell, John D. FitzGerald and Alan Matthews, *The economics of 1992: A symposium on sectoral issues*, The Economic and Social Research Institute, Dublin.

O'Malley, Eoin, 1989. Industry and economic development: the challenge for the latecomer, Gill and Macmillan, Dublin.

O'Malley, E. and Scott, S., 1987. 'Determinants of profit outflows from Ireland', in J. Bradley, J. FitzGerald and R. A. Storey (eds), *Medium-term review: 1987-92*, The Economic and Social Research Institute, Dublin.

Pitts, Eamonn and Simms, Nicholas, 1988. 'Detailed implications of 1992 for dairy industry', paper read to National Food Centre Conference on the challenge of 1992 for the food and drink industry, Dublin. ~

Italy

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Contents

1.	The sensitive sectors	265
1.1.	Non-revised list of sensitive sectors	265
1.2. 1.2.1. 1.2.2. 1.2.3.	Revised list of sensitive sectors National barriers Interindustry links Producers' views	265 265 265 265
2.	Competitive position of the sensitive sectors	267
2.1. 2.1.1. 2.1.2. 2.1.3. 2.1.4. 2.1.5.	Static competitive position Intra-EC trade Growth of demand Extra-EC trade Index of specialization Synthesis of indicators	267 267 268 268 268 268 268 269
2.2.	Dynamic competitive position	272
3.	Medium-term perspectives	272
3.1.	The behaviour of firms explored by surveys	272
3.2.	Direct investment abroad	274
3.3.	Mergers and acquisitions	275
3.4.	Research and development	276
3.5. 3.5.1. 3.5.2. 3.5.3.	Aspects of some of the most exposed sectors Textile and clothing sectors Automobile sector Chemicals sector	277 277 278 279

Bibliography

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List of tables

1.	The sensitive sectors in Italian industry (1985): non-revised list	266
2.	The sensitive sectors in Italian industry (1985): revised list	266
3.	Weak and strong areas among the sensitive sectors of Italian industry (1985-87 averages)	267
4.	Italy: distribution of the sensitive industries among areas and groups (value added, employment, as a % of total manufacturing industry)	268
5.	Rate of growth of demand in the sensitive sectors	269
6.	Static competitive position of the sensitive sectors in Italian industry (1985-87 averages)	270
7.	Static competitive position of the sensitive sectors in Italian industry (scores)	271
8.	Dynamic competitiveness of the sensitive sectors in Italian industry (differences between the 1985-87 and the 1980-82 averages)	273
9.	Dynamic competitiveness of the sensitive sectors in Italian industry (scores)	273
10.	Direct investment abroad by Italian firms and in Italy by foreign firms	275
11.	Mergers and acquisitions 1983-88 (number of contracts)	277
12.	Gross expenditure in research and development (as a percentage of GNP)	277
13.	Trade balance of the Italian textiles and clothing sectors	277

List of graphs

1.	Static competitive position of the sensitive sectors in Italian industry	272
2.	Number of acquisitions in Italy	276

1. The sensitive sectors

1.1. Non-revised list of sensitive sectors

The common method for identifying the sensitive sectors has been applied to the 1985 data for Italian industry.

The 40 sensitive sectors cover 48 % of Italy's industrial value added and approximately the same percentage of employment. This is about the same weight as found for the EC average (see Table 1).

A difference appears when one looks into the sensitive sectors. A distinction can be made between sectors where the non-tariff barriers are high and sectors where they are moderate. The former area accounts for only 14% of value added in Italy *vis-à-vis* 18% for the EC average. The degree of sensitivity should then be considered slightly lower than average.

The difference is due to a smaller than average value added of Group 3, which includes traditional sectors subject to important restructuring and under pressure from competition by extra-EC countries, mainly from newly industrializing countries. Here the completion of the internal market should only accelerate a restructuring process that is already well under way, and the outcome should largely depend upon the external trade policy of the EC. Such conditions are in fact largely present in Italian industry, and apply to a wider array of sectors than those originally included in Group 3.

1.2. Revised list of sensitive sectors

For Italian manufacturing industry, the method requires modifications in at least three cases:

1.2.1. National barriers

Certain products are protected at the national level against imports from extra-Community producers. The clearest example is the automotive sector (NACE 351), where a bilateral agreement between Italy and Japan has been in force for over 30 years, keeping Japanese exports to Italy (and Italian exports to Japan) at a very low level of a few thousand vehicles. No explicit intra-EC barriers exist, so the sector could be considered as non-sensitive; in fact it is included in Group 4, implying recognition of moderate NTBs. In the case of Italy, though, the implications of 1992 are quite important. Free circulation of goods in the EC area is inconsistent with the present arrangement between Italy and Japan, so it is logical to expect the fall of a very effective barrier protecting Italy's automobile market from external competition as an indirect but sure consequence of the 1992 programme. The barrier against Japanese cars is certainly a high and not a moderate one.

The situation in the motor-cycle sector (NACE 363) is almost identical, so we have included it in the sensitive area.

A similar argument applies to textiles and clothing. Here the whole European market is now protected by the Multifibre Agreement (MFA), setting maximum levels of expansion for exports from less developed countries into the area. By itself, the completion of the internal market implies only marginal changes of the MFA machinery: the present agreement sets a Community framework for national quotas, while in the future only Community quotas will be applicable. The change in the allocation of quotas is equivalent to the removal of an intra-EC barrier.

A substantial liberalization of imports will affect European producers heavily and particularly the Italians who hold a relatively large share of the European market. The conclusion is that the sectors now benefiting from the MFA should be considered as sensitive in Italy. This implies inclusion in the sensitive area of the following sectors: knitting (NACE 436) and textile finishing (437). It equally implies that within the sensitive area, the cotton industry (432) and the clothing industry (453) need to be moved from the sectors with moderate barriers to join the high-barrier group.

1.2.2. Interindustry links

Interindustry links are likely to transmit effects from sectors where the NTBs have a direct impact to other sectors. The clearest case is the textiles/clothing chain. Even if the described liberalization effect should operate mainly at the level of final products, such as clothing and knitwear, it is highly implausible that the weaving and the spinning industry would not be heavily affected. Similarly, production of man-made fibres is strictly connected with local (European) absorption of the intermediate product, i.e. with the activity level of the textile and of the knitting industries. Therefore the man-made fibres industry (260) is included in the sensitive area.

For the same reason the sectors producing bodies for motor vehicles (352) and parts and accessories for motor vehicles (353) are also included in the list.

1.2.3. Producers' views

The last reason for modifying the original classification is a clear indication from domestic producers that their perception of non-tariff barriers diverges from the results of the European classification. The difference may be due to a peculiar specialization, internal mix, or positioning in the market, by Italian producers. This should not be surprising in concentrated sectors, where one or two firms dominate. This is the case for basic chemicals (251), where the large Italian producers have declared that they see no important change deriving from the internal market programme. Consequently, the sector has been removed from the sensitive list.

The final result of these inclusions, exclusions and shifts is illustrated in Table 2. The total weight of the sensitive area appears to have been slightly increased from 47,7 to 50% of value added. The increase is rather small, and the difference with respect to the EC average is only about 1%.

Table 1

The sensitive sectors in Italian industry (1985): non-revised list

	Value added	Employment	Import (intra/extra)	Export/Production (intra)
Group 1				
High-tech public-procurement markets	5,79	3,53	129,99	22,83
Group 2				
Traditional public-procurement markets and regulated markets	5,52	4,00	170,21	3,81
Group 3				
Sectors facing competition from NICs	2,82	3,53	179,57	11,96
High NTBs (Groups 1 to 3)	14,12	11,06	142,02	12,06
Group 4				
Sectors with moderate NTBs	33,62	37,55	183,39	24,07
Sensitive sectors	47,74	48,61	171,65	21,06
Industry total	100,00	100,00	147,13	16,76

Table 2

The sensitive sectors in Italian industry (1985): revised list

Relevance of barriers	Value added (EC)	Value added	Employment	Import (intra/extra)	Export/Production (intra)
High NTBs	18,10	22,78	22,46	211,18	18,13
Moderate NTBs	30,80	27,25	29,72	137,34	28,05
Sensitive sectors	48,90	50,03	52,18	172,29	23,39
Industry total	100,00	100,00	100,00	147,13	16,76

There is a possible understatement here that deserves some attention. All the calculations have been performed on the basis of a survey of firms with 20 or more employees. Very small firms are therefore excluded, and this certainly implies an understatement of the value added in highly fragmented sectors such as knitting. The understatement is not only absolute, but is also relative to the other countries, given the greater frequency of very small firms in the Italian textile, knitting, clothing and similar industries.

A noticeable change to the internal composition of the sensitive area results from this revision. The sectors with high NTBs jump from 14,1 to 22,8 % of value added, well above the Community average. Following our revised criteria, the involvement of the Italian industry in the 1992-induced adjustment process looks greater than expected under the commonly agreed criteria.

In conclusion, there are the following revisions in the list of sensitive sectors:

New sectors in the high NTBs group

- 363 Motor cycles
- 436 Knitting
- 437 Textile finishing

New sectors in the moderate NTBs group

- 260 Man-made fibre industry
- 352 Bodies for motor vehicles
- 353 Motor vehicles (parts and accessories)

Shifts from moderate to high NTBs group

- 351 Automobiles
- 432 Cotton industry
- 453 Clothing industry

Removal

251 Basic chemicals

2. Competitive position of the sensitive sectors

2.1. Static competitive position

In order to establish which of the sensitive sectors will represent weak or strong areas in the face of 1992, a series of indicators have been used.

2.1.1. Intra-EC trade

Firstly, sensitive sectors are divided into three areas: weak, balanced or strong, according to the sectoral balance of intra-EC trade.

Table 3

Weak and strong areas among the sensitive sectors of Italian industry (1985-87 averages)

NACE	Sector	CR intra
couc		
	Weak areas	
427	Brewing, malting	0,89
256	Oth. chem. pr. for ind.	29,48
344	Telecommunications	40,01
351	Manu. motor vehicl.	41,83
372	Manu. med. equipm.	51,39
362	Manu. railway-roll.	52,03
342	Electric machinery	57,64
345	Electronic equipm.	52,87
257	Pharma. prod.	61,82
323	Manu. textile mach.	64,91
428	Soft drinks	70,83
325	Manu. plant mines	74,85
330	Office mach.	76,14
421	Confect., cocoa	84,02
326	Transm. equipment	84,58
	Balanced areas	
260	Man-made fibres	90,99
431	Wool industry	91,73
	Strong areas	
481	Manu. rubber	110,89
353	P. and acc. for mot. v.	112,00
247	Manu. glass	119,35
364	Manu. aerospace eq.	127,07
438	Manu. carpets	138,90
327	Mach. specif. ind.	140,25
352	Bodies for motor v.	163,03
322	Machtools for met.	150,51
361	Shipbuilding	166,12
347	El. lamps	170,60
341	Insul. wires/cabl.	194,89
315	Boilermaking	196,94
455	Manu. househ. text.	198,18
494	Manu. sport goods	204,50
324	Manu. mach. food	214,32
432	Cotton industry	264,32
248	Manu. ceramics	301,40
321	Agr. machinery	342,87
363	Motorcycles	356,29
491	Manu. jewellery	389,43
493	Photo., cine labs	406,41
346	El. household appl.	466,23
453	Clothing	588,53
436	Knitting industry	1 387,23
451	Manu. m-pr. lootw.	3 112,11
425	Wine Iresh grape	11 292,72
41/	Textile finishing	13 898,83
43/	rexule limisling	118

Note: CR: coverage ratio (X/M).

Italy: Distribution of the sensitive industries among areas and groups (value added, employment, as a % of total manufacturing industry)

Areas	High NTBs	Moderate NTBs	Total
	Value added		
Weak	11,88	10,00	21,88
Balanced	0,72	1,61	2,33
Strong	11,49	14,33	25,82
Total	24,09	25,94	50,03
	Employment		
Weak	8,19	10,27	18,46
Balanced	0,62	1,59	2,21
Strong	15,16	16,35	31,51
Total	23,97	28,21	52,18

Table 3 shows the picture resulting from the application of this simple criterion to the sensitive sectors. The weights of the three areas in terms of value added and employment are reported in Table 4.

The strong area looks much larger than the weak in terms of value added; this applies both for the sectors with high barriers and moderate barriers. In terms of employment the strong sectors are even more important, particularly those affected by high barriers: within this group are sectors which are based on labour-intensive industries.

The interpretation of the results requires a qualification in view of the arguments outlined in Section 1: sectors such as cars and textiles/clothing could be affected unfavourably by the removal of barriers, so that a strict application of the balance-of-trade criterion may lead to an unduly optimistic picture. The sectors of cotton, knitting and clothing are now considered to be strong, although the expected outcome of the removal of barriers could be at least uncertain and possibly negative; in which case the balance between strong and weak sectors illustrated in Table 3 would be flatly reversed.

2.1.2. Growth of demand

A good indicator of the outlook for a sector is the rate of growth of demand for its products. It is better for an industrial system to specialize in sectors with a high growth of demand. This also applies to the removal of barriers: the benefit for the strongest competitors is likely to be greater where there is high-demand growth.

As Table 5 shows, the Italian industrial system has its strong points where demand growth is slow, and is scarcely present where it is fast. More than 65 % of the value added of the whole sensitive area belongs to sectors clustering around a diagonal running from strong sectors with slow-growing demand to weak sectors with fast-growing demand. This of course implies a rather pessimistic qualification to the message stemming from Table 4.

2.1.3. Extra-EC trade

Another complementary indication can be obtained by considering the coverage ratio for extra-Community trade alongside the same indicator for intra-Community trade. Although the readiness of a sector to profit from the removal of internal barriers is best measured by the latter, the former can add information on the sector's overall performance.

Table 6 shows that the two indicators converge in many cases but not in the majority of cases. Out of 15 sectors that we define as weak on the basis of their intra-EC coverage ratio, 10 show a strong position in extra-Community trade. Such a strong position is not going to help when intra-EC barriers fall; it only indicates the possible existence of a good export capacity that can be exploited either as an alternative to a difficult expansion in the European market, or as an asset to be used by Italian firms when bargaining agreements or mergers with foreign firms. This seems to be the case in various sectors producing investment goods.

In contrast, some sectors look stronger in their trade within the EC area than in their external trade. As an example, bodies, parts and accessories for motor vehicles are heavily imported from extra-EC countries, where the domestic producer has plants or buy-back agreements with other producers to whom it has sold plants and machinery.

Manufacturing of sports goods and of household textiles also show a rather poor performance in extra-EC trade while looking strong in Europe; the pattern may spread to other textiles, if European protection loosens.

2.1.4. Index of specialization

A third indicator is the index of specialization, which has been calculated both with reference to the intra-EC trade (SI) and to production (SI prod). In some cases useful information arises, such as in the following examples.

Italy shows large volumes of production of railway equipment (SI prod), with a very poor trade performance in the EC and some export capacity in the non-EC area.

Production of office machinery is high (SI prod) while the trade position is weak both on the EC and on the external side; indicating a high domestic absorption in the period

Rate of growth of demand in the sensitive sectors

	Slow			Moderate		Fast	
	NACE	Sector	NACE	Sector	NACE	Sector	
Weak area	372 323 325 326	Manu. med. equipm. Manu. textile mach. Manu. plant mines Transm. equipment	427 362 342 421	Brewing, malting Manu. railway-roll. Electric machinery Confect., cocoa	256 344 351 345 257 428 330	Oth. chem. pr. for ind. Telecommunications Manu. motor vehicl. Electronic equipm. Pharma. prod. Soft drinks Office mach.	
		Value added : 3,25 Employment : 3,33		Value added : 2,55 Employment : 2,30		Value added : 16,07 Employment : 12,84	
Balanced areas	260	Man-made fibres	431	Wool industry			
		Value added :0,72 Employment :0,62		Value added : 1,61 Employment : 1,59			
Strong areas	481 247 438 327 322 347 494 324 494 324 432 248 363 491 436 451 437	Manu. rubber Manu. glass Manu. carpets Mach. specif. ind. Machtools for met. El. lamps Manu. sport goods Manu. sport goods Manu. mach. food Cotton industry Manu. ceramics Motorcycles Manu. jewellery Knitting industry Manu. m-pr. footw. Textile finishing	353 364 361 315 455 346 453 425 417	P. and acc. for mot. v. Manu. aerospace eq. Shipbuilding Boilermaking Manu. househ. text. El. household appl. Clothing Wine fresh grape Manu. pasta	352 341 321 493	Bodies for motor v. Insul. wires/cabl. Agr. machinery Photo., cine labs	
		Value added : 15,03 Employment : 17,48		Value added : 8,82 Employment : 11,90		Value added : 1,97 Employment : 2,12	

Fast: more than 5% (annual rate)

considered (in fact 1985-87 has been a boom period for business investment in office automation).

2.1.5. Synthesis of indicators

Table 7 presents a global score, i.e. a rough synthesis of the indicators of a sector's static competitive position. The picture generally confirms the classification of strong and weak sectors already used. The few discrepancies can be explained.

Aerospace equipment is the only Italian high-tech sector with a positive trade balance; starting from a relatively low level, production has been growing rapidly over the last few years (as the following dynamic analysis reveals). Textile machinery is a much stronger sector than its intra-EC coverage ratio shows: in fact the large Italian textile industry requires large imports of machinery, and the Italian production of textile machinery is specialized in some types which do not cover the wide demand of Italian and European textile firms, but have gained a substantial market share in third markets.

The distribution of total employment among sectors ranked according to our scoring system (from -4 to +4) is presented in Graph 1. It is evident that there is a concentration (21,4 %) on the strong sectors which are based on labourintensive industries (textiles and clothing). Moreover the relatively weak sectors (-2 according to our scores), particularly motor vehicles and electrical machinery absorb an important part of total employment.

Static competitive position of the sensitive sectors in Italian industry (1985-87 averages)

NACE	Sector	CR intra	CR extra	SI	SI prod.
		Weak areas			
407	Deresia e estrica	0.00	26.52	1.52	22.02
427	Brewing, malting	0,89	20,52	1,53	23,03
230	Oth. chem. pr. for ind.	29,48	102,57	38,18	81,45
251	Monu motor vahial	40,01	19,09	59,42	02,02
351	Manu. motor venici.	41,83	155,43	53,21	82,34
372	Manu. med. equipm.	52,02	/1,29	05,79	101,67
302	Manu. raliway-roll.	52,03	280,10	40,09	198,68
343	Electronic equipm.	52,87	55,70	13,32	99,79
342	December machiner.	57,04	1/4,/5	02,72	41,87
237	Manu taxtila mach	64.01	151,24	07,83	154,00
323	Manu. textile macn.	04,91	339,39	124,05	107,87
420	Soft drinks	70,85	893,37	10,03	93,78
323	Office mach	74,03	SSU,49 84.00	71,11	90,14
421	Confect coope	70,14	185 70	/1,45	12.14
421	Tronom aquinment	84,02	185,79	51,01	13,14
520	I fansm. equipment	84,38	173,44	11/,/4	125,40
		Balanced areas			
260	Man-made fibres	90,99	220,42	141,32	259,52
431	Wool industry	91,73	56,98	127,92	227,35
		Strong areas			
481	Manu, rubber	110.89	257.12	96.44	112.63
353	P. and acc. for mot. veh.	112.00	564.46	80.12	89.26
247	Manu. glass	119.35	223,58	113.07	98.06
364	Manu. aerospace eq.	127.07	99.38	84.29	81.29
438	Manu. carpets	138,90	156,78	52,59	29,29
327	Mach. specif. ind.	140,25	761,35	134,22	142,25
322	Machtools for met.	150,51	312,24	135,37	171,63
352	Bodies for mot. veh.	163,03	640,09	56,30	173,41
361	Shipbuilding	166,12	168,88	73,33	81,21
347	El. lamps	170,60	333,22	178,83	82,93
341	Insul. wires/cabl.	194,89	475,04	90,92	257,14
315	Boilermaking	196,94	5 966,11	89,38	44,41
455	Manu. househ. text.	198,18	85,43	62,02	155,43
494	Manu. sport goods	204,50	71,18	141,37	37,83
324	Manu. mach. food	214,32	953,21	140,91	128,98
432	Cotton industry	264,32	214,49	224,96	119,87
248	Manu. ceramics	301,40	700,96	235,48	191,81
321	Agr. machinery	342,87	1 256,60	150,42	152,00
363	Motorcycles	356,29	207,84	262,99	333,51
491	Manu. jewellery	389,43	1 398,62	93,70	194,65
493	Photo., cine labs	406,41	458,42	190,10	144,02
340	Clothing	466,23	05/,09	255,98	186,39
433	Knitting industry	288,23	380,72	207,18	150,95
430	Manu man footw	1 387,23	389,09	332,21	183,80
401	Wine fresh grane	5 112,11	914,95	432,03	228,84
417	Manu nasta	11 272,12	102 538 40	473,00	217,85
427	Textile finishing	13 070,03	102 330,49	030,03	340,09
437	rextile minisming	na	na	na	218,43

Note: CR: coverage ratio (X/M) SI: Balassa specialization index (of the Italian intra-EC exports) SI prod.: Balassa specialization index (of the Italian production).

Static competitive position of the sensitive sectors in Italian industry (scores)

NACE code	Sector	CR intra	CR extra	SI	SI prod.	Global score
		Weak ar	eas			
427	Brewing, malting	- 1	- 1	- 1	- 1	- 4
344	Telecommunications	-1	- 1	- 1	-1	-4
372	Manu, med. equipm.	-1	-1	- 1	0	- 3
345	Electronic equipm.	-1	-1	-1	0	- 3
256	Oth, chem, pr. for ind.	-1	1	- 1	- 1	- 2
351	Manu, motor vehicl.	-1	1	-1	-1	$-\frac{1}{2}$
342	Electric machinery	-1	1	- 1	- 1	$-\frac{1}{2}$
330	Office mach.	-1	-1	- 1	1	$-\frac{1}{2}$
421	Confect. cocoa	-1	î	-1	-1	$-\frac{1}{2}$
428	Soft drinks	-1	î	-1	0	-1
325	Manu, plant mines	-1	î	- 1	Ő	- 1
362	Manu railway-roll	-1	1	-1	1	0
257	Pharma prod	-1	1	- 1	1	0
323	Manu textile mach	-1	î	1	1	2
326	Transm. equipment	-1	1	1	1	2
		Balanced a	areas			
431	Wool industry	0	- 1	1	1	1
260	Man-made fibres	0	1	1	1	3
		Strong an	reas			
364	Manu, aerospace eq.	1	0	-1	- 1	-1
353	P. and acc. for mot. v.	1	1	-1	- 1	0
438	Manu, carpets	1	1	- 1	- 1	0
361	Shipbuilding	1	1	- 1	- 1	0
315	Boilermaking	1	1	- 1	- 1	0
455	Manu, househ, text.	1	- 1	- 1	1	0
494	Manu, sport goods	1	- 1	1	- 1	0
352	Bodies for motor v.	1	1	- 1	1	2
347	El. lamps	1	1	1	-1	2
481	Manu, rubber	1	1	0	1	3
247	Manu, glass	1	1	1	0	3
341	Insul, wires/cabl.	1	1	0	1	3
491	Manu, jewellery	1	1	0	1	3
327	Manu, specif, ind.	1	1	1	1	4
322	Mach-tools for met.	1	1	1	1	4
324	Manu, mach, food	1	1	1	1	4
432	Cotton industry	1	1	1	1	4
248	Manu, ceramics	1	1	1	1	4
321	Agr. machinery	1	1	1	1	4
363	Motorcycles	1	ī	1	1	4
493	Photo., cine labs	1	i	1	1	4
346	El, household appl	1	1	1	1	4
453	Clothing	1	1	1	1	4
436	Knitting industry	i	1	1	1	4
451	Manu, m-pr. footw.	1	1	1	1	4
425	Wine fresh grape	1	1	1	1	4
417	Manu. pasta	î	1	1	1	4
437	Textile finishing	na	na	na	na	

Note: -1, if CR, SI < 90 0, if 90 \leq CR, SI \leq 110 +1, if CR, SI > 110.



2.2. Dynamic competitive position

One step forward towards an assessment of the likely impact of 1992 can be taken by adding to the indicators of present strength some indication on whether strength is increasing or decreasing. Table 8 contains three dynamic indicators, representing the change between the 1980-82 average and the 1985-87 average of: the intra-EC coverage ratio, the index of specialization in exports to the EC, the extra-EC coverage ratio. The values of the indicators have been transformed into scores in Table 9, with a synthetic score in the column on the right.

Among the weak sectors it is worth mentioning the positive trend in telecommunications equipment, indicating some results arising from the large reorganization of the industry that has occurred in the last 10 years. The trends in some weak investment goods sectors are also positive: these include transmission equipment and steel industry plants.

In contrast, pharmaceuticals, soft drinks and brewing are weak and becoming weaker.

Large sectors, traditionally strong but showing a definitely negative trend are found in the area that has been called 'fashion goods': footwear, household textiles, sports goods. Clothing still presents a positive trend in terms of extra-EC trade, but a negative one in terms of indicators of intra-EC competitivity.

No important sector with a strong position shows a very strong and clear positive trend, but a good performance can be noticed in carpets, cotton goods and knitting as well as in a number of engineering sectors.

3. Medium-term perspectives

An exercise of forecasting the impact of 1992 on the industrial system should not rely on sectoral indicators only, but also take into account the likely response of firms and their present attitudes with respect to the internal market programme.

3.1. The behaviour of firms explored by surveys

The attitudes and expectations of firms have been explored with the help of a number of surveys.¹ They indicate that:

The one promoted by the Commission and executed in 1987 involving 11 000 firms in all the countries of the Community (EEC, 1988); the KPMG Peat Marwick survey of 1988; the Fortune—Ernst & Whinney survey of 1989.

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Table 9

Dynamic competitiveness of the sensitive sectors in Italian industry (differences between the 1985-87 and the 1980-82 averages)

NACE code		CR intra	▲ SI	CR extra			
Weak areas							
427	Brewing malting	- 27 55	- 10 38	- 14 28			
256	Oth chem pr for ind	7 71	6 75	-14.40			
344	Telecommunications	-4.08	9.21	9.27			
351	Manu motor vehicl	19 21	-433	-18.94			
372	Manu med equip	1 64	4 48	-15.26			
362	Manu railway-roll	-15.12	23.85	-30.37			
345	Electronic equipm	-0.10	-14.68	32.92			
342	Electric machinery	2 07	2 39	-3653			
257	Pharma prod	-22.59	-10.75	-44.17			
323	Manu textile mach	-234	-0.94	22.97			
428	Soft drinks	-42.10	- 35 53	-64.09			
325	Manu plant mines	17 99	13.62	0.29			
330	Office mach	-21.84	-30.57	-4.70			
421	Confect cocoa	-31.42	-9.58	- 8 89			
326	Transm. equipment	22,04	12,56	19,13			
	Baland	red areas		, , , , , , , , , , , , , , , , , , , ,			
	Daran	eu areas					
260	Man-made fibres	26,61	24,40	- 5,25			
431	Wool industry	1,73	16,83	-1,85			
	Stron	g areas					
481	Manu. rubber	-0.64	3,56	- 5,63			
353	P. and acc. for mot. v.	17,24	1,87	- 37,97			
247	Manu. glass	10,46	2,70	-20,52			
364	Manu. aerospace eq.	87,66	56,75	-26,22			
438	Manu. carpets	39,79	11,17	25,25			
327	Mach. specif. ind.	24,70	-0,39	11,06			
322	Machtools for met.	16,10	5,69	-0,45			
352	Bodies for mot. v.	79,23	6,24	-22,09			
361	Shipbuilding	34,09	19,54	-64,32			
347	El. lamps	5,16	4,29	15,85			
341	Insul. wires/cabl.	-22,05	-21,20	-68,68			
315	Boilermaking	-30,48	-27,83	-51,78			
455	Manu. househ. text.	-20,48	-27,34	-26,71			
494	Manu. sport goods	-11,04	-10,60	-10,40			
324	Manu. mach. food.	10,52	10,92	-8,66			
432	Cotton industry	-0,14	13,12	6,62			
248	Manu. ceramics	-8,93	-11,74	-2,70			
321	Agr. machinery	35,85	-2,20	17,77			
363	Motorcycles	-50,33	-8,48	-20,30			
491	Manu. jewellery	24,53	17,62	-13,03			
493	Photo., cine labs	-21,30	- 5,49	101,88			
346	El. household appl.	27,20	7,52	-25,78			
453	Clothing	-15,93	-3,17	11,32			
436	Knitting industry	6,46	-0,54	26,55			
451	Manu. m-pr. footw.	- 38,60	-12,43	- 30,95			
425	Wine fresh grape	- 39,53	-8,13	16,41			
417	Manu. pasta	76,58	-1,39	94,18			
437	l extile finishing	na	na	na			

Dynamic competitiveness of the sensitive sectors in Italian industry (scores)

NACE code	Sector	▲ CR intra	▲ SI	CR extra	Global score			
Weak areas								
427	Brewing, malting	- 1	-1	-1	- 3			
257	Pharma, prod.	- 1	-1	- 1	- 3			
428	Soft drinks	-1	-1	- 1	- 3			
421	Confect., cocoa	- 1	-1	-1	- 3			
330	Office mach.	- 1	-1	0	-2			
351	Manu. motor vehicl.	1	-1	- 1	-1			
362	Manu. railway-roll.	-1	1	-1	-1			
372	Manu. med. equipm.	0	1	-1	0			
345	Electronic equipm.	0	-1	1	0			
342	Electric machinery	0	1	-1	0			
323	Manu. textile mach.	0	-1	1	0			
256	Oth. chem. pr. for ind.	1	1	-1	1			
344	Telecommunications	0	1	1	2			
325	Manu. plant mines	1	1	0	2			
326	Transm. equipment	1	1	1	3			
	Balan	ced areas						
260	Man-made fibres	1	1	-1	1			
431	Wool industry	0	1	0	1			
	Stro	ng areas						
341	Insul, wires/cabl.	-1	-1	-1	- 3			
315	Boilermaking	-1	-1	-1	- 3			
455	Manu. househ. text.	-1	-1	-1	- 3			
494	Manu. sport goods	-1	-1	-1	- 3			
363	Motorcycles	-1	-1	-1	- 3			
451	Manu. m-pr. footw.	- 1	-1	-1	- 3			
248	Manu. ceramics	- 1	- 1	0	-2			
493	Photo., cine labs	-1	-1	1	-1			
453	Clothing	-1	-1	1	-1			
425	Wine fresh grape	- 1	- 1	1	-1			
481	Manu. rubber	0	1	-1	0			
353	P. and acc. for mot. v.	1	1	-1	1			
247	Manu. glass	1	1	-1	1			
364	Manu. aerospace eq.	1	1	-1	1			
327	Mach. specif. ind.	1	-1	1	1			
352	Bodies for motor v.	1	1	-1	1			
361	Shipbuilding	1	1	-1	1			
324	Manu. mach. food.	1	1	-1	1			
321	Agr. machinery	1	-1	1	1			
491	Manu. jewellery	1	1	- 1	1			
346	El. household appl.	1	1	- 1	1			
436	Knitting industry	1	-1	1	1			
417	Manu. pasta	1	-1	1	1			
322	Machtools for met.	1	1	0	2			
432	Cotton industry	0	1	1	2			
438	Manu. carpets	1	1	1	3			
347	El. lamps	1	1	1	3			
437	Textile finishing	na	na	na	na			
Notes: -	-1, if $dCR < -5\%$), if $-5\% \le dCR \le +5\%$			- 1, 0,				
	+1, if dCR > +5%			+ 1,	if $dSI > 0$			

(a) the White Paper programme has been taken very seriously; the Italian employers do not doubt that it will be realized, although approval of some important measures is proving to be very complex;

(b) the completion of the internal market is also considered to be as a whole beneficial to the Italian economy; this belief is strongly held by large firms, while the small ones appear to be more cautious;

(c) there is a widespread concern over the state of the Italian infrastructure and public administration, where firms see a handicap bearing on their performance in the integration process; optimism is usually expressed in terms of the capabilities of firms themselves rather than to the readiness of the country as a whole;

(d) fear has been expressed that State subsidies to firms may be forbidden by a stricter control by the Commission, thus limiting the use of the most easily available instrument of industrial policy;

(e) among the effects expected from the elimination of nontariff barriers, Italian entrepreneurs seem to worry most about technical barriers: technical norms and standards and public procurement.

When asked about their reaction, firms usually answer that 1992 has not significantly influenced their activity and their strategies. This appears rather puzzling and perhaps disappointing.

A series of in-depth interviews¹ in recent months with managers representing different sectors and firm sizes have outlined a somewhat different attitude. This difference comes from two factors:

- (i) it may be difficult to isolate the impulse deriving from Community policy, even when real and efficient;
- (ii) many practical aspects of the new environment are only gradually appreciated as the 1992 programme advances. It is worth noting that in recent months the trade associations of the textile and other chemical industries have taken steps to improve the procedures for setting technical norms and certifying product quality. Further progress in the creation of Community directives and in their reception into the national legislation (a slow process in Italy) is likely to affect the opinions of entrepreneurs.

The available evidence on the recent actual behaviour of firms shows that:

(a) Italian firms, large and not-so-large, have long been adopting strategies of internationalization, not limited to commercial operations but open to a vast array of instruments, such as simple cooperation agreements, joint ventures, exchange of minority interests, acquisition of controlling positions;

(b) the greatest attention in recent times has been devoted to the Community market.

3.2. Direct investment abroad²

At the end of 1987 Italian firms held participations in 326 industrial firms in Europe, representing 48 % of all investment abroad in terms of numbers of firms. Investments by Italian firms are mainly located in France and Spain, less often in the UK and The Netherlands.

In general, direct investment abroad by Italian firms has been growing rapidly in recent years, recuperating a traditional lag due to a more recent industrial development, a sectoral mix dominated by traditional and light industries, and a prevalence of small enterprises. The traditionally exportoriented Italian industry has taken a turn in favour of direct investment in recent times.

The Italian firms under review operate primarily in sectors such as food, rubber and plastics, paper, and other means of transport; the principal direct investment operations in Europe by Italian firms show high involvement in automotive component industries and confirm the success of the Italian entrepreneurs in the French market. Foreign firms in Italy are concentrated mainly in other sectors such as the oil industry, office machinery, pharmaceuticals, etc. (see Table 10).

It is interesting to note that some 80 to 90 % of the turnover of Italian firms abroad is earned in other EC countries.

The internationalization of Italian firms is led by the largest groups but also involves medium-sized enterprises; after being initially directed mainly to developing and intermediate countries it is now directed to industrialized countries; includes initiatives in high-tech sectors and shows a preference for controlling, rather than fifty-fifty or minority participations.

¹ Undertaken by the authors.

Direct investment abroad by Italian firms and in Italy by foreign firms

Direct investment abroad by	Italian firms	Direct investment in Italy by foreign firms			
Turnover			Turnover		
Sectors	Total (billion LIT, 1986)	Realized in EUR 12 (%)	Sectors	Total (billion LIT, 1986)	
Food	4 943	99.58	Oil industry	11 677	
Rubber and plastic	2 827	95,47	Office mach.	8 814	
Electro. telec.	2 427	99,59	Electr. mach.	8 676	
Paper and printing	2 255	93,08	Pharma. prod.	7 400	
Other means of transport	2 225	97,30	Plants and mech. mach.	6 649	
Office mach.	1 571	89,69	Food	6 536	
Extraction of petrol	864	55,32	Fine chemical and spec.	6 013	
Plants and mech. mach.	860	77,56	Electro. telec.	5 598	
Detergent and cosmetics	724	100,00	Base chemicals	4 220	
Base chemical	641	100,00	Detergent and cosmetics	4 008	
Textile	621	74,07	Motor vehic. and parts	3 333	
Metal prod.	541	96,12	Paper and printing	2 964	
Drink and tobacco	530	91,13	Rubber and plastic	2 889	
Pharma. prod.	524	90,08	Metal prod.	2 846	
Non-metal prod.	353	92,63	Drink and tobacco	2 353	
Man-made fibres	303	100,00	Metal ind.	2 201	
Electr. mach.	298	91,28	Non-metal prod.	1 919	
Nuclear fuels	297	100,00	Mechanical engineering	950	
Clothing	232	77,16	Textile	611	
Total manuf.	29 448	93,86	Total manuf.	91 526	

Source: Rapporto R&P al CNEL (1989).

Internationalization is not widespread in the vast area of small and medium-sized firms that form the majority of Italian industry. But several medium-sized and even small firms have a share in foreign investment activity: they are highly specialized enterprises, with a competitive advantage in a narrow market niche; they belong to traditional sectors as well as high-tech sectors such as pharmaceuticals and industrial machinery.

3.3. Mergers and acquisitions

Between 1985 and 1987, Italy witnessed a rapid expansion of acquisition operations by both large and smaller firms (see Graph 2). 1992 has further stimulated a process that was already in motion.

Examining the disaggregate data (see Table 11), one may observe a pronounced polarization of acquisition operations towards very 'strong' (according to the classification used in this study) or very 'weak' sectors. On one side, there are the chemicals and food sectors, while those concerning mechanical and electrical engineering and textiles/clothing make up the other. In this respect, one may see an attempt by the 'weak' sectors to adjust to the wave of mergers that has characterized for some time both the food and chemical sectors on a world-wide level. On the other hand, the 'strong' sectors mentioned are probably also trying to extend their presence in other sectors or increase product diversification. Thus, it would seem that greater international integration, which has been accentuated by the expectations of 1992, may have stimulated some important transformations in the structure of Italian industry: to a model of development based primarily on a few large vertically integrated firms and a fragmented network of small flexible firms has been introduced the multifuctional group. The latter has the advantage of assuring remarkable financial strength and unified strategy, while also assuring autonomy in the organization of production at the individual firm level. More specifically, the acquisitions phenomenon allows for expansion into different market segments without the costs and difficulties sustained in the process of merging.



This concept is consistent with a growing need for product differentiation rather than reaching economies of scale. Also consistent with this model is the obvious need of manufacturing firms for marketing activities (distribution channels, technical assistance, collateral systems, etc.) and to specialize in a few areas of production by purchasing components or parts from outside.

An important role within this process has been played not only by the acquisition operations carried out by Italian firms, but those by European and American firms as well. Between 1983 and 1989, 42,1 % of the foreign buyer firms were European and 26,7 % were from the United States (in terms of the total number of acquisitions from abroad), while Italian firms acquired 43,5 % of their firms in Europe and 30,8 % in the United States (in terms of total number of acquired foreign firms).

3.4. Research and development

On a very general level one can see that the prospects of a single European market have encouraged an increase in R&D expenditure in Italy through two channels: the first

places the public institutions within the framework of international cooperation programmes, while the second primarily concerns the large firms operating in systems technologies.

Despite a slight increase over the level of the early 1980s, the ratio between expenditures in R&D and GDP in Italy is still clearly below the levels in the other major industrialized countries (see Table 12).

The modest technological strength of the Italian economy is consistent with a model of development specialized in traditional sectors that are not technology intensive, nor develop technologies,¹ and do not, on average, have a concentrated structure.

It is necessary to note that the sectors such as textiles and clothing often use advanced technology, but that this technology is developed outside the sector.

Mergers and acquisitions 1983-88

Sectors	Number of contracts
Chemical	141
Food, drink and tobacco	114
Mechanical engineering	105
Electrical engineering	54
Textile and clothing	53
Iron and steel	47
Means of transport	39
Glass	31
Paper	28
Printing	25
Rubber and plastic	23
Instrument engineering	13
Oil and coal	10
Wood and furniture	8
Metal products	8
Other manuf.	6
Leather and leather goods	1

Table 12

Gross expenditure in research and development (as a percentage of GNP)

1981	1986
2,40	2,80
2,30	2,80
2,40	na
2,00	2,30
2,40	2,40
1,00	1,30
	1981 2,40 2,30 2,40 2,00 2,40 1,00

During the 1980s, the largest expenditure in R&D was undertaken by the public sector (primarily public firms and universities), with their portion amounting to 63,8% of total expenditures in R&D in 1986, compared with 60,5% in 1980. One may see that Italy's modest recovery, which nevertheless is clearly inferior to that of other advanced nations, is the result of increased public commitment.

3.5. Aspects of some of the most exposed sectors

3.5.1. Textile and clothing sectors

In the textile and clothing sector there is a high level of integration among European countries.

This general observation, however, does not allow us to deduce that the impact of the single European market will be negligible for this sector. While it is true that there are no barriers to impede import-export movements among European countries, it is also the case that the sector has been characterized by two important aspects: strong protection against non-Community countries and highly differentiated distributive systems.

Some brief information as to the sector itself is necessary.

Italy's strong competitive position in this sector is well known. In 1987 Italy's share of the world textile market was about 9 % and it held 11 % of the clothing market. It was second only to Germany with 12 % of textiles and Hong Kong with 13 % of clothing. Concerning the trade balance Italy precedes these two countries with a value, in 1987, of USD 2,8 billion in the textile sector (against 1,6 for Germany) and USD 7,5 billion in clothing (against 7,4 for Hong Kong). Within the European Community too the competitive strength of Italy is evident (see Table 13).

Table 13

Trade balance of the Italian textiles and clothing sectors

		(billion USD, 1987)
	Textiles	Clothing
Italy	2,03	5,24
France	-1,24	-1,16
Germany	0,95	2,78
United Kingdom	-2,07	-0,43
Source: GATT, 1988.		

These two aspects vary in importance from sector to sector (cotton manufacturing, wool manufacturing, clothing, etc.) and companies have adopted different strategies to deal with them.

Cotton manufacturers, both of thread and of textiles, while denying the likelihood of any negative effects in 1992, are a little worried about the fiercer competition they expect from countries which have recently joined the Community (Spain and Portugal) and from the Mediterranean area (Turkey, Yugoslavia). Italy's cotton manufacturing industry is one of the most advanced in the world. Notwithstanding this, the penetration by foreign countries is on the increase. In terms of trade balances these difficulties are manifest not only with non-EC countries but also within the Community. Companies in this sector are somewhat worried at the prospect of greater liberalization of the market. They will, therefore, adopt the following strategies:

- (1) they will attempt to rationalize the distribution network;
- (2) they will follow a policy of merger and acquisition to increase their competitive power;
- (3) they will extend their range of products and try to capture new market segments;
- (4) they will partially decentralize production in extra-Community countries.

On the basis of available and fragmented information, the resulting overall outcome is ambiguous.

On the one hand, greater competitive pressure could reduce the price of goods (and also, presumably, the extremely high price dispersion around the average), on the other hand, there will be more concentration and this could have the opposite effect. Moreover, while increasing the range of goods produced could have positive effects in that a greater variety of goods would be available, transferring production abroad could have serious effects on employment.

Entrepreneurs working in the wool manufacturing sector state that '1992 is an opportunity rather than a risk'. Although Spain and Portugal are expected to provide stiffer competition, no particular countervailing strategies are planned at either the production or distribution level. The strong price competitiveness of this sector, characterized by highquality products, leads to the belief that the effects of greater integration are unlikely to influence the high price dispersion which typifies this sector.

In the clothing sector, 1992 is seen as an opportunity for market enlargement, but also a challenge in terms of new problems which must be faced. Markets are expected to grow (especially in Spain) and new segments to be enlarged (upper middle range in Germany). These are opportunities.

The challenges derive from two considerations:

- (1) European unification will bring about greater uniformity of integration models among producers and distributors;
- (2) the distributive structure (mass distribution, franchising, chain shops, boutiques, etc.) will tend towards uniformity in the various countries.

It is expected that large companies that distribute all over Europe will increase their presence in Italy. This will result in a profound transformation of the current organization of production among clothing manufacturers who, currently, are more used to contacts with numerous small retailers. Among other effects, this type of distribution has created a sort of natural barrier against importation given the difficulty which foreign salesmen have in entering into contact with the numerous points of sale.

The most important thing is that the Italian clothing companies must learn to deal with mass distribution. This implies a capacity to offer 'organized sets' matching garments to a single client. This implies changed ordering, delivering and production policies. Companies wishing to increase their share of the German market have much the same problems—mass distribution being very widespread in that country.

It is for this reason that certain large companies have decided to prepare for 1992 by establishing joint ventures with German companies. If Italian companies are to become more competitive in the upper middle band of the market, they need to reduce the price quality ratio: processes have to be modernized and labour costs have to be reduced by transferring certain areas of production to developing countries ('outward processing').

To sum up, 1992 will have some important effects on the clothing sector notwithstanding the high level of integration already reached. Companies foresee a considerable impact at both the productive and distributive levels.

3.5.2. Automobile sector

The Italian automobile sector is interesting in that the impact of the single European market will probably be greater than in partner countries above all in terms of the effect of imports from Japan.

The specialization and coverage rates for Italian industry assume values more similar to the British than to those of France or Germany. While in the United Kingdom, Japanese import penetration is already high (12,8 % of imports come from this country), in Italy it stands at only 1,4 %. Italian demand for cars is still prevalently in the medium-low segment, where, as is well known, the Japanese are very competitive. It is, therefore, reasonable to suppose that Japanese import penetration would be rather strong if Italy were no longer to apply more severe quota restrictions than other Community countries.

As far as company strategies are concerned, the problem is very much under review, but the opinions gathered tend not
to dramatize the situation. The process of unification is seen in a positive light and only the loss of 'negligible market share' is anticipated. At the same time certain risks are anticipated if 'some Community countries do not follow the Community line'.

Debate is particularly lively concerning the minimum local content with respect to automobiles constructed by the Japanese in Europe. In this context the strategy of the Italian companies is based on the conviction that 'it is impossible to achieve a strong position through internal growth only'. It is, therefore, necessary to reach or strengthen agreements with Japanese and American producers.

1992 looks as though it is going to be difficult for the automotive industry. The sector will certainly be subject to considerable competitive pressures in terms both of production and distribution networks.

3.5.3. Chemicals sector

The Italian chemical companies are not adopting particular policies or strategies in the transition towards 1992. The formation of the European internal market has become only a part of the present scenario, characterized by the current trends in internationalization, rationalization of production, reduction of the quota for primary chemicals, growth of research activities in the areas of science and technology, and consolidation of leadership positions in certain sectors which were acquired in recent years through joint ventures or acquisition operations.

Perhaps the most important result of these strategies which respond to the need to operate in an already considerably integrated world market, is the merging of assets of Enichem (a public chemical firm) and a majority share of assets of Montedison (a private chemical firm).

In order to understand the importance of these transformations, it is necessary to underline several structural characteristics that distinguish the Italian chemicals sector when compared with principal competitors on the European stage:

(i) for 1975-86 the growth rate (13 % annually on average) has been superior to that registered in France, Germany and the UK (9-10 %);

- (ii) the Italian chemicals industry is highly polarized: among the 300 largest world producers, only Montedison, Enichem and Snia-BPD rank on the list;
- (iii) the sector's internationalization activities are extremely limited and oriented towards less-developed countries. Nevertheless, Italian chemicals firms are more dynamic in the participation of accords and joint ventures;
- (iv) the Italian chemicals industry is still concentrated in lower value-added products;
- (v) the consequences of these characteristics are worrying: Italy is the only industrialized country to show a trade deficit in the chemicals sector.

After 1983, rationalization and redistribution of production processes began among the private chemicals holdings of Montedison and the public holdings of Enichem. In early 1989 Enimont became operative, having been born from the merger between Enichem and most of Montedison's holdings. Nevertheless, several of Montedison's holdings have been excluded from the union, including Montefluos (world's second largest producer of fluorine), Himont (a leader in the field of polypropylene), Erbamont (health products), and assets in the areas of composite materials and ceramics.

Enimont now accounts for one third of Italian chemicals production and ranks among the world's 10 largest firms. Enimont must naturally assume a position of leadership or co-leadership in sectors such as the production of ethylene, phenol, paraffin, polyethylene, PVC (with ICI), and acrylic fibres.

The creation of Enimont represents a large step forward in the process of rationalizing the Italian chemicals sector—the results of which can only be assessed in the near future. After the privatization of Montedison, the exchange of plants between the above and Enichem, and the entry of SNIA into Fiat's holdings, the Italian chemicals industry has radically changed its ownership and organization profile, making it more likely to adapt to the demands of global competition.

The same cannot be said for the highly specialized small and medium-sized firms which are not very active in scientific and technological research. These smaller firms are also highly concentrated on the national market so that the ratio of exports over total sales is less than 25 %, equal to just half the figure for France, Germany and the UK.

Bibliography

Baldwin, R., and Krugman, P. R. (1988), Persistent trade effects of large exchange-rate shocks, mimeo.

Battaggion, R. M. (1989), La ricerca scientifica per lo sviluppo industriale. R&S e Brevetti, mimeo.

Bianchi, P.; Gualtieri, G.; Pancaldi, A.; Sasselli, M. (1989), *The determinants of mergers and acquisitions: Evidence from Italy*, mimeo.

Buigues, P. and Ilzkovitz, F. (1988a), 'The sectoral impact of the international market', EEC, Document II/335/88.

Buigues, P. and Ilzkovitz, F. (1988b), 'Les enjeux du marché intérieur pour l'industrie belge', EEC, Document II/420/88.

Cecchini, P. (1988), The European challenge: 1992—The benefits of a single market, Wilwood House, London.

CER (1988), 'L'attivita innovativa in Italia: i brevetti nell'industria', Report No 6.

CNEL (1989), 'Italia multinazionale. Gli investimenti esteri in Italia e dell'Italia verso i paesi esteri', Rapporto R&P al CNEL, Il Sole 24 Ore, Milan.

Commission of the European Communities (1988), 'The economics of 1992', *European Economy* No 35, March.

Dornbusch, R. (1987), 'Exchange rate and prices', American Economic Review, June 1977, pp. 93-106.

Ernst & Whinney, Fortune (1989), 'Business response to the 1992 European initiative'.

Froot, A. K. and Klemperer, P. A. (1988), *Exchange-rate* pass-through when market share matters, mimeo, January.

ICE (1989), ICE 1988 Rapporto sul Commercio estero.

KPMG Peat Marwick (1989), Obiettivo Europa. Rapporto italiano.

Krugman, P. R. (1986), 'Pricing the market when the exchange rate changes', NBER, Working Paper No 1926, May.

Malaman, R. (1989), 'Il ruolo strategico delle importazioni chimiche', in Gola, C. and Saraceno, P. (eds) *L'import come fattore strategico*, IRS research commissioned by ICE (Italian Institute for External Trade).

Marchionatti, R. (1988), 'Cambiamento tecnologico e processo di diffusione nel settore cotoniero', in *Industria Cotoniera*, No 11/12, 1988.

Nerb, G. (1988), 'The completion of the internal market: a survey of European industry's perception of the likely effects', *Research on the cost of non-Europe*, Volume 3, Documents series, EC.

Nizzoli, A. (1989), 'Il ruolo strategico delle esportazioni nel settore automobilistico', in Gola, C. and Saraceno, P. (eds) *L'import come fattore strategico*, IRS research commissioned by ICE (Italian Institute for External Trade).

OECD (1985), Trade in high-technology products. An initial contribution to the statistical analysis of trade patterns in high-technology products, Paris.

Perasso, G. (1989) 'L'import italiano negli anni '80: un quadro di riferimento', in Gola, C. and Saraceno, P. (eds), *L'importazione come fattore strategico*, ICE, Rome.

Pratten, C. (1988), 'A survey of the economies of scale', *Research on the cost of non-Europe*, Volume 2, Documents series, EC.

Sassatelli, M. and Pancaldi, A. (1989), 'Le acquisizioni in Italia (1983-1988): trends e prospettive', in *Acquisizioni, fusioni, concorrenza*, No 1, Nomisma, Bologna, June.

The Netherlands

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Contents

Intro	duction	283
1.	Basic results	283
1.1.	First result	283
1.2.	Second result	283
1.3.	Third result	283
2.	Industries in which Dutch firms' performance is relatively strong	283
3.	Vulnerable industries	287
3.1.	Sheltered industries	288
3.2.	Industries already exposed to trade	288
4.	Extra-EC trade and production specialization	288
5.	Dynamic adjustment and direct investment	289
Conc	lusion	207
COIR	1051011	231
Bibli	ogranhy	299
LIUII	-Prehad	L))

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List of tables

1.	40 sensitive industries — importance for The Netherlands	284
2.	Importance of sensitive industries and the level of non-tariff barriers	284
3.	Number and importance of Dutch manufacturing industries in which Dutch firms are relatively strong, average performers or vulnerable	284
4.	Industries among the 40 likely to be most affected by the single market in which Dutch firms are relatively strong, average performers or vulnerable	285
5.	Price competitiveness of Dutch firms in the 40 industries likely to be most affected by the single market	286
6.	Growth of demand in industries likely to be most affected by the single market	286
7.	Comparison of the static and dynamic competitiveness indicators	287
8.	Extra-EC trade, production specialization and general competitiveness indicators	290
9.	Dynamic trade performance indicators	291

List of graphs

1.	Synthetic scheme for competitive positions	292
2.	Outward and inward direct investment as a percentage of Dutch (gross) fixed capital formation — Manufacturing	292
3.	Direct investment (stock) from The Netherlands in foreign countries, by country	293
4.	Direct investment (stock) from The Netherlands in foreign countries, by industry	293
5.	Direct investment (stock) from foreign countries in The Netherlands, by country	294
6.	Direct investment (stock) from foreign countries in The Netherlands, by industry	294
7.	Trade performance with multinational companies	295
8.	Trade performance with multinational companies in The Netherlands (1987)	297

Introduction

The objective of the present study is to contribute to a better understanding of the competitive position of Dutch manufacturing industries before the coming of the single European market. Recent studies and business surveys on this subject are rather optimistic. They show, for instance, that Dutch industries are on average less protected by nontariff barriers to trade. This puts them in a good position to gain from European integration. Also macroeconomic simulations of the impact of the 1992 programme show extra gains for manufacturing in The Netherlands (see CPB 1989). The merit of these macro-simulations is that they take into account the different feedback effects and interactions with other sectors of the Dutch economy. The drawback, however, is that they use meso-economic sectors and thus provide little insight into the adjustments at the sectoral level that are likely to occur because of further European integration. The present study focuses on these sectoral adjustments.

The paper first examines those industries most likely to be affected by the measures proposed in the White Paper on completing the internal market. Sensitive industries were identified according to several criteria, including more importantly, the level of non-tariff barriers and the degree of price dispersion. The competitive position of The Netherlands in these industries is assessed by examining the international trade performance of The Netherlands in relation to criteria such as the price competitiveness and European growth prospects of the sensitive industries. The final section of the paper extends the analysis by analysing the competitive structure of Dutch industries in relation to the operations of Dutch-based and foreign-based multinational corporations. It is shown that in a significant number of industries, mostly involving assembly operations, The Netherlands has developed important multinational corporations which have strengthened their competitiveness by increasingly spreading their activities worldwide. For certain hightechnology and process industries, The Netherlands continues to possess attractive location conditions, explaining the good trade performance and the large inflows of foreign investment in these industries. It is expected that the single market will reinforce these tendencies. For The Netherlands, as for Belgium, the same 40 sectors which were identified at the Community level as being affected by the lifting of nontariff barriers are similarly influenced in this Member State.

1. Basic results

The analysis for The Netherlands, using the proposed methodology, yielded the following three basic results:

1.1. First result

The measures proposed in the White Paper have important implications for Dutch manufacturing industries. The 40 industries likely to be most affected by the proposed measures account for about 47 % of manufacturing value added in The Netherlands, which is close to the Community average of 49 %. In terms of employment 45 % of manufacturing employment is at stake (Table 1). Industries characterized by high non-tariff barriers account for less value added and employment than industries characterized by moderate barriers in the group of sensitive industries (Table 2).

1.2. Second result

Sensitive industries in which Dutch firms perform strongly in terms of intra-EC trade are much smaller in number (8) than those (27) in which Dutch firms are vulnerable. However, the strongly performing industries account for a larger share of manufacturing value added (27 %) and employment (24 %) than the vulnerable industries (17 % and 18 % respectively). Average performers account for a much smaller percentage (2,5 %) of manufacturing employment (Table 3).

1.3. Third result

The most important sensitive industries in which Dutch firms perform strongly belong to the group of high-tech, mostly process or highly automated industries (chemicals, electronic components) characterized by strongly expanding demand in the Community. Among the vulnerable industries, there is a disproportionate number of traditional industries, machinery and assembly industries. Important Dutch companies in the latter group of industries appear to have strengthened their competitive position through investing substantial parts of their activities in other countries (Table 4).

2. Industries in which Dutch firms' performance is relatively strong

The industries in which Dutch firms perform strongly are largely made up of growing industries (such as basic chemicals, electronics) and are industries in which Dutch products enjoy a worldwide reputation (Table 6). Not surprisingly, the strongly performing industries are also very important in terms of employment. Chemicals, telecommunications equipment and electronic appliances are the most important industries among the sensitive industries. They account for more than 19 % of all manufacturing employment. Their

40 sensitive industries - importance for The Netherlands

		Share of v	alue added	Share of employment	1985 Ratio of intra- EC imports to extra EC imports		
	· · · ·	NL	EUR 12		NL	EUR 12	
High-technology public sector procurement		9,04	6,1	8,49	1,0	0,9	
Traditional or regulated public sector procurement		6,04	6,4	3,6	5,0	4,5	
Industries facing competitio from newly industrialized countries	n	4,63	5,6	5,8	1,9	2,2	
Sectors with medium non-ta barriers	riff	27,33	30,8	26,96	2,2	1,9	
	Total sensitive industries	47,04	48,9	44,85	1,9		
	Total industry	100,00 -	100,0	100,00	2,0		

Table 2

Importance of sensitive industries and the level of non-tariff barriers

	Share of value added	Share of employment	1985 Ratio of intra-EC imports to extra-EC imports
High NTB	19,63	17,89	1,4
Moderate NTB	27,33	26,96	2,2

Table 3

Number and importance of Dutch manufacturing industries in which Dutch firms are relatively strong, average performers or vulnerable

	Number of industries	% of manufacturing value added	% of manufacturing employment
Vulnerable	27	17,32	18,4
Average performers	3	2,27	2,5
Relatively strong	8	27,45	24,0
Total	381	47,04	44,90

NACE 362 and 425 are excluded from the analysis since no activity for these industries has been recorded. contribution to value added is higher than their contribution to employment, reflecting the capital-intensive character of these activities (compare shares of employment and shares of value added in Table 3).

Many of the products of the strongly performing industries are already traded within the EC but this trade is hindered by differing national standards (basic chemicals) and publicprocurement policies (telecommunications). Shipbuilding, drinks, chocolate and sugar confectionery belong to the group of industries where similar non-tariff barriers apply but where there is considerable scope for increasing intra-Community trade.

With regard to the consumer goods industries (electronic appliances, carpets) in which Dutch firms also perform strongly, it should be noted that these industries will be less affected by the dismantling of non-tariff barriers and will tend to be affected by changes in distribution rather than production.

Average performers include computers, lighting and medical and surgical equipment.

Table 5 shows that it is rare for strong or average trade performers to be associated with poor price competitiveness. This is the case in only one industry—carpets, including linoleum—as the most important product for The Netherlands. Exports of these products tend to be at the luxury

Industries among the 40 likely to be most affected by the single market in which Dutch firms are relatively strong, average performers or vulnerable

NAC	E Vulnerable	X/M	▲ X/M	SI	NACE	Average	X/M	▲ X/M	SI	NACI code	E Relatively strong	X/M	▲ X/M	SI
247	Glass	68	132	73	330	Computers & office automation	100	114	101	251	Basic ind. chemicals	205	111	182
248	Ceramics	69	84	44	347	Lighting	98	120	163	256	Other chemical products for	121	101	124
257	Pharmaceuticals	00	83	/6	3/3	Medical & surgical equipment	94	126	81	244	industrial & agricultural purposes	131	101	124
315	Bollermaking	35	105	50						344	Telecommunications equipment	128	95	105
321	Agricultural machinery	20	/1	55						345	Electronic appliances, radio, 1 v	270	110	163
322	Machine tools	5/	89	51						301	Shipbuilding	270	48	103
323	Textile machinery	19	121	44						421	Minerel water and soft drinks	125	107	170
324	Food processing and chemical plant	11	89	/8						428	Mineral water and solt drinks	123	99	125
325	Mining, metall. and related plant	00	82	22						438	Carpets	123	90	135
320	Mechanical transmissions	44	110	33										
327	wood, paper and leather machinery	4/	129	40										
341	Floatering algorithm of the second se	10	120	70										
342	Demostic electrical application	00	110	12										
340	Domestic electrical appliances	44	09	41										
331	Motor vehicles	44	92	20										
304	Aerospace equipment	50	121	23										
417	Pasta Demine and malaine	30	131	20										
421	Brewing and maring	14	94	20										
431	Cotton and	42	04	20										
432	Cotton goods	13	126	20										
451	Clathing	42	120	20										
455	Clothing Household textiles	55	110	74										
401	Public conde	03	134	10										
401	Rubber goods	79	93	12										
491	Dhata ann his ann ann ann	21	92	42										
493	Photographic processing	21	122	29										
494	roys, games and sports goods	84	133	69										

Notes: X/M ratio = average intra-EC export/import ratio in 1985, 1986 and 1987. ▲ X/M ratio = change in intra-EC export/import ratio between 1980-82 and 1985-87 (1980-82 = 100). SI = Balassa specialization index in 1985-87. Average X/M ratio in manufacturing = 112; average ▲ X/M ratio in manufacturing = 103.

end of the market where price is less important. By contrast, in industries such as telecommunications equipment, electronic appliances, shipbuilding and parts of the food industry in which The Netherlands exports relatively more than its European partners (see the specialization indices of the industries in Table 4) the price competitiveness of Dutch firms is very good.

In the majority of the industries in which Dutch firms perform strongly, The Netherlands is likely to gain from European integration because Dutch firms in these industries have certain advantages which should stand them in good stead in meeting the increased competition from other European producers. These advantages are:

- (i) a high degree of export specialization;
- (ii) no substantial deterioration, but, in many cases, a strong improvement of trade balances with the rest of the EC in recent years, except for shipbuilding (see Table 7);

- (iii) prices lower than the EC average (except carpets);
- (iv) in most of the industries demand is expanding strongly in Europe.

The chocolate, shipbuilding and carpets industries show weak growth prospects in Europe (see Table 6).

Table 4 confronts the average trade performance over the years 1985-87 with the change in performance that occurred after 1980-82. The table shows how trade surpluses of most of the strong performers continued to improve over the more recent period. This suggests certain tendencies in trade performance which do not seem directly reversible.

Similarly one should observe the recent improvements in trade balances ($\Delta X/M$) on the average performing industries. Combined with the good price competitiveness and,

Price competitiveness of Dutch firms in the 40 industries most likely to be affected by the single market

Trade performance	NACE code	Sector	DP1	NACE code	Sector	DP ¹	NACE code	Sector	DP
Vulnerable	322	Machine tools	87	247	Glass	95	257	Pharmaceuticals	136
	323	Textiles machinery	87	248	Ceramics	95	315	Boilermaking	123
	341	Insulated wire and cables	94	324	Food processing and chemical plant	104	321	Agricultural machinery	108
	346	Domestic electrical appliances	89	325	Mining, metallurg. and related plant	95	481	Rubber goods	118
	417	Pasta	84	327	Wood, paper and leather machinery	103			
	427	Brewing and malting	75	351	Motor vehicles	95			
	431	Woollen goods	89	364	Aerospace equipment	96			
	432	Cotton goods	89	455	Household textiles	95			
	451	Footwear	89	491	Jewellery	104			
	453	Clothing	86						
	493	Photographic processing	94						
	494	Toys, games and sports goods	78						
Average	330	Computers and office automation	94	372	Medical and surgical equipment	97			
	347	Lighting	91						
	344	Telecommunications equipment	94				438	Carpets	107
	345	Electronic appliances, radio, TV	86						
Relatively strong	361	Shipbuilding	92						
	421	Chocolate and sugar confectionery	91						
	428	Mineral water and soft drinks	84						

¹ DP = difference between Dutch prices and the EC average (EC average = 100).

Table 6

Growth of demand in industries likely to be most affected by the single market

		Weak		Average		Strong			
Trade performance	NACE code	Sector	NACE code	Sector	NACE	Sector			
Vulnerable	248 326 481 491	Ceramics Mechanical transmissions Rubber products Jewellery	247 315 321 324 325 342 346 427 431 432 451 453 494	Glass, glassware Boilermaking Agricultural machinery Food processing & chemical plant Mining, metallur. & related plant Electrical plant & equipment Domestic electrical appliances Brewing & malting Woollen goods Cotton goods Footwear Clothing Toys & sports goods	257 322 323 327 341 351 364 417 493	Pharmaceuticals Machine tools Textile machinery Wood, paper & leather machinery Insulated wires & cables Motor vehicles Aerospace equipment Pasta Photographic processing			
Average			347	Lighting	330 372	Computers and office automation Medico-surgical equipment			
Relatively strong	361 421 438	Shipbuilding Chocolate, sugar confectionery Carpets	251 256	Basic industrial chemicals Other chemicals	344 345 428	Telecommunications Radio, TV, electronic appliances Mineral water, soft drinks			

Comparison of the static and dynamic competitiveness indicators

	NACE	E Vulnerable	X/M	▲ X/M	NACE	Average performers	X/M	▲ X/M	NACE code	Relatively strong	X/M	▲ X/N
$ \frac{X}{M} $ intra < -5%	248 257 321 322 324 325 346 431 432 491 493	Ceramics Pharmaceuticals Agricultural machinery Machine tools Food processing and chemical plant Mining, metallurgical and related plant Domestic electrical appliances Woolen goods Cotton goods Jewellery Photographic processing	69 66 56 57 77 65 44 42 73 78 21	-13 -13 -22 7 -10 -14 -6 -8 -9 -7 -17					344 361 438	Telecommunications equipment Shipbuilding Carpets	128 270 123	- 7 - 298 - 6
Dynamic $-5\% < \qquad \stackrel{\bullet}{\longrightarrow} \frac{X}{M} \text{ intra } < +5\%$	315 327 351 364 481	Boilermaking Wood, paper and leather machinery Motor vehicles Aerospace equipment Rubber goods	36 47 44 51 69	2 0 -4 -3 -5					256 428	Other chemical products for industrial and agri- cultural purposes Mineral water and soft drinks	131 125	2 - 1
$A \frac{X}{M} \text{ intra } > -5\%$	247 323 326 341 342 417 427 451 453 455 494	Glass Textile machinery Mechanical transmissions Insulated wires and cables Electrical plant and machinery Pasta Brewing and malting Footwear Clothing Household textiles Toys, games and sports goods	68 79 44 78 65 50 74 42 55 63 84	16 14 6 17 9 12 7 9 8 16 21	330 347 372	Computers and office automation Lighting Medical and surgical equipment	100 98 94	12 17 19	251 345 421	Basic indust. chemicals Electronic appliances, radio, TV Chocolate and sugar confectionery	205 115 274	20 18 17

X/M ratio = average intra-EC export/import ratio of 1985-87. X/M ratio = average intra-EC export/import ratio of 1985-87 minus the average of the years 1980-82.

for computers, the good growth prospects, there is also sufficient scope for average performers to improve their performance.

Close inspection of Table 4 also reveals that the important strongly performing industries are the industries that are dominated by the large Dutch multinational companies (Akzo, Shell and DSM in chemicals, Philips in the electrotechnical industry). Except for shipbuilding the important strongly performing industries belong to the group of process or highly automated industries. There are also the industries in which The Netherlands has built up strong comparative advantages. In view of the importance of these phenomena, coupled with the role of Dutch multinationals, a more indepth discussion is presented further.

3. Vulnerable industries

Among the industries in which Dutch firms are vulnerable, are:

- (a) sheltered industries in which the degree of import penetration from other EC countries is low or minimal because non-tariff barriers shelter firms from foreign competition (pharmaceuticals, boilermaking, electric plant and machinery);
- (b) many industries already exposed to competition from within the EC (machine tools, domestic electrical appliances, clothing, footwear), but for which The Netherlands does not reveal a clear comparative advantage.

3.1. Sheltered industries

Industries which have hitherto been protected are obviously more vulnerable when non-tariff barriers are lifted. The opening up of public-sector procurement will hit industries like boilermaking and electrical plant and machinery.

In these industries, in which there is currently excess capacity and the number of European manufacturers is too high, the coming of the single market is likely to precipitate a major shake-out in which the least competitive firms will be eliminated or taken over. The Dutch firms in these industries seem very vulnerable, notwithstanding the fact that recently the intra-EC trade balance of the electric plant and machinery industry has shown some improvement (see Table 7).

The case of the Dutch pharmaceuticals industry (2,7% of manufacturing value added) deserves special attention. This is an industry for which the intra-EC trade balance is negative (export/import ratio of 70%) and whose trade performance has been deteriorating in recent years. Its price competitiveness is far below the EC average. We are likely to see prices converge to levels below those currently prevailing. In this case the Dutch pharmaceuticals industry is ill-placed to cope with the resulting increased competition and lower prices. However, it is clear that in pharmaceuticals the effect of the opening up of markets will only be felt gradually because liberalization will have major implications for social security budgets and will involve difficult harmonization of licensing and marketing regulations. Pharmaceuticals is also a growing industry in the European Community.

Boilermaking belongs to the threatened industries in The Netherlands. This industry shows an intra-EC trade deficit of about 60 % over the most recent period (1985-87) and a recorded average price differential with the rest of the EC of more than 20 % in 1985.

3.2. Industries already exposed to trade

Many of the industries already exposed to trade show a low specialization index which would suggest that The Netherlands does not possess a comparative advantage for these industries.

Among the industries relatively exposed to trade and competition in which Dutch firms are vulnerable are a disproportionate number of traditional industries in which the dismantling of internal frontiers will intensify intra-EC competition and speed up the specialization already under way. This could lead to shifts in the geographical distribution of these industries in the EC. In some of them the Dutch presence is already very limited (as in white goods and shoes) as a result of specialization that has already taken place in the European market. In the long run these businesses may face a further decline unless the technological performance of Dutch firms improves. Not all of the industries can be characterized as traditional from a technological point of view. In some of the industries, technology is changing quickly. These are also the vulnerable industries that are more important for the Dutch economy, such as, in decreasing importance, motor vehicles, food processing and chemical plant, aerospace equipment and clothing.

In contrast to the strongly performing capital intensive process-industries (chemicals, food, electronic components), the vulnerable industries are mostly machinery and assembly industries. For the important vulnerable industries, labour costs make up three-quarters, if not all, of value added. Apparently, a combination of gains in labour productivity, other technological improvements and a reduction in profit rates have prevented these industries from a more rapid decline. In so far that these activities utilize unsophisticated and standardized technology and are footloose from the locational point of view, their vulnerability may increase after 1992 with possible relocation to lower wage countries.

As Table 7 shows, many vulnerable industries have undergone strong declines in performance in the recent period. However, some vulnerable industries have improved their performance including glass, textiles and textile machinery, insulated wire and cables and toys and sports goods.

It may also be observed from Table 5 that high prices do not seem to be a major factor in explaining poor trade performance for the vulnerable industries. In only two of the trade-exposed vulnerable industries (agricultural machinery and rubber goods) are prices higher in The Netherlands than the average EC price. This suggests that most industries of this category are globally competitive industries or industries where Dutch firms (have to) follow prices set by foreign leading firms, and for which The Netherlands shows no clear comparative advantage.

4. Extra-EC trade and production specialization

In view of the 1992 programme, the foregoing analysis focused on intra-EC trade performance indicators. However, a broader assessment of a country's competitive position should also include trade with non-EC countries. Similarly little attention was given to domestic consumption effects in assessing industry performance. In addition to extra-EC trade performance, these consumption effects are taken into account by a production specialization indicator. This indicator is calculated in a similar manner to the Balassa export specialization index, but with production instead of export as relevant variable. In order to come to a more general assessment of the competitive position of The Netherlands in the sensitive industries, Table 8 presents, in addition to the intra-EC export/import ratio, the extra-EC export/import ratio and intra-EC trade and production specialization indexes within the EC.

Table 8 shows that there are relatively more industries with a positive extra-EC trade balance than with a positive intra-EC trade balance. In three cases, textile machinery (NACE 323), food processing and chemical plant (NACE 324) and brewing and malting (NACE 427), this positive extra-EC trade balance is so important that it makes the world trade balance of The Netherlands positive for these industries. In addition to these extra-EC trade effects, the impact of domestic consumption effects is also reflected in the production specialization index. Two industries, insulated wire and cables (NACE 341) and photographic processing (NACE 493) show, in spite of their weak export specialization, a strong production specialization within the EC.

Next, in order to come to a more general assessment of the competitive position of the different industries each different indicator used in Table 8 has been rescaled and summed together. The rescaling is done as follows:

Score	= -	1 if		X/M	intra, extra	<	90
Score	= (0 if	$90 \leq$	X/M	intra, extra	\leq	110
Score	= +	1 if		\mathbf{X}/\mathbf{M}	intra, extra	>	110
Score	= -	1 if		IS	trade, prod	<	90
Score	= 1	0 if	$90 \leq$	IS	trade, prod	\leq	110
Score	= +	1 if		IS	trade, prod	>	110

The overall score (the sum of all individual scores) for each industry is graphically depicted in Graph 1. The height of each bar or section of bar measures the importance of the industry in terms of its employment share in total Dutch manufacturing. Graph 1 shows no drastic changes from the intra-EC basic findings. However, for some electronics industries (NACE 344 and 345), the less favourable extra-EC trade balance reduces their overall score. For the beer industry (NACE 427) and for some machinery industries, NACE 323 and 324 especially, the large positive extra-EC trade balance substantially improves their overall competitive position.

Changes in export specialization indices over the period 1980-87 as the dynamic historic counterparts of the static indicators (production specialization excluded) are shown in Table 9.

Similar to the static indicators, an overall assessment of the changes in the competitive position (\blacktriangle) is made on the basis of the following rescaling:

Score =	-1 if	▲ X/M	intra, extra $< -5\%$
Score =	0 if	$-5\% \leq X/M$	intra, extra $\leq +5\%$
Score =	+1 if	▲ X/M	intra, extra > $+5\%$
Score =	-1 if	▲ IS	trade < 0
Score =	0 if	▲ IS	trade = 0
Score =	+1 if	▲ IS	trade > 0

In contrast to the historic intra-EC trade indicators, the historic extra-EC trade indicators show a less bright picture for The Netherlands. There have been few sensitive industries with marked improvements in world trade performance in recent years. Glass, medical and surgical equipment, brewing and malting are the sole industries with a maximum score. Other good performers with a score equal to 2 are industrial chemicals (NACE 256), computers (NACE 330), footwear (NACE 451), clothing (NACE 453), household textiles (NACE 455) and toys and sports goods (NACE 494).

These observations suggest that world markets have become increasingly competitive with very strong non-EC-based competitors. They clearly illustrate the need for the 1992 programme, which directly aims at bringing substantial improvements in the efficiency and competitiveness of ECbased companies, especially in the group of sensitive industries that have been analysed here.

5. Dynamic adjustment and direct investment

The Dutch economy is not only a very open economy in terms of trade, but also in terms of direct investment, the multinationalization of its companies. In spite of its small size, The Netherlands is the eighth largest international trader in the world, and, more remarkably, The Netherlands is, after the USA and the United Kingdom, the third largest direct investor in the world.

The growth of direct investment by Dutch companies in the 1970s and 1980s has been impressive. Outward direct investment flows, including reinvested earnings, were as high as 2,3 % of national income and represented on average nearly 44 % of fixed capital formation over the period 1974-84. In the same period inward direct investment in The Netherlands represented about 1,2 % of national income. From 1984 onwards, outward and inward flows have become again more volatile with a sharp increase in inward direct investment in the last two years (covered in Graph 2).

Extra-EC trade, production specialization and general competitiveness indicators

NACE	Sector	X/M world 1985-87	X/M 198	l extra 35-87	X/M 198	l intra 35-87	Trac 198	ie SI 5-87	Produc 198	ction SI 5-87	Overall score	Share of sectors in
		(70)	(%)	Score	(%)	Score	Value	Score	Value	Score		employment
247	Glass	73	107	0	68	-1	73	- 1	52	- 1	_ 3	0.7
241	Caramics	64	107	- 1	60	- 1	13	- 1	22	- 1	_1	0,7
240	Pasic industrial chemicals	171	116	-1	205	- 1	100	- 1	270	- 1	-4	0,5
256	Other chemical products for induct & agri	1/1	110	1	205	1	102	1	219	1	4	8,0
230	other chemical products for moust. & agri	. 124	120	1	121	1	124	1	1	1	4	1
257	Pharmaceuticals	102	225	1	151	- 1	76	1	00	1	4	17
215	Poilermaking	75	233	1	26	- 1	/0	-1	20	- 1	- 2	1,7
221	A grigultural machinery	13	204	1	30 56	-1	50	-1	28	-1	-2	0,5
222	Agricultural machinery	63	304	1	50	-1	53	-1	50	- 1	- 2	0,6
322	Machine tools	129	74	-1	57	-1	51	-1	43	-1	-4	0,6
323	Textile machinery	128	230	1	79	-1	44	-1	93	0	-1	0,4
324	Food processing and chemical plant	115	263	1	11	-1	/8	-1	97	0	- 1	1,8
325	Mining, metallurgical and related plant	81	126	1	65	-1	69	-1	47	- 1	-2	1,2
326	Mechanical transmissions	44	44	- 1	44	- 1	33	-1	22	- 1	-4	0,2
327	Wood, paper and leather machinery	52	65	- 1	47	-1	46	-1	2	0	- 3	2
330	Computers and office automation	70	40	- 1	100	0	101	0	79	- 1	-2	0,8
341	Insulated wires and cables	79	83	- 1	78	- 1	87	-1	140	1	-2	0,5
342	Electrical plant and machinery	70	80	- 1	65	- 1	72	-1	26	-1	-4	1,1
344	Telecommunications equipment	117	106	0	128	1	117	1	215	1	3	7,3
345	Electronic appliances, radio, TV	81	46	-1	115	1	105	0	241	1	1	3,8
346	Domestic electrical appliances	67	162	1	44	-1	41	-1	29	-1	-2	0,3
347	Lighting	149	339	1	98	0	163	1	381	1	3	1,3
351	Motor vehicles	42	37	-1	44	-1	20	1	32	-1	-4	1,9
361	Shipbuilding	200	175	1	270	1	163	1	365	1	4	3,2
364	Aerospace equipment	75	99	0	51	-1	23	-1	55	-1	- 3	1,4
372	Medical and surgical equipment	79	62	-1	94	0	81	-1	81	-1	- 3	0,4
417	Pasta	53	66	-1	50	-1	28	-1	15	-1	-4	0,0
421	Chocolate and sugar confectionery	296	362	1	274	1	226	1	160	1	4	1,0
427	Brewing and malting	317	2 622	1	74	-1	95	0	108	0	0	1,1
428	Mineral water and soft drinks	184	7 100	1	125	1	170	1	90	0	3	0,3
431	Woollen goods	40	33	-1	42	-1	28	- 1	22	- 1	-4	0,3
432	Cotton goods	89	135	1	73	-1	57	- 1	29	-1	-2	0,5
438	Carpets	156	370	1	123	1	135	1	132	1	4	0,4
451	Footwear	30	7	- 1	42	-1	28	-1	21	-1	-4	0,5
453	Clothing	39	12	- 1	55	-1	74	-1	27	-1	-4	1,3
455	Household textiles	48	24	-1	63	-1	78	-1	85	-1	-4	0,1
481	Rubber goods	72	80	-1	69	-1	57	-1	45	-1	-4	0,9
491	Jewellery	87	97	0	78	- 1	42	- 1	11	- 1	- 3	0,1
493	Photographic processing	24	39	-1	21	-1	29	- 1	154	1	-2	0,2
494	Toys, games and sports goods	54	21	- 1	84	- 1	69	-1	16	-1	-4	0,1

NACE 256 is included in 251.
 NACE 327 is included in 323.

Dynamic trade performance indicators

NACE	Sector	▲ X/M world	▲ X/M	M intra	▲ X/M	A extra	▲ Tr	ade SI	Overall	Share of
code		(%) -	(%)	Score	(%)	Score	Value	Score	- score	sectors in industrial employment
247	Glass	16	16	1	7	1	7	1	3	0,7
248	Ceramics	- 3	-13	-1	19	1	- 5	-1	- 1	0,5
251	Basic industrial chemicals	- 36	20	1	-178	-1	-10	-1	-1	8,0
256	Other chemical products for indust.									
	& agri, purposes	8	2	0	19	1	5	1	2	1
257	Pharmaceuticals	-4	-13	-1	47	1	-11	-1	- 1	1,7
315	Boilermaking	- 44	2	0	-1 045	-1	- 5	-1	-2	0,5
321	Agricultural machinery	-20	-22	-1	33	1	-11	-1	-1	0,6
322	Machine tools	- 10	-7	-1	-16	-1	5	1	- 1	0,6
323	Textile machinery	14	14	1	-20	-1	4	1	1	0,4
324	Food processing and chemical plant	-10	-10	-1	-7	-1	-9	-1	- 3	1,0
325	Mining, metallurgical and related plant	- 25	-14	-1	- 51	-1	1	1	- 1	1,2
326	Mechanical transmissions	1	6	1	-12	-1	-2	-1	- 1	0,2
327	Wood, paper and leather machinery	1	0	0	5	0	7	1	1	2
330	Computers and office automation	2	12	1	-4	0	29	1	2	0,8
341	Insulated wires and cables	-45	17	1	- 568	-1	- 3	-1	- 1	0,5
342	Electrical plant and machinery	1	9	1	- 26	-1	3	1	1	1,1
344	Telecommunications equipment	-16	-7	-1	- 26	-1	-12	-1	- 3	7,3
345	Electronic appliances, radio, TV	-13	18	1	- 44	- 1	-20	-1	-1	3,8
346	Domestic electrical appliances	-12	-8	-1	- 69	-1	- 7	-1	- 3	0,3
347	Lighting	6	17	1	- 42	- 1	12	1	1	1,3
351	Motor vehicles	-6	-4	0	-11	-1	0	0	-1	1,9
361	Shipbuilding	- 171	- 298	- 1	-110	- 1	-24	-1	- 3	3,2
364	Aerospace equipment	-12	- 3	0	-13	-1	-6	-1	-2	1,4
372	Medical and surgical equipment	21	19	1	22	1	11	1	3	0,4
417	Pasta	3	12	1	- 83	- 1	2	1	1	0,0
421	Chocolate and sugar confectionery	27	17	1	60	1	-21	- 1	1	1,0
427	Brewing and malting	1	7	1	172	1	14	1	3	1,1
428	Mineral water and soft drinks	-13	-1	0	1 702	1	- 78	-1	0	0,3
431	Woollen goods	- 74	- 8	-1	- 383	-1	-12	- 1	- 3	0,3
432	Cotton goods	-15	-9	- 1	- 46	-1	-6	-1	- 3	0,5
438	Carpets	18	-6	- 1	194	1	3	1	1	0,4
451	Footwear	5	9	1	1	0	5	1	2	0,5
453	Clothing	5	8	1	0	0	9	1	2	1,3
455	Household textiles	9	16	1	0	0	17	1	2	0,1
481	Rubber goods	- 2	- 5	0	7	1	- 1	- 1	0	0,9
491	Jewellery	- 2	- 7	- 1	1	0	-15	- 1	- 2	0,1
493	Photographic processing	-13	-17	- 1	11	1	- 30	- 1	- 1	0,2
494	Toys, games and sports goods	9	21	1	1	0	6	1	2	0,1
1 NAC	TE 256 is included in 251									

NACE 256 is included in 251.
 NACE 327 is included in 323.





Dutch direct investments abroad are strongly concentrated in industrialized countries, with the USA and the UK as main recipient countries. Over the period 1973-84, the period of Eurosclerosis, Dutch investments were increasingly directed towards the USA (Graph 3). The share of the USA had increased from 14 % in 1973 to 31 % in 1984.

In spite of the high number of multinational companies based in The Netherlands, the four largest Dutch multinationals (Akzo, Philips, Shell and Unilever) play a very dominant role in the total Dutch direct investment position abroad. They account for about two-thirds of the direct investment position abroad and in 1986 they accounted (with DSM included) for 70 % of all R&D expenditure in The Netherlands.

The size of these direct investments implies that for The Netherlands there is more at stake than the direct effects from the 1992 programme on domestic activities. The indirect effects from improved performance of Dutch companies in a wider single European market will be very substantial and should therefore be taken into account in assessing the effects of the single market. Recent studies for The Netherlands have shown that Dutch direct investment displays a countercyclical pattern with respect to domestic investment. Equally interesting, based on an econometric





293





study, Belderbos (1988) found the ratio of Dutch domestic investment to Dutch foreign investment to relate directly to differences in profit performance and production growth between The Netherlands and the different foreign countries in which Dutch companies have subsidiaries. This means that investment strategies of Dutch multinational companies incorporate strong locational preferences, which are likely to become more important after 1992.

Similar to Dutch direct investments abroad, direct investments in The Netherlands are concentrated in the chemical industry and to a lesser extent in the metals and electrotechnical industries (compare Graphs 4 and 6). The majority of these investments originate from EC countries and the USA (Graph 5). There is a recent tendency for EC investment to become more important.

In order to analyse the direct investment structure, we may start from the premise that foreign companies are able to invest in The Netherlands, because they are more or equally competitive than Dutch firms. Similarly, Dutch firms invest abroad because their technological competitiveness is not strictly related to location conditions in The Netherlands. In line with modern theories of the multinational enterprise, technological advantages and successful product differentiation may indeed yield important competitive advantages to firms in international markets, which enable them to invest abroad. If for some activities The Netherlands is not an attractive location, this will not encourage new foreign investors. In addition, it will induce competitive Dutch firms in these industries to locate more of their activities in foreign countries. These premises provide a useful starting point to analyse the structure of the Dutch industry in relation to location conditions in The Netherlands.

Based on the previous reasoning, two indices, similarly scaled between -1 and +1 for each industrial sector, are introduced:

- (i) Revealed comparative advantage (RCA): (X-M) / (X+M). Net exports from The Netherlands relative to the sum of imports and exports from The Netherlands. The index is monotonically related to the import/export ratio used in previous sections. The index has been repeatedly used in the literature (see for example Balassa (1988)). The index relates to relative (among countries and industries) location attractiveness of The Netherlands for the industrial sector concerned.
- (ii) Multinational technological advantage (MTA): (D-F) / (D+F) for each industrial sector. The index intends to



measure the importance of technological competitive advantages of Dutch multinational companies vis-à-vis those of foreign-based multinationals in the country. The index expresses employment in Dutch-based multinationals (D) minus employment in foreign-based multinationals (F) relative to total employment by these two groups in Dutch manufacturing sectors. Domestic firms with no foreign interests are assumed to possess no important specific technological advantages.¹

From the combination of the two indices in Graph 7, it is possible to derive how competitive (technological) advantages of Dutch companies are based on, or go together with, revealed comparative advantages. It is straightforward to argue that a high RCA index may be the result of hightechnology developments in an industry. However, if The Netherlands is not an attractive location for an industry, then we expect Dutch firms within this industry to relocate most of their activities over time. As a result the Dutch RCA index for this industry will go down and foreign investments by Dutch companies within the industry will increase. One might even speculate about possible circular movements of industries from zone A to D and relate them to life-cycle effects (see Sleuwaegen (1989)). The major industrial sectors of The Netherlands in 1987 are represented in Graph 8. Each manufacturing sector is ordered according to the MTA and RCA indices (the figures between brackets).

Graph 8 shows that the food and beverages industry together with the chemical industry and printing and publishing, all process industries, gave rise to competitive Dutch multinational firms. Location conditions for these industries are relatively attractive in The Netherlands. They account for the positive net exports in the RCA index. The electrotechnical industry is characterized by highly competitive Dutch firms which, however, in the comparative analysis, seem not to find (any longer) the best conditions to expand their activities in The Netherlands. The MTA index is positive and the RCA index is negative for this industrial sector. This also seems to hold for machinery and metal products and for the textiles industries.

Paper and board is a special case. Net exports with the world are negative (RCA negative), but relative to other EC countries the net export ratio is positive. The difference may be explained by the dependence of this sector on raw materials from outside the EC. Building materials (stone, ceramics, etc.) are shown as a sheltered sector in The Netherlands, characterized by a high presence of foreign companies. It may be argued that this is rather natural and explained by the market location orientation of this industrial sector. However, the low RCA index seems to suggest that the position of the industry is threatened with a further harmonization of regulation and public-procurement provisions in the EC.

Graph 8 shows again that The Netherlands reveals strong comparative advantages in process industries, such as chemicals and food processing. These process industries gave rise to important Dutch multinational groups. Also foreignbased multinationals in these industries are strongly attracted by location conditions in The Netherlands.

Without substantial changes in cost conditions or specific technological improvements it may be expected that the observed tendencies in incoming and outgoing foreign investment will continue in the near future, especially with less restricted trade after 1992. It does not seem that a freer movement in labour will be quick and intense enough to strongly alter these tendencies.

According to De Jong (1988), stagnating demand in The Netherlands, a strong Dutch guilder and high labour costs are the major motives why Dutch companies have increasingly invested abroad in the last 20 years. It should be noted here that in recent years there has been a structural recovery through intense wage moderations (see De Nederlandse Bank (1989)). De Jong's view on direct investment motives corresponds to the results of a recent study on location conditions in The Netherlands, which, in addition, included as negative factors: the relatively high income tax, the small domestic market, the relatively expensive price of land (real estate), the relatively low development of telecommunications networks, relatively low investment subsidies and the relatively scarce cooperation opportunities between industry and universities (Belderbos (1988)).

From the positive perspective, there are also many factors that favour The Netherlands as a location site. Among these factors is, first of all, the unique geographical location of The Netherlands, at the estuary of the Rhine, Schelde and Maas, the 'delta-economy'. It was natural therefore to focus on international trade and transportation. Transport by sea was important for the supply of raw materials, while the presence of rivers made it possible to reach a large European hinterland at low cost. The Netherlands specialized in the processing of bulk products, with low value per unit of volume or weight, to semi-finished or finished products. Most of these were then shipped to the European hinterland. Capital intensive process-industries like petroleum, chemicals, iron and steel processing industries, food and kindred products, with primarily

¹ Ideally, licensing operations as an alternative to multinational production should also be included in this index. However, lack of data about these operations does not allow us to do so.



the processing of bulk products, have grown strongly and are still strongly represented in The Netherlands compared with other developed countries. Other favourable location conditions are: the nearby German market, good transport infrastructure, the efficiency of the port of Rotterdam and the airport of Schiphol, the availability of well-trained personnel, the attractive fiscal system for foreign investors and the political stability in recent years.

However, as Belderbos observes, it is likely that the geographical location of The Netherlands will become a less favourable factor in the future. The centre of economic activities is moving more and more to the south of Europe. The emerging economic activities in centres such as Lyons, Marseilles, the north of Italy and the south of Germany, the entry of Spain and Portugal into the EC and the construction of the Channel Tunnel are all factors that contribute to a shifting of economic activities. The position of The Netherlands as the gate to Europe is threatened. The old locational advantages based on water-transportation facilities tend to become less important. For high-tech goods, air and road transport together with efficient telecommunications systems are becoming increasingly important. Serious efforts to improve the necessary infrastructure in these areas will be necessary to reinforce the 'gateway' position of The Netherlands.

Conclusion

This study focused on the competitive position of The Netherlands in the group of manufacturing industries that are expected to be particularly affected by the 1992 programme. The analysis showed, first of all, that the 40 industries likely to be most affected by the creation of the single market are of about the same importance for the Dutch economy as for the Community as a whole. They account for approximately 47 % of manufacturing value added and 45 % of total employment in Dutch manufacturing industries. The implications of the single market are thus substantial for the Dutch industry.

Overall, the competitive position of The Netherlands is fairly good. The strongly performing industries account for a higher proportion of manufacturing value added and employment than the vulnerable industries, though the latter account for more than one sixth of Dutch manufacturing employment. The more important sensitive industries in which The Netherlands is strong belong to the group of high-tech process or strongly automated industries, characterized by strong growth prospects such as chemicals and telecommunications equipment. The Netherlands should emphasize its advantages—its good location in Europe, highquality labour force, and infrastructure—to encourage these groups to increase production units. Industries in which Dutch firms have a comparative advantage should prepare for the wider market and the increased competition by rapidly adjusting capacity. The expansion of the intra-Community trade will undoubtedly benefit these industries. However, it is important to realize here that the analysis applies only to the 40 industries that will be substantially affected by the 1992 programme. Considering all industries, the position of The Netherlands in high-tech growth industries may look less favourable (see for example Koekkoek and Mennes (1985), McKinsey & Company (1988)).

The vulnerable group of industries consists largely of traditional, machinery and assembly industries. These are industries for which The Netherlands does not show a clear comparative advantage. Pharmaceuticals, boilermaking, electrical plant and machinery, and building materials are sheltered industries which might undergo strong restructuring in the transition period to a single market. In industries with poor growth prospects and in which Dutch firms show no clear advantage, both in terms of technological development and costs, further despecialization should be envisaged.

The Netherlands are characterized by important foreign direct investment abroad, which means that for The Netherlands there is more at stake than only the impact of 1992 on purely domestic operations. The prospect of a single market may lead to a stronger expansion of Dutch companies abroad. In many cases, these expansions may reinforce the domestic activities of Dutch multinationals. If, however, comparative location conditions in The Netherlands are unfavourable for these industries, expansion abroad will lead to a reduction in domestic activities. In relating the export competitiveness of the Dutch industry with the multinational competitiveness of its firms, we found that The Netherlands is an attractive location for process industries such as food and chemicals, and it is characterized by highly competitive firms in these industries. For machinery, construction and assembly operations, location conditions seem to be less favourable in The Netherlands. Competitive firms in these industries tend to locate more of their production abroad. One way for public policy-makers to deal with this internationalization process is to improve location conditions which reinforce sustainable comparative advantages. In addition to a further expansion of existing activities in industries with strong competitive advantages, this may lead to new foreign investment in these industries which may more than compensate for possible (employment) losses from Dutch foreign investment away from vulnerable industries. The recent growth of direct investment by foreign-based firms in The Netherlands seems to suggest that this compensating process is already taking place.

Finally, increased specialization and free movements of productive factors are at the core of the 1992 programme. The internal market White Paper is a blueprint for making Community industry more competitive. It is natural that this policy should lead to increased specialization by Member States in line with their relative advantages, which implies that some businesses should be abandoned in favour of others.

Bibliography

Balassa, B., 'Comparative advantage in manufactured goods: a reappraisal', *Review of Economics and Statistics*, Vol. 68, No 2, May 1986, pp. 315-319.

Belderbos, R., 'De internationalisering van de Nederlandse economie; een studie naar omvang en determinanten van directe buitenlandse investeringen', Research memorandum 8801, Universiteit van Amsterdam, 1988, p. 132.

Brouwer, M. T. and Ter Hart, H. W., 'Ondernemen in Nederland, mislukkingen en mogelijkheden. De rol van het bedrijfsleven in het economisch herstel', Kluwer, Deventer, 1985, p. 220.

Buigues, P. and Ilzkovitz, F., 'The sectoral impact of the internal market', internal paper of the Commission of the European Communities, Document II/334/88-EN, 1988, p. 24.

Buigues, P. and Ilzkovitz, F., 'The single market: implications for Belgian industry', internal paper of the Commission of the European Communities, Document II/420/88-EN, 1988, p. 35.

Centraal Planbureau, 'Nederland en Europa '92', Werkdocument No 28, 's-Gravenhage, 1989, p. 143.

De Grauwe, P., '1992 and Europe's regions', mimeo, 1989, p. 22.

Koekkoek, K. A. and Mennes, L. B. M., 'Technologie en internationale handel, Ontwikkelingen in de Nederlandse handelsprestaties 1970-1980', 1985, pp. 297-301.

Sleuwaegen, L., 'The single European market: implications for Dutch manufacturing industries', 1989, p. 109.

Sleuwaegen, L., 'Multinational enterprises, the European Community and Belgium: recent developments', *Journal of Common Market Studies*, 1987, No 26(2), p. 17.

Sleuwaegen, L. and Yamawaki, H., 'The formation of the European common market and changes in market structure and performance', *European Economic Review*, 1988, No 32(7), pp. 1451-1475.

Portugal¹

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Contents

1.	Identification and relative importance of the sensitive sectors	303
1.1.	Tariff barriers	303
1.2.	Customs controls	303
1.3.	Public procurement	303
1.4.	Import quotas and Article 115	304
1.5.	Technical standards and regulations	304
1.6.	Changes made to the Community list	304
1.7.	The relative importance of the sectors affected by the internal market	306
2.	Analysis of the competitiveness of Portuguese industry	306
2.1.	Analysis of static competitiveness	306
2.2.	A composite indicator for static competitiveness	308
2.3.	Development of competitiveness since 1980	310
3.	The strengths and weaknesses of Portuguese industry and its prospects	
	in the light of the internal market	312
4.	Reactions of Portuguese companies to the internal market	320
Conc	clusion	321
Anne	2X	323

¹ Maria João Rodrigues de Dinamia (ISCTE Study Centre on Socio-economic Change) contributed to this study.

List of tables

1.	Identification of sensitive sectors	305
2.	Importance of the sectors identified at national level	306
3.	Importance of the 40 sensitive sectors identified at Community level	306
4.	Weak and strong points of national industry in the sensitive sectors	307
5.	Share of weak points, strong points and balanced sectors	308
6.	Indicators of static competitiveness in the sectors identified at national level (1986-87)	309
7.	Indicators of dynamic competitiveness in the sectors identified at national level	311
8.	Combination of the indicators of static and dynamic competitiveness	313
9.	The strong points of Portuguese industry	315
10.	The balanced points of Portuguese industry	316
11.	The relatively weak points of Portuguese industry	318
12.	The weak points of Portuguese industry	319

List of graphs

1.	Summary chart of static competitiveness in the sectors identified at national level	310
2.	Summary chart of dynamic competitiveness in the sectors identified at national level	312
3.	Analytical matrix	314
4.	Penetration and export ratios	314

1. Identification and relative importance of the sensitive sectors

This section is concerned with evaluating in the case of Portuguese industry, on the one hand, the sensitivity of the 40 sectors identified at European level, and on the other with identifying sectors which, bearing in mind the particular nature of the national industry, appear sensitive to the completion of the internal market. The list of additional sectors cannot be considered as exhaustive given the lack of statistical data at sectoral level.

From Table 1 we can evaluate the importance of the positive or negative impact which the removal of the different kinds of barrier will have on each sector. As barriers concern products and not sectors, we have taken into account the different share of the products concerned in the total production of the sector in evaluating the impact of barriers per sector.

1.1. Tariff barriers

In the case of Portuguese industry tariff barriers must also be taken into account although their removal is not one of the measures included in the White Paper but quite simply the result of Portugal joining the European Community. The effects of removing tariff and non-tariff barriers are felt simultaneously and it is therefore becoming virtually impossible to distinguish between the two. Furthermore, the sectors which were protected by tariff barriers are those most vulnerable to external competition and therefore the most sensitive.

In the criterion 'tariff barriers' we have included both customs duties and quantitative limits on imports which, by the terms of the Treaty of Accession, have been applied since 1986. In general, these are cases which, prior to this date, were the most important in terms of tariff protection.

In concrete terms, the tariff barriers taken into account for the purposes of this identification are indicated below. These are products which originate in Member States and present the following characteristics:

- (a) the customs duties were increased in 1985 (the basic level from which the customs duties will be progressively reduced until 1992);
- (b) significant fixed elements are applied in the framework of levies imposed for processed agricultural products. It should be stressed that the fixed element in the levy constitutes the protective factor for the manufacturing industry;

- (c) quantitative restrictions on imports up until the end of 1987 are applied : manufacture and assembly of motor vehicles (351);
- (d) import restrictions (from October 1986 to December 1988) are applied. They were first applied as a consequence of the safeguard mechanism : domestic refrigerators (346).

1.2. Customs controls

The customs controls correspond to the different kinds of restrictions applicable to Portuguese exports together with the supervisory procedures set up on joining the EC. They concern intra-Community trade:

- (i) exports of some textile products are subject to customs controls until 31 December 1988 (until the end of 1989 in the case of Spain). In the event of the quantities laid down for each of the national quotas being reached, the Commission fixes safeguard measures at the request of the Member State concerned : cotton industry (432), miscellaneous textile industries (439), ready-made clothing (453), household textiles and other made-up textile goods (455) and the knitting industry (436);
- (ii) until 31 December 1992 the Community of Ten applies zero duty customs quotas¹ on imports from Portugal : processed and preserved fish and other seafoods (415). In the case of sardines, the customs duty in EUR 12 was reduced to zero in 1989;
- (iii) Spain applies zero duty tariff ceilings¹ for certain products imported from Portugal until the end of 1990: cotton industry (432), miscellaneous textile industries (439), manufacture of ready-wear clothing and accessories (453), household textiles (455), knitwear industry (436), basic industrial chemicals (251);
- (iv) until 31 December 1992 Spain and Portugal may submit certain products originating in these two countries for inspection prior to import. This is solely for statistical purposes and the products in question are : beer (427) and soft drinks and natural spa waters (428).

1.3. Public procurement

According to the results of the NERB survey on non-tariff barriers in EUR 12, Portuguese industry attributes consider-

¹ The customs quota imposes a strict limit on the volume of merchandise which may be imported in return for a suspension of customs duties. In the case of a tariff ceiling, as soon as the limit set is reached, customs duties are only reimposed following the passing of a legal act stating that they 'may' be reimposed.

able importance to the effects of the opening up of publicprocurement markets.

Studies undertaken at national level conclude that the effects of removing this barrier will be felt mainly in the fields of energy, telecommunications and rail transport.

As regards energy, the activities most affected appear to be those which produce heavy equipment for electrical power stations. In the case of telecommunications, however, it should be noted that the market for subscriber equipment has already been open since 1986.

1.4. Import quotas and Article 115

Table 1 identifies the sectors which include products for which Portugal applies import quotas on produce from third countries, according to the provisions of the Treaty of Accession. In the majority of cases this barrier is of little significance. On the other hand, for those sectors which are specifically 'threatened' by competition from newly industrialized countries, the abolition of national quotas in the framework of defining a common external trading policy could increase competition within the Community.

In Portugal, the mechanism of Article 115 has to date been applied on just a single occasion: in 1987 and 1988 imports of Japanese motorcycles were subject to intra-Community supervision. This sector (363) has therefore been included. Furthermore, for certain sectors, even if the mechanism of Article 115 has not been applied, the potential protection afforded by this mechanism remains important.

1.5. Technical standards and regulations

As regards the technical standards barrier, there is no sufficiently coherent and systematic source of information able to be used in the specific case of Portuguese industry. This is why we have used the information prepared at Community level, identifying those sectors which are the subject of standards where the procedure of mutual recognition or the development of common standards are an important consideration.

Our experience also obliges us to identify three additional sectors : finished metal goods (316), domestic-type electrical appliances (346) and cycles and motorcycles (363). These are sectors where intra-Community exports are impeded by this type of barrier, particularly at the Spanish border.

It should, however, be noted that the removal of this barrier and all the resultant modifications as regards standardization and certification will have virtually no impact on imports as Portugal does not make any significant use of this type of measure to protect its market.

1.6. Changes made to the Community list

From the list of 40 NACE sectors identified at Community level, we have eliminated from the analysis in this study those sectors indicated below. These are sectors which represent an insignificant fraction of Portuguese industry and for which no statistics are available:

- (a) the manufacture of transmission equipment for motive power (326);
- (b) the manufacture of other specific machinery and equipment (327);
- (c) aerospace equipment manufacturing and repair (364);
- (d) manufacture of articles of jewellery and goldsmiths' and silversmiths' wares; cutting or otherwise working of precious and semi-precious stones (491);
- (e) photographic and cinematographic laboratories (493);
- (f) manufacture of toys and sports goods (494).

The results of our research to identify barriers at sectoral level—public procurement (PP), technical standards (TS), tariff barriers (TB), customs controls (CC) and Article 115 and quotas (Q)—have led us to add the following sectors to our initial list:

Man-made fibres (260): TB, Q Finished metal goods (316): TS Manufacture of other machinery and equipment (328): PP, TB Batteries, accumulators (343): TB Vehicle bodies (352): PP Motor vehicle parts (353): TB Motorcycles, bicycles (363): TB, Q Measuring and precision instruments (371): PP Fish and other seafood (15): CC Grain milling (416): TB Bread, biscuits (419): TB Knitting industry (419): CC, Q Miscellaneous textile products (439): CC, Q

The 47 sectors identified in this study of Portuguese industry can be broken down as follows:

Sectors identified at Community level: 40 Sectors eliminated: 6 Sectors added: 13

Identification of sensitive sectors

NACE code	Sectors	Public procurement	Technical standards	Article 115 quotas	Customs controls	Tariff barriers	Overall score	NACE code	Sectors eliminated
247	Glass & glassware industry		1	0		1	2	247	
248	M. of ceramic goods ¹							248	
251	M. of basic industrial chemicals		2	0		1	3	251	
256	M. of chemical products for agro. ind.		2				2	256	
257	M. of pharmaceutical products		2				2	257	
260	M. of man-made fibres			1		2	3	260	
315	Boilermaking	1	2				3	315	
316	M. of tools, fin. metal goods		2	0			2	316	
321	M. of agric. mach. & tractors		1				1	321	
322	M. of machine tools & other tools		1	0			1	322	
323	M. of textile machinery		1	0			1	323	
324	M. of machinery for food, chem. ind.		1				1	324	
325	M. of plant for mines, iron & steel ind.	1	1	0			2	325	
326	M. of transmission equipment						_	326	+
327	M. of equip. for spec. branches of ind.							327	+
328	M. of other mach. & equipment	1				1	2	328	
330	M of office & data processing mach.		2			1	3	330	
341	M. of insulated wires & cables	1				1	2	341	
342	M. of elect. mach.	1	1	0		1	3	342	
343	M. of elect. app. batts. & accumul.					2	2	343	
344/5	Radio & TV, telec. equipment	1	2	0		1	4	344/5	
346	M. of domestic-type elect, equip.		2			2	4	346	
347	M. of lighting ¹						_	347	
351	M. of motor vehicles, engines		1	1		2	4	351	
352	M. of car bodies, trailers, caravans	1					1	352	
353	M. of parts & access. for motor vehicles					2	2	353	
361	Shipbuilding ¹							361	
362	M. of rolling stock	2	1				3	362	
363	M of cycles motorcycles & parts		2	2			4	363	
364	Aerospace equipment manuf.						-	364	+
371	M of measuring & precision instru-								
571	ments	1		0			1	371	
372	M of medico-surgical app & ortho			Ū			_		
512	ann		1				1	372	
415	Proc & cons fish & seafood				1		ĩ	415	
416	Grain milling				1	2	2	416	
417	Pasta		2			2	4	417	
/10	Bread & flour confectionery		2			2	2	419	
419	M of cocoa, chocolate & sugar confect		2			2	4	421	
421	M. of wine champagne		2	0		2	4	425	
423	Brewing and malting		2	0	1	2	3	427	
427	M of off drinks mineral water		1	0	1		2	428	
420	Weel/eetten textiles		1	1	1		3	431/2	
431/2	Wool/cotton textiles		1	1	1		2	436	
430	M of corrects line ato 1			1	1		_	438	
430	Mise textile industries			1	1		2	439	
439	Misc. textile industries			1	1		1	451	
451	M. of ready made elething			1	1		2	453	
455	M. of ready-made clothing			1	1		2	455	
433	M. of multiple and dustal			1	1			481	
481	M. of rubber products'			0				401	Ť.
491	M. OI jewellery, gold & silverware							471	- -
493	Photo. & cinemat. labs							475	T L
494	IVI. OI TOYS & SPORTS goods							474	-T*

Note: Score by criteria: 0 = little or no impact; 1 = considerable impact; = very important impact. ¹ These sectors are sensitive because there are NTBs, identified at Community level.

1.7. The relative importance of the sectors affected by the internal market

Sixty per cent of the value added of Portuguese industry is accounted for by sectors affected by the completion of the internal market, which is significantly higher than the Community average. Furthermore, if employment is taken into account, almost 70 % of industrial employment is affected.

Table 2

Importance of the sectors identified at national level

Significance of barriers	Share of industrial	Share of industrial	Import intra/ import extra
(NTB & TB)	(1986)	(1986)	(1986 + 1987)
High	25,0	23,6	1,80
Average	35,2	44,4	1,89
Total sensitive sectors	60,2	68,1	1,84

However, if only the sectors identified at Community level are included, the figures fall to 45,3% of the industrial value added and 48,1% of industrial employment. It is therefore the specific national characteristics of Portuguese industry which largely explain the fact that the share of the sectors concerned by the internal market is significantly below 50 % and this all the more so as six of the 40 sectors identified at Community level do not represent any significant share of Portuguese industry.

Table 3

Importance of the 40 sensitive sectors identified at Community I	mportance	of the	40	sensitive	sectors	identified	at	Community	level
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	Share of industrial value added ¹ (1986)	Share of industrial employment ¹ (1986)	Import intra/ import extra (1986+1987)
Group 1	2,7	2,4	1,63
Group 2	5,4	3,4	2,15
Group 3	5,1	4,8	3,15
Group 4	32,1	37,4	1,93
Total sensitive sectors	45,3	48,1	1,95
Total industry	100,0	100,0	1,66

the inclusion of industrial electronics (NACE 345) in Group 1,
 the exclusion of NACE sectors 326, 327, 364, 491, 493 and 494.

Sources: Industrial statistics (INE) and Eurostat file EC 36.

2. Analysis of the competitiveness of Portuguese industry

Before presenting the analysis of the competitiveness of the sectors identified at national level, it is important to provide a brief outline of a number of characteristics of Portuguese industry in order to better understand its recent development.

- (a) Portuguese industry is very open to international trade. The phenomenon of European integration dates back to Portugal's involvement in setting up the EFTA in 1959. Economic relations with the Community countries began to intensify with the 1972 Agreement. In 1985, imports and exports accounted for 37 % and 27 % of the GDP respectively, figures below those of Belgium, Ireland and The Netherlands only, while the intra-Community imports and exports of Portuguese industry accounted for 60 % of the total volume of international trade, the average (EUR 12) being just 53 %.
- (b) It should be remembered that Portuguese industry experienced a severe depression in 1983 and 1984. Investment rates were extremely low, resulting in a sharp fall in imports of capital goods and durable consumer goods.
- (c) Sectoral heterogeneity is very pronounced in Portugal. The low density of the industrial fabric and low concentration of distribution networks account, in part, for the co-existence of enterprises which, regardless of the scale of their operations, present widely varying levels of efficiency. Consequently, the NACE 3-digit analysis of sectoral fragmentation is based on average values which often conceal quite a diverse reality.
- (d) Following the nationalizations effected during a politically troubled period (1974/75), the public sector extended to a large part of Portuguese industry, namely iron and steel, basic chemical products, cements, brewing, together with the banking sector and insurance. This situation affected the development of national economic groups and the possibility of a sustained restructuring of the manufacturing base.
- (e) This is a critical period for Portugal due to the simultaneous convergence of a number of processes which are already determining the development of sectoral redeployment and which are : the effects of EC membership as such, the effects of the completion of the internal market, efforts to restructure and modernize industry and, lastly, the process of privatization initiated in 1989.

2.1. Analysis of static competitiveness

This initial approach highlights the marked polarization of Portuguese industry in which a limited core of sectors are

Weak and strong points of national industry in the sensitive sectors¹

NACE	Sectors		Weak point	ts	NAC	E Sectors	Ba	lanced posi	tion	NAC	E Sectors		Strong poin	ts
		Intra cov. rat. (1986 + 1987)	Intra cov. rat. (variat.)	Intra SI (1986 + 1987)	code		Intra cov. rat. (1986 + 1987)	Intra cov. rat. (variat.)	Intra SI (1986 + 1987)	code		Intra cov. rat. (1986 + 1987)	Intra cov. rat. (variat.)	Intra SI (1986 + 1987)
321	Agri. mach.	0,5	213	1,2	439	Textile prod.	101,0	64	107,1	315	Boilermaking	177,8	235	157,1
421	Cocoa	0,8	4	0,3						341	Insul. wires & cab.	184,9	190	293,7
325	Plant for mines, etc.	5,5	485	4,9						248	Ceramics	303,9	205	171,7
371	M. of measur. instr.	5,6	391	4,1						436	Knitwear industry	1 261,4	84	411,7
416	Grain milling	5,9	33	5,3						453	Ready-made			
362	Rolling stock	6.8	911	9.6							clothing	1 468.1	52	250.7
260	Man-made fibres	7.3	81	11.8						451	Footwear	2 516.1	45	495.1
328	Other machinery	8.0	273	7.1						455	Household textiles	5 374.9	59	869.7
323	Textile machinery	8.9	159	29.4						415	Fish & other seaf.	8 868.8	30	139.0
346	Domestic-type appl	10.3	286	10.3						425	Wines champagne	21 443 5	49	525.9
361	Shipbuilding	15.3	15	6.7						120	in mes, enumpugne	21 110,0	0	020,0
324	Mach. food chem. &	15,5	15	0,7										
	rel. 1.	15,8	225	19,0										
347	Lighting	17,3	149	13,0										
322	Mach. & other tools	18,3	1 022	9,6										
481	Rubber products	19,5	224	14,8										
419	Bread, biscuits	19,7	81	1,9										
427	Brewing & malting	20,2	124	6,3										
343	Electr. appliances	23,5	128	14,3										
257	Pharmaceuticals	23,5	168	27,6										
330	Office & data-proc.													
	mach.	23,7	25	7,7										
417	Pasta	24,7	44	4,8										
372 353	Medical equipment Motor veh. parts &	25,7	96	16,2										
	acc.	26.9	223	28.3										
251	Basic ind, chemicals	27.5	169	20.7										
363	Motorcycles.													
	bicycles	30.6	58	23.1										
316	Metal goods	49.1	88	41.3										
342	Electr. equipment	50.2	124	38.3										
256	Ind agr chem			20,2										
200	prod	57.6	80	57.6										
247	Glass & glassware	57.8	51	40.1										
352	Car bodies	65.6	98	17.3										
351	Motor vehicles	67.0	276	35.2										
138	Carpets	68 3	41	30.7										
428	Water soft drinks	72.9	12	7.0										
431/2	Wool/cotton	12,9	12	7,0										
-131/2	textiles	78.6	80	110.0										
311/5	Electron telecomm	82.5	121	44.5										
544/5	Election. telecontilit.	02,5	121	- - , J										

Weak points: intra cov. ratio < 90%; Balanced position: 90% ≤ intra cov. ratio ≤ 110%; Strong points: intra cov. ratio > 10%; Variation: difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982 (1980 + 1981 + 1982 = 100). Source: Eurostat file EC 36.

Share of weak points, strong points and balanced sectors

	Î			Share of industrial employment (1988) ¹	
Weak points	37	45,2	45,3	40,0	
Balanced position	1	0,8	1,2	1,5	
Strong points	9	14,2	21,5	28,1	
Total sensitive sector	s ² 47	60,2	68,1	69,6	

Source: Industrial statistics (INE). Remark: values not available for NACE sector 455 (strong points group).

effective strong points and a large number of sectors lie in the weak points category. In fact, 37 of the 47 sensitive sectors identified, representing approximately 45 % of employment and 45 % of the value added, recorded intra-Community coverage ratios below 90 % during the period analysed. A minority of nine sectors (representing 14,2 % of the value added and 21,5 % of total industrial employment) recorded a coverage ratio of over 110 %.

2.2. A composite indicator for static competitiveness

The use of a range of four competitiveness indicators (see Table 6) provides a more global picture of the real position of one sector *vis-à-vis* its intra- and extra-Community partners.

The use of a range of indicators permits both a more accurate and sensitive analysis and provides a more realistic classification of sectors. A study of the breakdown of sectors on the basis of this classification (illustrated in Graph 1) allows us to distinguish quite different levels of static competition.

On the basis of the global scores attributed for the composite indicator, four groupings are proposed:

- Group 1: global score attributed = +4, +3, +2
- Group 2: global score attributed = +1, 0, -1

Group 3: global score attributed = -2, -3

Group 4: global score attributed = -4

Some observations

In 1986, for industry as a whole and in terms of employment and value added, these groups represented the following percentage shares:

	Employment (%)	Value added (%)	Sector number
Group 1	22,0	14,4	9
Group 2	28,5	21,4	8
Group 3	5,2	8,7	10
Group 4	12,4	15,7	20

Sectors with an intra-Community coverage ratio of over 100 % also record high values as regards extra-Community trade (except for the boilermaking sector). On the other hand, some sectors considered as 'weak points' (intra-Community coverage ratio below 90 %) record surpluses in extra-Community trade, a situation which may reflect a good sectoral performance, as is the case for the sectors indicated below :

NACE code	Sector ¹	Intra-EC coverage ratio	Extra-EC coverage ratio
247	Glass	57,8	192,2
316	Metal goods	49,1	395,5
352	Vehicle bodies	65,6	271,5
361	Shipbuilding	15,3	1 483,3
438	Carpets	68,3	250,9

Only those sectors where the coverage ratio is of significance are included here, i.e. those sectors integrated into international trade.

Indicators of static competitiveness in the sectors identified at national level (1986-87)

NACE code	Sectors	Intra cov. ratio	Intra SI	Extra cov. ratio	Product. SI (1985)	Global score
247	Glass & glassware	57,8	40,1	192,2	80,4	-2
248	Ceramics	303,9	171,7	283,8	119,6	+4
251	Basic industrial chemicals	27,5	20,7	43,6	89,9	-4
256	Chem. for ind. agri.	57,6	57,6	48,7	375,4	-2
257	Pharmaceuticals	23,5	27,6	78,4	64,8	-4
260	Man-made fibres	7,3	11,8	15,4	213,8	- 2
315	Boilermaking	177,8	157,1	94,3	22,9	+1
316	Metal products	49,1	41,3	395,5	134,2	0
321	Agricultural machinery	0.5	1.2	5,1	31,9	-4
322	Machine and other tools	18.3	9.6	31.8	21.6	-4
323	Textile machinery	8,9	29.4	10.8	29.7	-4
324	Mach, for food, chem, ind.	15.8	19.0	119.6	8.3	- 2
325	Plant for mines, etc.	5.5	4.9	14.7	7.5	-4
328	Other machinery	8.0	7.1	29.9	26.3	-4
330	Office & data process mach	23.7	7.7	29.3	25.2	-4
341	Insulated wires & cables	184.9	293.7	251.0	269.8	+4
342	Flectric equipment	50.2	38.3	51.6	14.6	-4
343	Electric appliances	23.5	14 3	38.7	85.8	-4
344/5	Electron telecomm	82.5	44 5	18.4	60.7	-4
346	Domestic-type elect appl	10.3	10.3	48 3	51.5	-4
347	Lighting	17.3	13.0	66.1	121.0	- 2
351	Motor vehicles	67.0	35.2	33.6	42.0	-4
352	Car bodies	65.6	17.3	271.5	97.6	-1
353	Motor vehicles parts & access	26.9	28.3	12.8	71.9	-4
361	Shiphuilding	15.3	67	1 483 3	124.8	0
362	Bolling stock	6.8	9,6	137.4	124,0	-2
363	Motorcycles bicycles	30.6	23.1	60.2	81.9	-4
371	More & precis instruments	56	4 1	36.0	23.0	-4
372	Medical equipment	25.7	16.2	29.8	27.9	-4
415	Fish & other seafood	8 868 8	139.0	1 897 3	325.1	+4
416	Grain milling	5.9	53	3 2	439 1	-2
417	Pasta	24.7	4.8	1 860 4	81.4	-2
410	Bread bisquits	19.7	1.9	398 3	250.4	0
421	Cocoa choc etc	0.8	0.3	28.4	220,4	-4
421	Wines champagne	21 443 5	525.9	18 331 1	316.8	+ 4
427	Brewing & malting	21 445,5	63	1 442 6	56.8	-2
128	Water soft drinks	72 0	7.0	93.9	80.3	-3
431/2	Wool/cotton textiles	78.6	110.9	76.6	416.5	0
431/2	Knitwear industry	1 261 4	411 7	1 686 3	215.3	+4
438	Carpets	68 3	39.7	250.9	118.9	0
430	Misc textile ind	101.0	107.1	230,2	231.1	+2
451	Footwear	2 516 1	405 1	1 487 6	261.9	+ 4
452	Ready-made clothing	1 468 1	250.7	3 056 6	201,5	+4
455	Household textiles	5 374 0	860 7	2 453 0	1 010 5	+4
481	Rubber products	19,5	14,8	52,5	54,8	-4

1 if intra SI, prod.
0 if 90 ≤ intra, SI, prod.
+ 1 if intra SI, prod.

<90 ≤110 >110

Note: The scores are attributed as follows:-1 if intra, extra cov. ratio< 90-1 if intra SI0 if $90 \le$ intra, extra cov. rat. ≤ 110 0 if $90 \le$ in+1 if intra, extra cov. ratio>110+1 if intra SISources: Eurostat files EC 36 and EC 02A; National accounts (INE).



The fact that the intra-Community trade figures (EUR 10) do not include trade with Spain constitutes an additional argument for the sector classification to be based also on extra-Community trade.

2.3. Development of competitiveness since 1980

The sectors were also classified on the basis of the development, since the early 1980s, of their extra- and intra-Community coverage ratio and the Balassa specialization index. The results of this classification are given in Table 7 and Graph 2.

On comparing this classification with that of static competitiveness, an initial observation is that the distribution of sectoral classifications is better balanced. In fact, the number of sectors attributed extreme global scores is significantly lower, falling from 27 to 17. It should be pointed out, however, that the distribution of employment in the different categories of sector points to a major weakness in Portuguese industry. The sectors which are negatively classified in terms of dynamic competitiveness account for 54,5 % of industrial employment in 1988 while the positively classified sectors account for just 9,7 %. Table 8 shows the distribution of sensitive sectors on the basis of the relationship between the changes in intra-Community coverage ratios and the values which this indicator has reached over the last few years. Of all the sectors having intra-Community coverage ratios in excess of 110 % (the 'strong point' sectors) only three—boilermaking (315), insulated wires and cables (341) and ceramics (248)—have coverage ratio variations of +5 %.

Furthermore, if we consider (see Annex) the different levels of static competitiveness included among these 'weak point' sectors (Groups 2, 3 and 4), we see that the majority of the sectors which recorded a positive development in intra-Community coverage ratios belong to the least competitive sector group (Group 4).

Although the combination of these indicators constitutes an interesting item for analysis, in the case of Portugal it should, nevertheless, be used with some care and the analysis of intra- and even extra-Community coverage ratios during a period of observation stretching up until 1987 must take into account a number of specific realities of the Portuguese economy and its development:

Indicators of dynamic competitiveness in the sectors identified at national level

NACE code	Sectors	Variation intra X/M	Variation intra SI	Variation extra X/M	Global score
247	Glass, glassware	- 56,3	- 75,1	- 120,7	- 3
248	Ceramics	155,3	40,0	-18,6	+ 1
251	Basic industrial chemicals	11,2	- 16,6	18,5	+ 1
256	Ind. agr. chem. prod.	- 14,5	-104,1	-30,3	- 3
257	Pharmaceuticals	9,6	-20,9	29,8	+1
260	Man-made fibres	-1,7	-25,1	0,2	-1
315	Boilermaking	102,0	38,7	-42,6	+ 1
316	Metal products	- 6,9	-43,3	-69,3	- 3
321	Agric. machines	0,3	0,0	-15,4	-1
322	Mach. & other tools	16,5	3,6	12,0	+ 3
323	Textile machinery	3,3	-30,7	1,0	-1
324	Mach. food. chem. ind.	8,8	-7,0	57,1	+1
325	Plant for mines, etc.	4,4	0,6	6,9	+ 2
328	Other machinery	- 5,0	-1,5	13,9	0
330	Office & data proces. mach.	- 70,2	- 77,4	-13,9	- 3
341	Insul. wires & cables	87,6	131,3	186,3	+ 3
342	Electr. equip.	9,7	-79,1	14,7	+1
343	Electr. applia.	5,2	-26,5	25,0	+1
344/5	Electron., telecomm.	14,4	-127,0	-14,5	-1
346	Dom. type el. app.	6,7	2,7	35,5	+ 3
347	Lighting	5,7	-8,3	-14,5	- 1
351	Motor vehicles	42,7	-13,6	31,5	+1
352	Car bodies	-1,2	-8,8	177,6	0
353	Mot. veh. parts & acc.	14,8	12,5	-2,6	+ 2
361	Shipbuilding	-88,8	-42,1	1 366,7	-1
362	Rolling stock	6,0	8,6	-118,1	+1
363	Motorcycles, bicycles	-22,3	-30,0	-54,1	- 3
371	Meas. & precis. instr.	4,2	0,3	22,4	+2
372	Medical equip.	-1,0	- 42,4	7,8	0
415	Fish & other seafood	- 20 998,6	-709,1	-18 211,6	- 3
416	Grain milling	-12,1	-14,9	2,9	- 2
417	Pasta	- 31,2	- 3,9	-1562,9	- 3
419	Bread, biscuits	-4,5	-1,1	179,1	0
421	Cocoa	-18,6	-1,4	8,3	-1
425	Wines, champagne	- 22 738,5	-356,5	-80 739,0	- 3
427	Brewing & malting	3,9	-7,4	164,8	0
428	Water, soft drinks	- 530,3	3,6	-1672,5	-1
431/2	Wool/cotton textiles	-19,7	-27,0	- 57,4	- 3
436	Knitwear industry	-231,8	-204,9	874,5	-1
438	Carpets	- 99,4	- 39,2	-65,9	- 3
439	Misc. text. ind.	- 57,6	-160,4	- 39,3	- 3
451	Footwear	- 3 031,5	183,4	-3 560,0	-1
453	Ready-made clothing	-1351,0	-186,9	- 102,6	- 3
455	Household textiles	- 3 746,9	-1 246,5	- 434,2	- 3
481	Rubber products	10,8	1,8	12,1	+ 3

< 0 = 0 = 0 > 0

Note: Variation: Difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982.

The scores are attributed as fold	we'	
The scores are attributed as role	J W S .	
– 1 if intra, extra X/M	< -5%	- 1 if intra SI
$0 \text{ if } -5\% \leq \text{intra, extra } X/N$	$1 \leq +5\%$	0 if intra SI
+1 if extra X/M	> + 5%	+ 1 if intra SI

Sources: Eurostat files EC 36 and EC 02A; National accounts (INE).



- (a) In 1986/87, the real growth of investment (9,5 % in 1986 and 19,6 % in 1987) and consumption was very high. The increase in final demand over these two years reached rates significantly higher than those recorded in the other Member States (+4,4 % in 1986 and +6,9 % in 1987), a situation which is explained to a large extent by the negative variation of these variables during the period prior to 1983/85.
- (b) Membership of the EC in 1986 brought immediate consequences in terms of external economic relations which is why the development of external trade indicators in the case of the industries of the new Member States cannot be directly compared to those in the other Community countries without the reality of recent accession being taken into account.
- (c) Finally, traditional sectors in which Portugal enjoyed competitive advantages are undergoing restructuring in the face of competition from developing countries. In these sectors the present objective is to position Portuguese industry on better quality products (upgrading).

3. The strengths and weaknesses of Portuguese industry and its prospects in the light of the internal market

For the global analysis of the competitiveness of the four sector groups, we have in each case compiled a Table presenting all the indicators used (Tables 9 to 12).

Import penetration rates and export rates have been added to the standard list of indicators (absolute value and variation). They allow us to distinguish between inter-sectoral and intrasectoral specialization.

Graph 3 gives the distribution of sectors identified on the basis of penetration rate and export rate. The positioning of the sectors yields important elements of analysis, identifying (see Graph 3) on the one hand those which can be considered as closed sectors (oriented towards the national market) and on the other hand those sectors in which external trade plays a significant role, that is, either exports, imports (intersectoral specialization) or the two-way flow of trade (intrasectoral specialization).

Combination of the indicators of static and dynamic competitiveness (intra, coverage ratio)

		Weak points		Balanced position			Strong points	
		NACE code	Sectors	NACE	Sectors	NACE	Sectors	
Variation intra X/M	<-5%	421 416 361 330 417	Cocoa Grain milling Shipbuilding Office & data proc. Pasta	439	Misc. text. ind.	436 453 451 455 415	Knitwear industry Ready-made clothing Footwear Household textiles Fish & other seaf.	
		363 316 256 247 438 428 431/2	Motorcycles, bicycles Metal products Ind. agri. chem. prod. Glass, glassware Carpets Water, soft drinks Wool/cotton text.			425	Wines, champagne	
Variation intra X/M $-5\% \le x \le +5\%$		321 325 371 260 328 323 419 427 372 352	Agricultural mach. Plant for mines, etc. Meas. & precis. inst. Man-made fibres Other machinery Textile machines Bread, biscuits Brewing & malting Medical equip. Car bodies					
Variation intra X/M	+ 5%	362 346 324 347 322 481 343 257 353 251 342 351 344/5	Rolling stock Dom. type el. app. Mach. food, chem. ind. Lighting Other machinery Rubber products Electr. appl. Pharmaceuticals Mot. veh. parts & acc. Basic ind. chems. Electr. equipment Motor vehicles Electron. telecomm.			315 341 248	Boilermaking Insul. wires, cables Ceramics	

Note: Variation: difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982. Source: Eurostat file EC 36.

		Export ratio			
		Weak	Strong		
PEN	S T R	Exposed	Competitive segments (intra-sectoral, specialized)		
E T R A T	N G	Very low competitiveness (Group 4)	Very low competitiveness (Group 4)		
I D N R	W E A K	Domestic Average competitiveness (Group 2)	Competitive in overall terms (inter-sectoral, specialized)		
		Weak competitiveness; protected (Group 3)	Very high competitiveness (Group 1)		

The analysis of competitiveness which we will set out below for each of the four sector groups will take into account the positioning of the sectors in Graph 4.

Group 1: Very high competitiveness (+4, +3, +2)—the strong points of Portuguese industry

Group 1 corresponds to 29,4 % of industrial employment in 1988. It groups together those sectors which are clearly competitive in Portugal and which represent the highest growth rates for employment during the period 1981-88. If we leave aside the insulated wires and cables sector and also, to a certain extent, wines and champagne, the origins of this competitiveness and this creation of employment lie mainly in the low wage costs and the very widespread use of precarious forms of employment (limited employment contract, work in the home).

Behind this method of workforce management rooted in external flexibility, there is a very active fabric of 'diffuse industrialization' in which the predominant elements are SMEs which are more or less integrated into the subcontracting networks of major companies and a part of which are not even evaluated by the available statistical sources.


The strong points of Portuguese industry

Group 1: Total score = +4, +3, +2

NACE code	Sector	Intra EUR 10 trade						Prod. Total trade								
		Coverage ratio		Balassa Intra/ SI 1986		ext. ind. + 1987	(1985) ind. EUR 1987 12		erage tio	Balassa SI		Penetr. rate ¹		Export rate ¹		
		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Import.	Export.		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Value 1985 + 1986	Varia.	Value 1985 + 1986	Varia.
248	Ceramic	303,9	155,3	171,7	40,0	1,4	1,5	119,6	295,6	100,8	231,6	86,3	9,6	4,4	58,9	26,9
341	Insul. wires & cables	184,9	87,6	293,7	131,3	5,1	3,7	269,8	195,9	108,5	366,9	290,0	38,0	24,2	54,9	39,7
415	Fish & other seafood	8 868,8	-20 998,6	139,0	- 709,1	0,4	1,7	325,1	3 730,8	-20 833,1	426,0	- 699,1	11,8	0,5	27,2	-4,4
425	Wines, champagne	21 443,5	-22 738,5	525,9	- 356,5	2,7	3,2	316,8	20 607,5	-33 398,9	538,2	- 345,8	0,0	0,0	49,9	13,3
436	Knitwear industry	1 261,4	- 231,8	411,7	-204,9	3,2	2,4	215,3	1 363,3	130,2	778,2	120,5	14,7	5,3	66,9	14,1
439	Misc. text. ind.	101,0	- 57,6	107,1	- 160,4	2,8	1,2	231,1	134,9	-64,7	207,1	- 126,2	31,2	19,1	53,6	15,8
451	Footwear	2 516,1	- 3 031,5	495,1	183,4	1,8	3,0	261,9	2 146,9	- 3 176,3	677,0	303,4	35,2	32,7	93,3	40,0
453	Ready-made clothing	1 468,1	-1 351,0	250,7	- 186,9	3,0	1,5	290,4	1 862,3	-1 104,7	630,2	36,0	7,5	5,3	74,1	32,7
455	Household textiles	5 374,9	- 3 746,9	869,7	-1 246,5	1,2	2,6	1 010,5	4 029,7	2 133,4	1 530,6	- 332,5	16,8	5,9	95,6	5,2
	Total industry	95,8	34,8	100,0		1,7	1,7	100,0	95,0	29,6	100,0	_	28,8	1,7	30,9	9,4

Note: Variation: for the Eurostat data, the variation constitutes the difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982; in the case of National accounts data (INE), the most recent period constitutes the average for the years 1985 and 1986. Sources: Eurostat; ¹ National accounts.

As we can see in Table 9, both the intra-Community and worldwide trade indicators of these sectors reach very high levels.

This group includes traditional industries such as textile manufacture, footwear, wine and champagne, and fish and other seafood which are important within Portuguese industry as a whole (26,8 % in terms of employment in 1988), together with ceramics and insulated wires and cables.

The positioning of these sectors in Graph 4 confirms the extremely high values of the coverage ratios : on the one hand, low import penetration rates and, on the other hand, very high export rates. These elements indicate the existence of inter-sectoral specialization. The reason for the low level of fish and other seafood exports (415) becomes clear if we take into account the subsectors which this item covers. Virtually all exports by this sector concern fish conserved in olive oil or varied sauces, exports of which amounted to 72 %. The other subsectors (refrigeration of fish and salted and smoked fish) are oriented towards the national market.

If we consider the development of the indicators of competitiveness, the ceramic and, in particular, the insulated wires and cables sector, differ from the traditional industries where this development is clearly negative. However, the negative development of coverage ratios does not necessarily reflect an absolute fall in competitiveness, but perhaps also the development of an intra-sectoral strategy.

The impact of the completion of the internal market on this group of traditional industries depends upon changes which will take place in the field of Community external trade policy. In fact, increased competition from newly industrialized countries which, to a large extent, explains the fall in the coverage ratio of Portugal, already constitutes a determining factor in the strategies adopted in the Community countries. The opening up of the Community frontiers to these countries will take into account the necessary efforts to restructure Portuguese industry to position itself on higher quality outlets.

Imports from the EC/EFTA countries of a number of products included in the insulated wires and cables sector are still taxed today (± 8 %) and, furthermore, the public-procurement markets represent a significant share. The removal of these barriers will certainly boost imports. However, the values and variations in export rates show that, in recent years, this sector has been able to orientate its production towards the exterior, and the Community in particular, by benefiting from this protection (intra-Community exports accounted for an average of approximately 80 % of total exports in 1986 and 1987). Furthermore, the opening up of public-procurement in the Community as a whole also undoubtedly constitutes a major opportunity.

In the case of the wine and champagne sector, the removal of tariff barriers will lead to a fall in the intra-Community coverage ratio, given the expected rise in imports. However, account should also be taken of the major restructuring over recent years of the sectors which group together alcoholic drinks where foreign investment has played a major role. The objective was, initially, to exploit the remarkable growth in national demand by making the distribution networks profitable.

Group 2: Average competitiveness (+1, 0, -1)

The sectors included in this group show high indicators of static competitiveness if we consider external trade as a whole and relatively low indicators in the case of intra-Community trade. Table 10 gives the coverage ratios. If we consider extra-Community trade, the coverage ratios are above 100 %.

Another common characteristic is the high level of the production specialization index for those sectors which, as is true of those in Group 1, represent a relatively important share in the productive structure of Portuguese industry: 28,5 % and 21,4 % respectively of employment and value added in 1986.

These industrial activities have long been a part of the Portuguese industrial fabric, but have not experienced a development like that of the traditional Group 1 industries. This is notably because the external market was not a major objective in their development strategy, serving only as an outlet in the event of surpluses on the national market. Furthermore, these industries are characterized by quite a high level of national protection which raises some doubts as to their future development in the framework of the completion of the internal market.

If we consider the positioning of these sectors in Graph 4 we can see a homogeneity characterized by the low level of import penetration and export rates. The shipbuilding sector is an exception as it is the only one which is already oriented towards exports, particularly extra-Community exports.

The relatively high level of static competitiveness which seems to characterize this group of sectors, if we consider the values of the coverage ratios of total trade, may be misleading as is apparent from Table 10. If we take the example of the bread and flour confectionery sector (419), the high production specialization index (SI) and the total coverage ratios should be analysed by taking into account

Table 10

The balanced points of Portuguese industry

Group 2: Global score = +1, 0, -1

NACE	Sector			Intra EU	R 10 trade			Prod. SI ¹		Total trade						
		Coverage Ba ratio		Bal	Balassa Intra/ext. ir SI 1986 + 199		ext. ind. + 1987	(1985) EUR 12	Coverage ratio		Balassa SI		Penetr. rate ¹		Export rate ¹	
		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Import.	Export.		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Value 1985 + 1986	Varia.	Value 1985 + 1986	Varia.
315	Boilermaking	177,8	102,0	157,1	38,7	1,7	3,2	22,9	146,7	51,5	74,9	22,6	16,4	5,3	23,0	17,1
316	Metal products	49,1	-6,9	41,3	-43,3	2,8	0,4	134,2	139,2	- 34,1	148,0	- 55,0	22,3	3,0	28,1	8,1
352	Car bodies	65,6	-1,2	17,3	- 8,8	3,4	0,8	97,6	112,6	37,2	36,6	13,3	9,7	0,2	20,5	16,7
361	Shipbuilding	15,3	- 88,8	6,7	-42,1	3,0	0,0	124,8	386,2	271,4	147,9	57,2	53,5	22,3	81,4	14,1
419	Bread, biscuits	19,7	-4,5	1,9	-1,1	2,8	0,1	250,4	118,6	-7,3	14,4	-9,9	0,2	-0,1	0,6	0,1
431/2	Wool/cotton textiles	78,6	- 19,7	110,9	- 27,0	2,1	2,1	416,5	77,9	- 30,9	194,1	39,3	16,8	4,3	15,6	1,2
438	Carpets	68,3	- 99,4	39,7	- 39,2	3,9	1,1	118,9	105,9	- 102,9	88,8	- 12,9	20,1	5,2	27,0	6,6
	Total industry	95,8	34,8	100,0	_	1,7	1,7	100,0	95,0	29,6	100,0	_	28,8	1,7	30,9	9,4

Note: Variation: for the Eurostat data, the variation constitutes the difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982; in the case of National accounts data (INE), the most recent period constitutes the average for the years 1985 and 1986. Source: Eurostat file EC 36; ¹ National accounts.

very low import penetration and export rates and the very low Balassa SI. In the case of this group, the fall in competitiveness could reflect a situation of fragility, the coverage ratios not being very high and, on the other hand, the importance of international trade being very low.

To evaluate the impact of the completion of the internal market, it should be remembered that the importance of intra-EC trade as a part of total trade is high for imports (high ratio of intra-Community imports to extra-Community imports in Table 10) but low for exports (the ratio of intra-Community exports to extra-Community exports is below the average for the industry as a whole (1,7), except in the case of boilermaking and wool and cotton textiles).

The sectors which are not specifically affected by barriers presenting an obstacle to imports are:

- (i) the manufacture of metal goods (316);
- (ii) shipbuilding (361);
- (iii) wool and cotton textiles (431/2);
- (iv) carpets (438).

This leads us to predict that the effects of the internal market could prove positive here, while permitting an increase in trade with the Community. The condition for success appears to be linked to the adoption of a strategy of cooperation in the matter of production and above all trade with the Community partners. Competitive prices are a major asset in the case of the metal goods sector.

As far as shipbuilding is concerned, a sector which is basically oriented towards extra-Community trade, it does not seem that its development will necessarily be significantly affected by the completion of the single market, unless there is major restructuring at world level.

In the other sectors (boilermaking and vehicle bodies) the protection afforded by the public-procurement market seems to be confirmed by the low penetration rate.

In the boilermaking sector, the values of the competitiveness indicators have been the subject of critical comment. In this sector, it is necessary to distinguish between, on the one hand, the manufacture of large heating installations for power stations, refineries, and the paper pulp industries and, on the other hand, the manufacture of boiler parts.

In the first subsector, the protection of the Community public procurement partly accounts for the low share of imports and exports. Nevertheless, these companies maintain technological cooperation agreements with worldwide leaders (notably with the ABB group), while showing a good productive performance. In the framework of the process of completing the internal market, the purely national scale of Portuguese companies constitutes a major handicap, which is leading these companies to join international groups, particularly at Community level.

The boiler products are manufactured by medium-sized metallurgical companies, the technological know-how and level of competitiveness of which seem to satisfy part of the domestic demand. The exports recorded for the sector as a whole are mainly accounted for by the sale of gas holders. Although the intra-Community coverage ratio for this sector as a whole shows a level of above 100 %, it seems that this should not be considered as a 'strong point', especially as, according to certain sectoral experts, imports such as smaller boilers have apparently been underestimated.

In the vehicle bodies and trailers sector, the public transport authorities are a major customer of the five national manufacturers. Given the good competitive performance of this sector (exports have risen sharply over recent years) and the decreasing importance of public procurement, no fall in national production is expected despite the probable increase in import penetration rates. Spain, especially since joining the EC, occupies an important position in extra-Community exports, thereby significantly raising the intra-Community (EUR 12) coverage.

Group 3: Quite low competitiveness (-2, -3)

The sectors included in Groups 3 and 4 are considered as being the least competitive according to the classification adopted. Their intra-Community coverage ratios and Balassa SI are below 100 %. Within Group 3 we can, however, identify sectors with a total production SI rate of over 100 %.

The positioning of sectors in terms of import penetration and export rates (Graph 3) allows subgroups to be distinguished: that of 'domestic sectors' on the one hand (chemical products, man-made fibres, grain milling, spaghetti and macaroni, etc., beer and water) and of 'sectors integrated into international trade' on the other hand (glass and glasswear, machines for the foodstuffs and chemical industry, lighting and rolling stock).

1. Domestic sectors

The foodstuffs sectors (grain milling and spaghetti and macaroni, etc.) have always been protected by tariff barriers, the absence of any marketing policy being the principal result. The progressive removal of tariff barriers will have marked effects on these industries, the survival of which

The relatively weak points of Portuguese industry

Group 3: Global score = -2, -3

NACE code	Sector		Intra EUR 10 trade					Prod. SI ¹				Total	trade			
		Coverage Ba ratio		Bala	Balassa Intra/ext. ind. SI 1986 + 1987		(1985) EUR 12	Cove	erage tio	Balassa SI		Penetr. rate ¹		Export rate ¹		
		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Import.	Export.		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Value 1985 + 1986	Varia.	Value 1985 + 1986	Varia.
247	Glass, glassware	57,8	- 56,3	40,1	- 75,1	2,3	0,7	80,4	98,0	- 66,1	94,3	- 50,9	32,1	12,8	35,5	6,8
256	Ind. agri. chem. prod.	57,6	- 14,5	57,6	- 104,1	3,0	3,6	375,4	55,4	- 18,8	68,8	-61,8	18,0	-4,7	28,4	10,6
260	Man-made fibres	7,3	-1,7	11,8	- 25,1	1,8	0,9	213,8	10,2	-1,0	27,1	- 18,3	15,8	- 5,5	3,8	- 2,0
324	Mach. food, chem. ind.	15,8	8,8	19,0	- 7,0	2,8	0,4	8,3	43,0	19,7	47,3	0,9	70,3	4,8	37,3	3,7
347	Lighting	17,3	5,7	13,0	-8,3	4,4	1,1	121,0	26,4	-1,2	23,6	- 8,8	59,5	-11,0	25,9	-21,0
362	Rolling stock	6,8	6,0	9,6	8,6	3,1	0,2	12,3	38,4	- 85,9	31,8	-61,9	61,0	9,5	25,3	- 31,0
416	Grain milling416	5,9	-12,1	5,3	- 14,9	1,0	1,8	439,1	4,6	2,2	7,3	-0,5	15,0	3,5	4,3	0,4
417	Pasta	24,7	- 31,2	4,8	- 3,9	22,5	0,3	81,4	102,9	- 505,4	16,9	- 58,8	0,9	0,4	1,9	-2,2
427	Brewing & malting	20,2	3,9	6,3	-7,4	13,2	0,2	56,8	120,6	- 38,6	24,5	-41,9	1,1	-0,7	2,3	- 1,4
428	Water, soft drinks	72,9	- 530,3	7,0	3,6	0,3	0,2	80,3	89,4	-1 431,7	35,2	7,4	0,9	0,8	2,6	1,5
	Total industry	95,8	34,8	100,0		1,7	1,7	100,0	95,0	29,6	100,0		28,8	1,7	30,9	9,4

Note: Variation: for the Eurostat data, the variation constitutes the difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982; in the case of National accounts data (INE), the most recent period constitutes the average for the years 1985 and 1986.

Source: Eurostat file EC 36; 1 National accounts.

depends, according to the sectoral experts, on a profound restructuring.

Table 7 tells us that these sectors, together with the manmade fibres sector, which is also protected, are recording a falling coverage ratio. The marked growth in Community demand noted during the period of analysis for the chemical products sector, the intra-Community exports of which account for 3,2 times the extra-Community exports, partly explains the significant increase in export levels (+10,6%)in this sector.

The beer and mineral waters sector may be considered as being non-protected in Portugal. It should be noted that the import penetration and export rates recorded by the Community as a whole are also very low. This situation could reflect the 'protectionist' effects of the technical regulations of the other Member States. In the beer sector, activities are concentrated almost totally in two public companies which are in the process of being reprivatized and which show indicators of a good performance. The bottled spa water sector has experienced major restructuring over recent years involving foreign investments.

2. Sectors integrated into international trade

The import penetration rates in these sectors are already high, although in the case of glass and rolling stock they are protected by tariff barriers and public procurement respectively.

In the case of rolling stock, activities have slowed down because the public authorities have not made any significant purchases in this field. The high extra-Community export rate recorded as an average for the years 1986 and 1987 does not guarantee that this sector is benefiting from the opening up of Community public-procurement markets, given the low relative specialization (production SI = 12,3).

The tariff protection in the glass and glasswear sector essentially concerns products manufactured according to the floating process where, in order to allow economies of scale, minimum production must be equal to the national market. Today, this sector seems to have already attained a competitively strong position. After the opening up of the Spanish market when it joined the EC, this country's share in Portuguese exports has risen sharply (between 1985 and 1987 it rose from 5 % to 35 %), Portugal showing a clear surplus in its trade with Spain.

Group 4: Very low competitiveness (-4)

The industrial activities included in the 19 sectors of this group are considered as having a very low competitiveness. All the indicators considered in this classification show negative values (Graph 1).

Except for basic chemical products (251), telecommunications and electronic equipment (344/345), all the sectors have a very low share in the Portuguese industrial structure (these 17 sectors account for 9,1% and 10,2% respectively in terms of employment and value added).

This body of sectors is characterized, in general, by high import penetration rates, and also, in some cases, by high export rates (Graph 4). In most cases these are what are known as incomplete sectors: as national demand only covers a limited number of segments, total sector demand is mainly met through imports. Also, it should be pointed out that the strategy of certain of these productive segments tends to be oriented towards exports, notably in the sectors of office equipment, electronic equipment, and motor vehicles and parts, which present a high level of intra-sectoral specialization.

Other segments are more oriented to the national market, notably those which manufacture finished products, as is the case, for example, of domestic-type electrical appliances and motorcycles and bicycles.

The segmentation of these sectors implies, in our opinion, that the evaluation of the competitiveness of national production should be assessed in dynamic terms.

Table 12

The weak points of Portuguese industry

Group 4: Global score = -4

NACE	Sector			Intra EU	R 10 trade			Prod.				Total	trade			
code		Cove	rage io	Bal	assa SI	Intra/e 1986 -	xt. ind. + 1987	SI ¹ (1985) EUR 12	Cove	rage	Bal	assa SI	Per	netr. ite ¹	Ex	port ite ¹
		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Import.	Export.		Value 1986 + 1987	Varia.	Value 1986 + 1987	Varia.	Value 1985 + 1986	Varia.	Value 1985 + 1986	Varia.
251	Pagic ind chame	27.5	11.2	20.7	- 16.6	10	1.2	90.0	22.1	12.9	40.6	-0.0	47.2	- 12.2	26.2	1.2
257	Dase inc. citeris.	27,5	0.6	20,7	- 10,0	2.2	0.7	64.9	33,1	13,0	40,0	-0,9	47,5	- 13,2	20,5	-1,2
321	Agric machines	0.5	9,0	1.2	- 20,9	3.2	0,7	31.0	40,0	-43	4.1	- 15.2	63.4	- 2,5	10.7	- 1,2
322	Other manuf	18.3	16.5	96	3.6	17	1.0	21.6	23.3	16.1	16.9	36	73.6	1.9	40.1	21.8
323	Textile machinery	8.9	3.3	29.4	- 30.7	2.3	1.9	29.7	9.5	23	29.9	- 10.9	91.1	1.8	52.8	19.0
325	Plant for mines, etc.	5.5	4.4	4.9	0.6	1.7	0.7	7.5	8.9	5.4	9.4	1.9	97.3	7.7	79.0	53.3
328	Other machinery	8.0	5.0	7.1	-1.5	2.2	0.6	26.3	14.9	8.3	15.7	4.1	62.5	- 10.6	25.2	5.0
330	Office & data proc. ma.	23.7	- 70.2	7.7	- 77.4	1.4	1.1	25.2	26.0	-43.2	22.3	- 66.5	101.6	0.8	103.9	2.8
342	Electric. equipment	50,2	9,7	38,3	- 79,1	3,0	2,9	14,6	50,6	10,9	47,7	- 16,7	58,0	-1,9	21,2	4,0
343	Elect. appliances	23,5	5,2	14,3	- 26,5	1,9	1,1	85,8	28,7	12,2	27,2	-4,9	11,3	0,4	8,2	-13,0
344/5	Electron., telecommun.	82,5	14,4	44,5	- 127,0	1,4	6,2	60,7	55,5	-0,5	69,0	- 37,9	79,3	23,6	75,8	26,2
346	Domestic-type el. app.	10,3	6,7	10,3	2,7	2,9	0,6	51,5	20,2	14,5	30,3	19,7	57,6	17,4	32,9	20,4
351	Motor vehicles	67,0	42,7	35,2	-13,6	1,7	3,5	42,0	54,8	39,9	41,4	8,4	42,4	21,3	23,7	9,5
353	Mot. veh. parts & acc.	26,9	14,8	28,3	12,5	0,8	1,7	71,9	19,1	6,3	44,8	32,0	99,5	5,0	98,8	50,5
363	Motorcycles, bicycles	30,6	- 22,3	23,1	- 30,0	2,7	1,4	81,9	38,5	- 29,4	65,0	6,0	38,4	20,9	33,6	16,3
371	Meas. & pres. instr.	5,6	4,2	4,1	0,3	2,7	0,4	23,0	13,7	7,8	13,4	2,2	68,0	- 19,6	24,9	-0,2
372	Medical equip.	25,7	- 1,0	16,2	- 42,4	1,7	1,5	27,9	27,2	2,6	29,9	-20,8	73,6	-14,3	41,1	- 19,7
421	Cocoa	0,8	- 18,6	0,3	-1,4	2,0	0,1	22,5	10,1	-9,9	6,0	-4,3	20,3	5,1	5,9	-0,1
481	Rubber products	19,5	10,8	14,8	1,8	2,5	0,9	54,8	28,9	12,1	30,4	8,1	38,9	4,6	20,8	5,2
	Total industry	95,8	34,8	100,0	_	1,7	1,7	100,0	95,0	29,6	100,0		28,8	1,7	30,9	9,4

Note: Variation: for the Eurostat data, the variation constitutes the difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982; in the case of National accounts data (INE), the most recent period constitutes the average for the years 1985 and 1986.

Source : Eurostat file EC 36; 1 National accounts.

From Table 12 we can see first of all that the development of intra-Community coverage ratios is positive in virtually every sector. The contrasting evolution of the Balassa SI shows, however, a fall in the degree of specialization of these sectors in terms of exports.

The strong negative variation in the coverage ratio in the cocoa, chocolate and sugar confectionery, motorcycles and bicycles and office machinery sectors confirms the vulnerability of these sectors, aggravated by the existence of tariff barriers. In the case of office machinery, it must be borne in mind that during the period analysed national demand for this type of finished product increased sharply and was met by imports as national production was non-existent.

The manufacture of electrical apparatus is a closed sector where tariff protection has succeeded in keeping import penetration rates at a low level and where export rates are falling strongly. Basic industrial chemicals are a similar case where the strong positive development of Community demand has not affected exports.

In the case of motor vehicles, the strengthening of foreign investment (especially Community) oriented towards exports, has allowed coverage ratios to increase despite the growing importance of imports.

In the majority of cases, taking into account the technological complexity of these sectors, the growth of Portuguese industry will depend on the national capacity for diversification and, above all, on the intensification of industrial cooperation and foreign investment strategies in Portugal. This second factor will further reinforce present trends towards export specialization.

4. Reactions of Portuguese companies to the internal market

An evaluation of the impact of the completion of the internal market based on the analysis of the competitive position of the sectors must take due account of strategies already decided upon or in the process of being adopted.

On the basis of the classification of the sectors presented we will now endeavour to describe the principle types of strategic reactions which characterize Portuguese industry in the run up to 1993.

Group 1: Very high competitiveness

The economic agents which operate in the traditional industries are aware of the fact that their specialization must no longer be based on low wage costs given the increased opening up to third markets.

Strategic orientation aims at the development of factors independent of the costs of competitiveness, such as quality, design and even the creation of commercial brands. The vocational training of managers, market studies and the modernization of equipment are the principal channels for recent investment in these sectors.

In the majority of cases, the marketing networks are neither used nor controlled by the producing companies, a situation which is a handicap in a strategy of upgrading designed to win new segments of a market. The adoption of this overall strategy consequently implies major efforts in the field of international marketing while trying to develop relationships of cooperation with Community trading partners.

In the ready-made clothing sector, existing relationships of cooperation have to date been developed at the subcontracting level. Recent foreign Community investment has been largely in the form of setting up marketing offices responsible for handling orders. This type of 'customized' work will, in the short term, underpin a large part of activity in this sector, while the disparity of wage costs remains an advantage and short delivery times are respected. It must, however, be stressed that at sectoral level, this activity must form part of a longer term strategy with the objective of progressively developing 'in house' activities of product design, development and marketing.

In the footwear sector, the strategy adopted is also based upon upgrading quality, seeking to manufacture top quality products where there is no competition from the newly industrialized countries. Recent investments are oriented towards the adoption of computerized production systems which allow the importance of labour costs to be reduced while significantly improving quality and productivity. This strategic orientation is accompanied by efforts at market diversification (notably the United States, Canada, Japan, Germany and Spain).

Groups 2 and 3: Average/low competitiveness

The sectors included in these groups present a certain industrial tradition although growth has been very modest. It should be borne in mind that in the majority of these sectors the export market has not been considered as a fundamental strategic objective.

The activities of the cereal-based products sector (grain milling, bread, biscuits, spaghetti and macaroni, etc.) are characterized by intervention on the part of the public authorities with a view to fulfilling social objectives. The progressive liberalization (including the removal of tariff barriers) is already bringing an increase in import penetration rates. The surplus labour, the low commercial exploitation and, above all, a production structure ill-suited to modern technology, combine to make extensive restructuring vital for this sector. The principal companies have come to a mutual agreement to join forces in effecting such a restructuring.

As regards the metal goods sector for example, it is evident that certain segments are adopting strategies aimed at the penetration of the Community market. This is true of metal office furniture where we have seen a number of SMEs involved in merger and cooperation operations within a common marketing network. This strategy extends to the control of a number of foreign marketing agencies, particularly in Spain. Another example is the manufacture of agricultural tools, a sector which includes companies exporting to extra-Community markets. The decision to strengthen their presence within the Community market has also involved the control of local agents responsible for marketing and after-sales service.

In the field of mineral waters, the geographical distance between Portugal and the centre of the European Community provides a form of natural protection against the penetration of imports of products with high transport costs. It is in this way that the Community presence in this sector has resulted in foreign investments (participation of Vittel in a Portuguese company). But, in addition, the strong development of the distribution networks in Europe and Portugal has stimulated the expansion of this sector.

Group 4: Very low competitiveness

As we pointed out in Chapter 3, three predominant characteristics can be detected within this group of sectors: a sizeable technological content, a significant presence of foreign investment and the incomplete nature of sectoral activity in Portugal.

In those sectors where integrated subsidiaries predominate, foreign companies are active in the area of components reexported to the parent company; this explains the incomplete nature of the activity of these sectors.

Foreign subsidiaries are present above all in export sectors: motor vehicle construction, office equipment, telecommunications and electronics. In these cases, the strategy adopted by external centres of decision-making takes account of the advantages offered by Portugal which continue to attract foreign investments. In the period 1986/88, the annual variation recorded in industry was 116 %. In this context, there is a strengthening of the foreign presence in motor vehicle construction: Renault, Fiat, Ford (approximately ECU 110 million) and planned establishment of the Japanese companies of Toyota (ECU 340 million) and Daihatsu (ECU 55 million).

Another example is that of agricultural tractors, where national production amounts only to the assembly of a few units. Very recently, the Finnish Group Valmet chose Portugal as the site to set up an industrial company (with a 74 % shareholding in the capital). During an initial stage the project is aimed at the national market, and subsequently intra-Community export.

In the telecommunications sector, the companies with a foreign participation-Alcatel (100%) and Siemens (60 %)—produce essentially for the national market, where the public sector accounts for a considerable share due to the recent order from the digital communications network. The terminal equipment market which was formerly protected has been almost completely open to international competition since 1986. It should be stressed that domestic companies have succeeded in keeping pace with technological developments in this industry while guaranteeing a participation in the manufacture of the digital network. Faced with the completion of the internal market, this group of companies is orientating towards diversification in the fields of telecommunications, electronics and informatics, based on a more flexible and more specialized production. The establishment of industrial cooperation agreements with Community partners is a fundamental element in this strategy.

Another type of strategy is adopted in the textile machines sector. This is a sector which is considered to be of strategic importance given the importance of the textiles industry, the future development of which is affected by the use of equipment which is not always the best suited to new requirements. Applied research activities developed by the public R&D institutions in cooperation with industrial companies are an important element in the strategy adopted which seeks to improve existing technology while ensuring a high level of competitiveness.

Conclusion

Firstly, it should be stressed that this exercise seeking to measure the impact of 1992 on Portuguese industry is particularly delicate to the extent that the mechanisms induced by the completion of the internal market apply during a transitional period which follows accession to the EC. This is also why sectors which are still protected by tariff barriers have been included in the list of sensitive Portuguese sectors. Taken overall, the results of the competitiveness analysis are not positive for those sectors of Portuguese industry identified as being sensitive even if the labour-intensive sectors are competitive. In fact, the position of the strong point sectors has deteriorated both on the Community market and at world level due, in particular, to increased competition from the NICs. Also, the least competitive sectors are those which present a greater potential for growth. These sectors can only develop if technological cooperation agreements can be concluded or if efficient foreign companies set up in Portugal.

Despite this relatively negative overall assessment, the expectations for Portuguese economic agents are favourable. The restructuring, modernization and vocational training drives undertaken since 1986 clearly demonstrate that this is so. This development, made possible through access to the Community structural Funds, also indicates that major adjustments must be made to prepare Portuguese industry for 1992.

Although the internal market provides opportunities for Portuguese industry, it also presents a danger. In fact, Portuguese industry still shows major structural imbalances in particular as regards technological dependency, low specialization of human resources and the low rationalization of management, above all in the SMEs. The infrastructures more directly linked to the activities of firms also continue to constitute a 'barrier' to industrial development.

The basic question is to know whether both national and Community efforts to reduce this 'distance' between Portugal and the average for the Community countries will be brought to bear in time to allow a net positive impact of the completion of the internal market on Portuguese industry.

Annex

Combination of indicators of static and dynamic competitiveness

		Group 4 (Stat. comp. $= -4$)	(S	Group 3 tat. comp. $= -3, -2$)	(Sta	Group 2 it. comp. = $-1, 0, +1$)	(Stat	Group 1 . comp. = $+2, +3, +4$)
	NACE code	Sector	NACE code	Sector	NACE code	Sector	NACE code	Sector
Variation Intra X/M	330 363	Office machinery Motorcycles, bicycles	247 256	Glass Industrial agricultural chemical products	316 361	Metal goods Shipbuilding	415 425	Fish & seafood Wines, champagne
< -5%	421	Chocolate, etc.	416 417 428	Grain milling Spaghetti, etc. Water, soft drinks	431/2 438	Cotton wool text. Carpets	436 439 451 453 455	Knitwear industry Miscellaneous textiles Footwear Ready-made clothing Household textiles
Variation Intra X/M −5%≤X≤ +5%	321 323 325 328 371 372	Agricultural machinery Textile machinery Plant Other machinery Measuring & precision instru- ments Medical apparatus	260 427	Man-made fibres Beer	352 419	Vehicle bodies Bread, biscuits		
Variation	344/5	Electr. Telec.	324	Mach. food & chemical in-	315	Boilermaking	248	Ceramics
Intra X/M > +5%	251 257 322 342 343 346 351 353 481	Basic industrial chemicals Pharmaceuticals Machine tools Electric machinery Electrical appliances Domestic electrical Motor vehicles Motor vehicle parts Rubber products	347 362	usay Lighting Rolling stock			341	Wires, cables

Variation: Difference between the average for the years 1986 and 1987 and the average for the years 1980 to 1982. The groups were defined according to the static competitiveness scores attributed. Source: Eurostat EC 36.

United Kingdom

Department of Trade and Industry

Contents

1.	The sensitive industries in the United Kingdom	327
2.	Performance of the United Kingdom in the industries most affected	328
2.1.	Static competitiveness of UK suppliers	329
2.2.	Historical evolution of competitiveness of UK suppliers	331
3.	Dynamic adjustments	333
3.1.	Mergers and acquisitions	333
3.2.	Direct investment	333
3.3.	Companies' strategic response	334
3.3.1.	Railway transport equipment	336
3.3.2.	Heavy electrical equipment	336
3.3.3.	Telecommunications equipment	337
3.3.4.	Computers	338
	Conclusions	339

List of tables

1.	Relative importance of sensitive sectors	327
2.	Relative importance of sensitive sectors in the United Kingdom	327
3.	Relative importance of sensitive industries according to trade performance	329
4.	Position of industries likely to be affected by the single market	330
5.	Indicators of dynamic performance in the sensitive sectors	332
6.	Comparison of static and dynamic indicators of performance	334
7.	Growth in demand in industries likely to be most affected by the single market	335

Graph

1. Comparison of static and dynamic indicators in the United Kingdom

333

1. The sensitive industries in the United Kingdom

The selection of industries from the point of view of UK firms was made after consultation within the Department of Trade and Industry. It is similar to that for the Community as a whole and involves 39 industries producing about 50 % of value added in manufacturing and accounting for half of manufacturing employment. The largest industry omitted from the UK list is aerospace since it is considered that the industry is already organized on a European-wide basis. Other industries omitted include spaghetti and wine and champagne production where data are not collected separately for the UK. Industries included in the UK list but not in that made for Europe as a whole are other machinery (NACE 328), measuring equipment (371) and optical instruments (373), which are considered to have moderate nontariff barriers. Lack of separate data meant that the production of motor vehicles and their bodies, engines and accessories were treated as one industry. The characteristics of the industries are shown in Tables 1 and 2 and are discussed in the remainder of this section.

Group 1: High-technology industries largely supplying the public sector

This group of industries comprises computers and office equipment, telecommunications and medical and surgical equipment and accounts for 6,8% of manufacturing employment and 6,9% of value added. It has experienced the fastest rate of growth of UK demand of the four groups between 1982 and 1987. The UK market is relatively open to trade (intra-EC import penetration ratio of 28%) while import penetration from outside the Community is higher than from within the Community, unlike the other groups. Price differences are the lowest of the four groups.

The impact of the opening of the Community market is expected to result in European firms taking the opportunity to lower their costs by exploiting unutilized economies of scale. In the case of telecommunications equipment, for instance, firms are very concerned to spread the very high level of necessary research and development expenditure over higher sales volumes. European markets have been

Table 1

Relative importance of sensitive sectors

Importance of non-tariff barriers	Share in value added in manufacturing % (1987)	Share in manufacturing employment % (1988)	Ratio of intra-EC to extra-EC imports (1987)	Intra-EC import penetration (1987)
High	19,9	14,51	0,73	16,7
Average	32,6	35,5	1,31	29,2

Excludes boilermaking for which no employment data are availa

Source: Department of Trade and Industry.

Table 2

Relative importance of sensitive sectors in the United Kingdom

Group	Share in value added in manufacturing % (1987)	Share in manufacturing employment % (1988)	Ratio of intra-EC to extra-EC imports (1987)	Intra-EC import penetration ratio % (1987)
1 High-tech public-procurement markets	6,9	6,8	0,57	27,9
2 Traditional public-procurement markets and regulated markets	8,7	3,61	2,25	5,5
3 Sectors facing competition from NICs	4,3	4,2	1,31	14,9
4 Sectors with moderate NTBs	32,6	35,5	1,31	29,2
Total of sensitive sectors	52,5	50,0	1,12	25,3
- Total manufacturing	100,0	100,0	0,95	19,1

¹ Excluding boilermaking for which no employment data are available.

Source: Department of Trade and Industry.

segmented by the purchasing behaviour of the public telephone authorities. In the case of the UK the telecommunications market has of course already been opened up to foreign suppliers as a result of privatization and deregulation ahead of moves towards the single European market. Supplier industries in the Community are now engaged in strengthening cross-border links.

Group 2: Traditional industries supplying the public sector and the brewing and soft drinks industries

This group includes industries such as railway equipment, power engineering and pharmaceuticals as well as the brewing and soft drinks industries, amounting to 3,6 % of manufacturing employment (excluding boilermaking) and 8,7 % of value added. Demand in the UK fell between 1982 and 1987 as a result mainly of declining markets in boilermaking and railway equipment. Imports into the UK market have been at a very low level both from within and outside the Community (intra-EC import penetration ratio of 5,5 % and negligible penetration from outside the Community). As a result of the low volumes of trade consequent on the segmentation of markets it would be unwise to place too much reliance on the trade measures for these industries.

Price dispersion is much higher in this group than in any of the others. In the case of the three industries supplying the public sector, this segmentation is no doubt due largely to the buying practices of public authorities. In the UK the electricity supply industry is to be privatized and is likely to take a more commercial view of its purchasing while British Rail indicates that it now looks to a range of suppliers, which include overseas firms. The Cecchini Report also pointed to low levels of capacity utilization in the power engineering and railway equipment supply sectors in both the UK and the Community and these industries are now experiencing major structural changes as a result of crossborder links.

Group 3: Shipbuilding, electrical equipment and chocolate and sugar confectionery sectors

This group includes shipbuilding, insulated wires and cables, electrical plant and machinery and the chocolate and sugar confectionery sector, comprising 4,2% of manufacturing employment and 4,3% of value added. UK demand growth between 1982 and 1987 was about 15% (excluding shipbuilding) in real terms. Intra-EC import penetration was 15% in 1987, while non-EC import penetration was also

relatively low at 11 %. In the case of the shipbuilding industry the low volume of trade means that the results on performance should be treated with caution. There is also a significant element of defence procurement in the sector and this will be unaffected by the single European market.

Group 4: Industrial materials and machinery, motor vehicles and certain consumer goods

This group of 27 industries comprises a wide range of industrial machinery, motor vehicles, industrial materials, and some consumer goods sectors. The industries account in total for 36 % of manufacturing employment and 33 % of value added. These sectors are likely to be less affected than the first three groups by the lifting of non-tariff barriers to trade. There is already considerable intra-Community trade in these sectors but there remain technical and administrative barriers which increase costs. Demand growth was the second highest of the four groups. In some industries in Group 4 the effects on intra-EC trade of the single European market could be rather less important than changes in the Community's future external trade regime. Notable among these are motor vehicles, textiles and clothing.

2. Performance of the United Kingdom in the industries most affected

The purpose of this stage is to assess the recent performance of the sensitive industries using a number of trade and production measures. It is first necessary to set out developments in the UK economy and the manufacturing sector in particular in the 1980s. Following the recession of 1980-81 the UK has experienced eight successive years of sustained growth of GDP averaging over 3 % a year. As a result the UK economy has grown faster than all the major Community countries during the 1980s. This contrasts with the previous two decades when the UK was at the bottom of this league. The UK has also since 1981 broadly maintained its share of the value of world trade in manufactures after decades of decline.

In manufacturing alone productivity has grown faster in the UK in the 1980s than in any other major country. In the 1960s and 1970s the UK had been the worst performer among the Group of Seven on this measure. Manufacturing investment increased strongly in 1987, and especially in 1988. (Total investment has also grown at the second highest rate of any Community member between 1981 and 1987.) Whereas for much of the post-war period fixed investment

showed a low return, profitability in manufacturing has increased in every year since 1981 and in 1988 stood higher than in any year since 1969.

After setting out recent developments in the manufacturing sector and the economy as a whole, it is now necessary to assess the relative performance of the sensitive industries as an indication of structural changes which might take place in the manufacturing sector as a result of the single European market.

A number of caveats should be noted at the outset. First, the measures used are based on past behaviour. Such behaviour could change as a result of the competitive impact of the single European market as well as developments in the UK economy which are having similar effects, for example privatization and deregulation. As already indicated major changes are already under way in some sectors as a result of cross-border joint ventures and Japanese investment. Second, this paper is concerned with the relative performance of UK manufacturing industries alone. A performance below average may not necessarily imply a fall in output after completion of the single European market. Also, a more complete view of the prospects for the relative performance of these industries would, of course, need to take into account trade in other goods and services, since the measures will understate the degree of structural change if resources move out of the manufacturing sector into other areas of comparative advantage, and overstate it if the reverse process takes place. Finally, even if the level of non-tariff barriers in a group of industries is similar, the response of trade flows to their removal would be likely to differ.

2.1. Static competitiveness of UK suppliers

The results of the analysis of static competitiveness are shown in Table 4. For the last three measures a score was

Table 3

Relative importance of sensitive industries according to trade performance¹

	Number of industries	% of manufacturing value added (1987)	% of manufacturing employment (1988)
Below average	16	20,3	2,22
Average performer	8	10,0	6,8
Above average	15	21,2	21,0

¹ Trade performance assessed according to score achieved in Table 4

² No data are available for sector 315 boilermaking.

given to each industry. If the ratio on a particular measure was above 1,1 the industry achieved a score of 1, for a ratio between 0,9 and 1,1 the score was zero, while a ratio of less than 0,9 resulted in a score of -1. The scores for each measure were then added together and an overall score calculated. Those industries scoring a positive number are considered relatively strong on this measure, while those with a negative number are classified as below-average performers. Industries with a total score of zero are placed in the average category.

The use of the ratio of intra-EC exports to intra-EC imports as an indicator of future structural change presents difficulties. It is influenced to an important degree by the level of world demand relative to domestic demand. Furthermore, in a period when domestic demand has increased faster in the UK than in the rest of the Community, the ratio will decline, other things being equal. Given that the ratio is to be used as an indicator of future structural changes within manufacturing, it would be preferable to examine performance around that for manufacturing as a whole as indeed is done with the other measures in this table. Even the normalized measure suffers from its sensitivity to the pattern of non-tariff barriers in intra-EC trade. The ratio of intra-EC exports to intra-EC imports over the 1985-87 period was 0,66. In order to normalize this ratio in a similar way to the relative measures of performance, industries with an intra-EC export-import ratio of above 0,72 are classified as aboveaverage (score of 1) those with a ratio between 0,60 and 0,72 as average (score of 0) and those below 0,60 as belowaverage performers (score of -1). This corresponds to the classification of the range around a ratio of 1 on the unnormalized measure.

Hence, the UK classification is not the same as that presented in the other studies in terms of the first indicators (intra-EC export-import ratio). In the other studies a sector is considered as having above-average performance when the intra-EC export-import ratio is above 1 (0,72 here) and as having below-average performance when the intra exportimport ratio is below 1 (0,60 here). This modification has an impact, for example, on the classification of sectors such as 326, 345, 361, 373, which are not considered as 'aboveaverage sectors' according to the classical definition. For extra-EC trade, the index of specialization is also preferred here to the extra-EC export/import ratio. The results using the four measures of performance are shown in Table 4. Five industries (computers and office equipment, telecommunications equipment, pharmaceuticals, industrial and agricultural chemicals and measuring equipment) achieve a total score of 4 through a positive score on each measure. All the industries in the first group (high-technology goods supplied mainly to the public sector) achieve high positive

Position of industries likely to be affected by the single market¹

NACE code	Group	Sector	Intra-EC export/import ratio 1985-87	Intra-EC SI 1985-87	Extra-EC SI 1985-87	Production specialization 1985	Score					
			Above-average performer	s								
330	1	Computers and office equipment	1.11	2.16	1.58	1.32	4					
344	î	Telecommunications equipment	1,16	2.28	1.51	1.64	4					
372	1	Medical and surgical equipment	0.94	1.41	1.27	1.05	3					
257	2	Pharmaceuticals	1.23	1.85	1.42	1.12	4					
362	2	Railway equipment	1.09	0.62	1.12	1.83	2					
361	3	Shinbuilding	0.78	1 31	0.76	1.93	2					
256	4	Industrial & agricultural chemicals	1.09	1.36	1.24	1.64	4					
325	4	Mining and related plant	0.62	1 23	1.16	1.01	2					
326	4	Transmission equipment	0.73	1.06	0,90	0.93	ĩ					
328	4	Other machinery	0,75	1,00	1 15	1 32	3					
345	4	Other electronic equipment	0.70	1 27	1,15	1,01	1					
371	1	Measuring equipment	0,70	1 40	1.44	2,23	1					
373	4	Ontical instruments	0,55	1,49	0.03	0.95	2					
401	4	Jowellery	3 60	2 20	1 28	0,33	2					
491	4	Town comes and sports goods	1.01	1.59	1,20	0,55	2					
474	4	Toys, games and sports goods	1,01	1,50	1,07	0,55	1					
	Average performers											
341	3	Insulated wires and cables	0,48	0,79	1,29	3,29	0					
342	3	Electrical plant and machinery	0,64	0,95	1,15	0,53	0					
421	3	Chocolate and sugar confectionery	0,44	0,80	1,42	1,11	0					
248	4	Ceramics	1,16	0,87	1,01	0,91	0					
251	4	Basic industrial chemicals	0,83	1,06	0,82	0,96	0					
321	4	Agricultural machinery	0,57	1,13	1,43	0,72	0					
431	4	Woollen goods	0,66	0,75	1,14	0,98	0					
455	4	Household textiles	0,90	0,69	0,63	2,31	0					
			Below-average performer	s								
315	2	Boilermaking	0.59	0.84	0.65	0.90	-3					
427	2	Brewing	0.41	0.83	0.76	1.58	-2					
428	2	Soft drinks	0.23	0.33	0.51	1.16	-2					
247	4	Glass	0.37	0.60	0.76	0.73	-4					
322	4	Machine tools	0.56	0.91	0.80	0.88	- 3					
323	4	Textile machinery	0.46	0.75	0.53	0.41	-4					
324	4	Food processing & chemical mach.	0.46	0.85	0.70	0.99	- 3					
327	4	Wood, paper and leather machinery	0.43	0.97	0.81	0.94	-2					
346	4	Domestic electrical appliances	0.21	0.43	0.39	0.85	$-\bar{4}$					
347	4	Lighting	0.41	0.66	0.68	1,41	-2					
350	4	Motor vehicles	0.31	0.60	0.68	0.87	-4					
432	4	Cotton goods	0.26	0.49	0.68	0.46	-4					
438	4	Carpets	0.30	0.58	0.93	1.22	- 1					
451	4	Footwear	0.25	0.33	0.19	0.62	-4					
453	4	Clothing	0.69	0.80	0.75	0.83	- 3					
481	4	Rubber goods	0,82	0,98	0,88	0,88	- 1					

Notes: Intra-EC export/import ratio only Ratio below 0,60 = -1Ratio between 0,60 and 0,72 = 0Ratio above 0,72 = 1

Other measures Ratio below 0.90 = -1Ratio between 0.90 and 1.10 = 0Ratio above 1.10 = 1

SI = Balassa specialization index Extra-EC SI = $\frac{UK}{UK}$ share of Community exports of industry i to rest of world UK share of Community exports of manufactures to rest of world

Production specialization = Share of Community production of industry i Share of Community manufacturing production

¹ The classification into three groups (above average, average and below average) is made using a composite score of 0 as a threshold.

scores. Nine industries in Group 4 have positive scores, although these are mainly in the mechanical and precision engineering sectors and few consumer goods industries score highly. Among the 16 industries performing below average six (glass, textile machinery, domestic electrical appliances, motor vehicles, cotton goods and footwear) have a negative score on all the measures. Three of the five industries in Group 2 are in this category with the remainder in Group 4. In the latter group the industries comprise motor vehicles, other parts of the engineering sector and the simple consumer goods.

2.2. Historical evolution of competitiveness of UK suppliers

Table 5 provides indicators of the historical evolution of performance in the sensitive sectors. Mainly reflecting the faster growth in demand in the UK than in the rest of the EC, the UK export/import ratio declined over the 1982-87 period. For the reasons set out before, the change in performance of individual industries was normalized around the change for manufacturing as a whole. The UK's export/ import ratio for trade in manufactures with the Community was 0,66 in the 1985-87 period compared with 0,78 between 1982 and 1984, a decline of 16 %. Any industry with a fall of less than 12 % on this ratio achieves a positive score, while an industry with a fall of more than 20 % receives a negative score. For the Balassa trade specialization indices a decline of more than 5 % in the ratio receives a negative score, while an increase of more than 5 % achieves a positive score. Thus, in this case also, the threshold is different for the UK compared with the other countries studies for the intra EC export/import ratio. For the Balassa trade specialization indices, the thresholds are the same.

The results of this analysis are shown in Table 5. Sixteen industries achieve a positive score and four (basic industrial chemicals, computers and office equipment, telecommunications equipment and brewing) have a positive score on all measures. As in the case of the static indicators, all the industries in Group 1 achieve a positive score, while on this measure all the industries in Group 2 also achieve such a score. In contrast, seven industries (textile machinery, other machinery, domestic electrical appliances, optical instruments, cotton goods, clothing and rubber goods) show a negative score on all three measures of dynamic competitiveness. All but two of the 20 industries with a negative score on this measure are in Group 4 (industries with moderate barriers) and comprise mainly the mechanical engineering, motor vehicles and simpler consumer goods sectors.

Tables 5 and 6 in fact show a fairly close relationship between the performance of different industries on the static and dynamic measures. Ten of the 15 industries with a positive score on the measures of static competitiveness also have a positive score on the dynamic measures. These include the high-technology industries in Group 1 and pharmaceuticals. Similarly 12 of the 16 industries with negative scores on the static measures also have negative scores on the dynamic measures. These include parts of the mechanical engineering sector, motor vehicles and some textile and clothing sectors. The comparisons of static and dynamic performance are shown in Graph 1.

Table 6 compares static and dynamic measures of performance using the intra-EC export/import ratio alone and is therefore probably of less interest than Graph 1 which covers three measures of performance. It shows 11 industries which have experienced a larger than average decline to a position where they now stand below average on this measure. In contrast there are nine industries which have performed better than average and stand at the higher performing end. Four industries (agricultural machinery, textile machinery, insulated wires and cables and lighting) moved into the group of below-average performers, while two (shipbuilding and railway equipment) moved into the above-average category. However, for the latter two industries the qualifications made earlier with regard to low trade volumes mean that these results should be treated with considerable caution.

A further measure of relative performance is the ability of industries to respond to changes in the level of demand. This involves comparing trade performance in industries with the growth of EC demand in those industries as shown in Table 7. A strong competitive position in expanding industries might be a source of growth, while a weak competitive position in declining industries might be less important. Of course, the growth industries of the early 1980s may not be those of the 1990s.

Table 7 relates growth in demand in the EC in value terms to the UK's trade performance with the Community. The UK has a relatively strong position in five industries representing 12% of both manufacturing employment and value added exhibiting above-average demand growth in value terms in the Community over the 1990-85 period. These are mainly high-technology industries. This compares with seven industries with 4,8 % of manufacturing employment (excluding boilermaking) and 4,3 % of value added in which trade performance is below average and there has been weak demand growth. There are two industries (motor vehicles and soft drinks) with 6,6 % of both manufacturing employment and value added with above-average demand growth and below-average trade performance and two industries comprising 0,7 % of manufacturing employment and 0,3 % of value added with slow demand growth and aboveaverage trade performance.

Indicators of dynamic performance in the sensitive sectors

NACE code	Sector	Intra-EC exports/imports	Intra-EC specialization index	Extra-EC specialization index	Score	
	2 · · · · · · · · · · · · · · · · · · ·	Above-average performe	rs			
248	Ceramics	0.82	1.11	1.03	1	
251	Basic industrial chemicals	0,82	1,11	1,05	3	
256	Industrial & agricultural chemicals	0.92	1,19	1.05	2	
250	Pharmaceuticals	0,98	1,11	1,05	2	
315	Boilermaking	1.03	0.03	1,00	1	
330	Computers and office equipment	1,05	1.16	1,25	2	
342	Electrical plant and machinery	0.80	1,10	1,19	1	
344	Telecommunications equipment	1.02	1,00	1 18	2	
345	Other electronic equipment	0.81	1,12	1,10	5	
361	Shiphuilding	1 50	0.07	1,10	2	
362	Bailway aquinment	1,59	0,97	1,10	2	
302	Madical and surgical againment	2,10	1,50	0,70	1	
127	Proving	0,99	1,15	1,03	2	
42/	Dicwing Soft drinks	1,01	1,29	1,11	3	
420	Soft drinks	0,96	1,20	0,55	1	
491	Jewellery Tous some and sports coods	1,00	1,24	0,91	1	
494	Toys, games and sports goods	0,90	0,99	0,97	1	
		Average performers				
326	Transmission equipment	0,84	1,00	0,96	0	
371	Measuring equipment	0,86	0,96	0,97	0	
451	Footwear	0,89	0,98	0,65	0	
		Below-average performe	rs			
247	Glass	0.64	0.00	1.05	2	
321	Agricultural machinery	0,04	0,90	1,03	-2	
322	Machine tools	0,75	0,99	0,94	- 2	
323	Textile machinery	0,85	0,95	0,97	-1	
324	Food processing and chemical machinery	0,01	0.84	0,77	- 3	
325	Mining and related plant	0,59	0.81	0,97	-2	
327	Wood, paper and leather machinery	0,39	0.96	0,90	- 2	
328	Other machinery	0.71	0.94	0,97	-1	
341	Insulated wires and cables	0.45	0.73	1.28	-1	
346	Domestic electrical appliances	0,73	0,79	0.86	- 3	
347	Lighting	0,75	0.78	0,00	- 3	
350	Motor vehicles	0,65	1.86	0.87	- 1	
373	Optical instruments	0,70	0.82	0.85	-1	
421	Chocolate and sugar confectionery	0,66	0.81	0.05	-2	
431	Woollen goods	0,69	0.85	1.08	- 1	
432	Cotton goods	0.63	0.77	0.87	- 3	
438	Carpets	0.59	0.83	1.03	- 2	
453	Clothing	0.78	0.94	0.85	-3	
455	Household textiles	0.82	0,90	0.98	-1	
481	Rubber goods	0.74	0.94	0.92	-3	
			0,2 1	0,72	5	

Notes: Change in values: average of 1985-87 compared with average of 1982-84 (1982-84 = 1)

Change in values: average of 1985-Export/import value: Value below 0,80 = -1Value between 0,80 and 0,88 = 0Value above 0,88 = 1Specialization index: Value below 0,95 = -1Value below 0,95 = -1Value between 0,95 and 1,05 = 0Value above 1,05 = 1



3. Dynamic adjustments

3.1. Mergers and acquisitions

UK companies have increased their merger and acquisitions activity in the Community in recent years. In 1988 UK companies made 193 acquisitions worth UKL 1,8 billion in the rest of the Community compared with 62 worth nearly UKL 650 million in 1986. In contrast companies in the rest of the Community have increased the number of mergers and acquisitions in the UK from 14 to 30 over the same period, although their value increased from UKL 1,1 billion to UKL 1,3 billion. The trebling of UK companies' mergers and acquisitions activity in the Community may be an indication of UK companies' preparation for the single market, although this is not likely to be the only factor, given the general increase in UK merger and acquisition activity over this period.

3.2. Direct investment

A further measure of closer UK integration with the Community is shown by the increase in net outward direct investment by UK companies. Between 1984 and 1987 this increased from UKL 305 million to UKL 1,6 billion in manufacturing and from a negative figure to nearly UKL 2,2 billion across all sectors in the Community. Since the latest figures for direct investment relate to 1987, the impact of the single European market should probably not be given much weight as a factor behind the increase.

There has also been an increase in net direct investment in the UK from the rest of the Community. The total for all sectors increased from a negative figure in 1984 to UKL 2,9 billion in 1987. Within the manufacturing sector, however, the increase has been small from UKL 219 million to UKL 226 million.

Comparison of static and dynamic indicators of performance

Change in intra-EC export/import ratio			Intra-	-EC export/import ratio (average 1985-87)	port/import ratio (average 1985-87)					
		Less than 0,60		Between 0,60 and 0,72		Above 0,72				
ŝ.	NACE code	Sector	NACE code	Sector	NACE code	Sector				
Fall of 20%	247	Glass	325	Mining and related plant	257	Pharmaceuticals				
or more	321	Agricultural machinery	328	Other machinery	373	Optical instruments				
	323	Textile machinery	431	Woollen goods	481	Rubber goods				
	324	Food processing and chemical machinery	453	Clothing						
	327	Wood, paper and leather machinery								
	341	Insulated wires and cables								
	346	Domestic electrical appliances								
	347	Lighting								
	350	Motor vehicles								
	421	Chocolate and sugar								
		confectionery								
	432	Cotton goods								
	438	Carpets								
Fall of between	322	Machine tools	342	Electrical plant & machinery	248	Ceramics				
12% and 20%			345	Other electronic equip.	326	Transmission equipment				
					371	Measuring equipment				
					455,	Household textiles				
Fall of less than	315	Boilermaking			251	Basic industrial chemicals				
12%	427 428	Brewing Soft drinks			256	Industrial and agricultural chemicals				
	451	Footwear			330	Computers and office				
					344	Telecommunications				
					544	equipment				
					361	Shipbuilding				
					362	Railway equipment				
					372	Medical & surgical equipment				
					491	Jewellery				
					494	Toys, games and sports goods				

Investment from outside the Community in the UK may also become an important factor in improving UK competitiveness in time to meet the challenges and opportunities of the single market. Inward investment is likely to have most effect in improving production and management techniques through the pressure of increased competition from major world players and through their example to other firms. Japanese investment in the UK is believed to have had such an impact. The flow of net Japanese direct investment in the UK exceeded UKL 750 million in 1987 and is likely to increase further. The presence of Nissan and the recent announcements by Toyota and Honda to build car-producing plants suggest a major strengthening of UK car production and probably also of supplying industries. A sign of Japanese firms' confidence in the future of the UK economy is that about 37 % of accumulated direct Japanese investment in the Community as a whole is in the UK, while the figure for investment flows in 1987 and 1988 alone was about 45 %.

3.3. Companies' strategic response

This section describes the strategic response to the single European market of some firms in the rail transport, heavy electrical (turbine generator), telecommunications and com-

Growth in demand in industries likely to be most affected by the single market

Trade performance	Demand growth in the Community (1980-85)												
		Below average		Average		Above average							
	NACE code	Sector	NACE code	Sector	NACE	Sector							
Below average	247	Glass Boilermaking	324	Food processing and chemical machinery	350 428	Motor vehicles Soft drinks							
	322	Machine tools	346	Domestic electrical appliances	420	Soft diffiks							
	323	Textile machinery	347	Lighting									
	327	Wood paper and leather	427	Brewing									
	021	machinery	432	Cotton goods									
	438	Carpets	453	Clothing									
	451	Footwear	481	Rubber goods									
Average	248	Ceramics	342	Electrical plant & machinery	251	Basic industrial chemicals							
			421	Chocolate and sugar confectionery	321 341	Agricultural machinery Insulated wires and cables							
			431	Woollen goods									
			455	Household textiles									
Above average	491	Jewellery	325	Mining & related plant	256	Industrial and agricultural							
	494	Toys, games and sports goods	326	Transmission equipment		chemicals							
			330	Other machinery	257	Pharmaceuticals							
			361	Shipbuilding	330	Computers and office							
			362	Railway equipment		equipment							
			371	Measuring equipment	344	Telecommunications							
			372	Medical & surgical equipment		equipment							
			373	Optical equipment	345	Other electronic equipment							

puter manufacturing industries. They are among those sectors identified by the Commission as likely to be strongly affected by progress towards the single European market and all have been undergoing significant structural changes.

The information in this section was obtained through meetings with the companies concerned during May and June 1989. It therefore reflects the companies' perceptions of the situation at that time. There have been important developments subsequent to the visits, in response both to the single European market and competition in the world market. While the position is considered sector by sector, it needs to be borne in mind that very large companies in these areas are operating across sectors and their strategies will reflect the impact of the single European market on their businesses as a whole. Examples of the changes affecting more than one of the sectors chosen (and others) include, in the UK and France, the merging on a 50/50 basis of the Power Systems Group of GEC and Alsthom, a subsidiary of CGE; and elsewhere, the earlier merger of ASEA (Sweden) and Brown Boveri (Switzerland) to form ABB, followed by the establishment of new links in several Community countries. The latter grouping seems to have acted as a spur to the formation of the GEC-Alsthom partnership. Mention should also be made of a joint bid by GEC and Siemens (Germany) for Plessey affecting the telecommunications equipment producer GPT which Plessey and GEC jointly own, as well as Plessey's wider interests in the electronics field.

It is not easy to separate the influence of the single European market from other factors driving the changes which are now taking place. GEC has said that 'the decision to join GEC businesses with those of Alsthom in related fields ... [involved] many factors; the changing international market situation, the ever-increasing costs of developing and introducing new products in highly competitive markets, moves by competitors presenting greater challenges in world markets, and, of course, the opening up of the European market in 1992'.

3.3.1. Railway transport equipment

The market in the UK as in much of the Community has been highly segmented. Publicly-owned railway systems, as elsewhere, have generally favoured local suppliers and have determined standards. For much of the 1980s demand has been weak and until a few years ago technical progress was slow. The European supply industry is characterized by considerable excess capacity. Reflecting these conditions, much of GEC's output has been exported, concentrating on overseas markets outside Europe and outside the other major equipment-producing areas in North America and Japan.

The situation is now seen to be changing dramatically both in the UK and in the Community. Technical change is now rapid (driven by progress in electronics technology) while other factors such as high-speed cross-border services and the need in the UK to increase capacity and rolling stock, are expected to lead to rising demand. The effect of the public purchasing directive on the extent to which preference is given to local suppliers is likely to vary from country to country. In the UK, railway authorities are seeking tenders from other European and Japanese suppliers and new equipment includes key components from them. Leading figures in a number of European firms have indicated that they believe progress in the direction of open purchasing will not be rapid. Reduction of technical barriers will depend a good deal on authorities basing contracts on performance specifications and leaving the suppliers to design equipment to meet this. The UK has already moved a long way in this direction.

Against this background the European industry is undergoing considerable reorganization reducing the number of major producers, although how much this owes to 1992 is hard to say. It has been suggested that there may eventually be only two European producers—GEC-Alsthom and ABB. In the UK, GEC-Alsthom will include transportation as a major part of its activities, eventually with complete integration of resources. (Alsthom, which claims to be the world's largest producer of railway equipment, has been acquiring firms in other member countries.) Among the smaller firms in the UK, Metro-Cammell (a major supplier to the London Underground) has been absorbed into GEC-Alsthom, while BREL is now 40 % owned by ABB.

Apart from being a step to eliminating spare capacity, these mergers are seen as a means of spreading the increasingly important R&D spending over a greater turnover while at the same time enlarging the technological input in particular fields. The mergers also enhance the scope of companies' output thus tending to give more stability to output as well as enabling them to offer complete packages; they facilitate entry to markets in which the railway authorities continue to favour local suppliers, and they are seen to strengthen the capability of European firms to meet primarily Japanese competition in, at present, third markets. (Mitsubishi has a joint venture with NEI (National Engineering Industries) relating to the supply of electrical equipment for railways.) It has been suggested that over half of the sales of the enlarged companies which arise from restructuring will need to be outside the EC.

3.3.2. Heavy electrical equipment

This section is concerned mainly, though not exclusively, with turbine generators for power stations. The market for turbine generators in the UK has been weak for many years and in the EC generally there is seen to be excess capacity. The market has been highly segmented with the utilities playing a major role in the design/construction process and favouring local suppliers. (The 'industrial' market is probably more open but is relatively small.) Most of GEC's turbine generator business has been for export and little or none of this has been with European countries, especially with the major markets. NEI, too, exports little to other EC countries. Any exports to Europe are mainly those niche products in which there is a technological edge. Output is divided between the UK market and substantial exports mainly to Third World countries.

The public purchasing directive and its consequences have not been central to GEC's turbine generator business' strategic thinking but the completion of the Alsthom merger will strengthen the group's ability to respond to this. Turbine generator technology is regarded as being at the mature stage and markets in other member countries are, with a few exceptions, seen as likely to be weak for some time to come.

The close links which have existed between utilities and a few domestic suppliers will take time to erode and although there are not fundamental differences in standards for turbine generators, (there are significant differences, for example, in switchgear) distinctive codes, standards and practices applied by individual utilities would add significantly to the cost of getting business for foreign firms. The lack of a track record to meet particular local requirements could add to difficulties. The consequent uncertainty about the outcome could discourage non-local firms making expensive bids for contracts. This points to establishing links with local manufacturing firms. In general this view seems to be shared by NEI although it suggests that such constraints may be weaker in the switchgear field which has seen significant changes in technology. Nevertheless in this, as in some other fields, it stresses the need for partners.

The outlook in the UK is seen by both companies to be very different from that in most of the rest of the Community. This is not because of the single European market legislation but rather is the result of impending privatization. The new privately-owned utilities are expected to be prepared to take a more commercial, and possibly more short-term, view of purchasing and almost certainly look more widely for suppliers. The UK, with significant requirements for new capacity, will be one of the more buoyant markets in the EC.

From the point of view of GEC's turbine generator business, their merger with Alsthom should be seen in a wider, world market, context. As a result of mergers, the number of European players in this field has been shrinking and it is currently dominated by two large groups, GEC-Alsthom and ABB. GEC is already a very successful exporter of turbine generators and in recent years has generally ranked second to Mitsubishi in sales terms. Its merger with Alsthom will take the joint company closer to the Japanese leaders. It will offer opportunities to rationalize R&D, design (both employing scarce engineering resources) and production, and enable GEC to offer a full range of power generation equipment (it did not produce boilers whereas Alsthom does).

NEI is now being acquired by Rolls-Royce. NEI has technical and marketing links with Mitsubishi companies on switchgear and large industrial gas turbines which may be seen by the latter as a means of gaining access to the European market in which the Japanese firm is uncertain how it is regarded and has no track record.

3.3.3. Telecommunications equipment

Telecommunications equipment is a sector undergoing rapid technological changes with relatively good growth prospects (if not in all sectors). It includes public and private switching, transmission equipment and terminals. European markets have been highly segmented because of the dominant position of PTTs and their close links with local companies.

Major producers GPT (jointly owned by GEC and Plessey) and the somewhat smaller (in this field) STC (Standard Telecommunications), both sell a large part of their output in the UK market, especially to British Telecom (BT), and comparatively little in other EC countries. STC was previously part of ITT, which had numerous European manufacturing subsidiaries now incorporated into Alcatel and as a result had limited experience in selling telecommunications equipment elsewhere in Europe. Both companies manufacture a wide range of equipment but STC no longer produces public switching equipment. GPT ranks around eighth among world producers and is considerably smaller than Siemens or Alcatel, the largest European firms.

The public purchasing directive is seen as important in opening up public networks. STC's main business has been in the public sector and its stance on future trade with the rest of the EC is directed mainly at the public sector. Networks are now said to be opening up but all have local standards requiring modification of equipment and this is not likely to change very quickly. The company has therefore established links with local companies to sell (if necessary assemble or modify), for example, products built round new standards or in which the company has established a clear lead with proven technology that can be demonstrated in operation in the UK. However, there is always the likelihood that when imported niche products prove to be successful, there will be pressure from local firms to manufacture quantity orders. GPT also believe that there will be only a slow opening up of the bulk of public network business especially given the investment in existing equipment. The position should be easier when new technology/standards are involved.

Both firms are more optimistic with regard to customer premises equipment (about a quarter of the telecommunications market) in other member countries. Although, so far, there are not many independent distributors and the position with regard to liberalization is patchy, PTTs may not remain the sole suppliers as they have hitherto been and a set of standards is emerging with perhaps, in the longer term, mutual recognition of type approval. However, while PTTs will lose their monopoly position in distribution they may be expected to act commercially to preserve their market dominance. STC is setting up offices in key countries.

The UK public network has now, of course, been liberalized with two major competing network operators. It is not clear that UK suppliers' share of business has been much affected so far but pricing is very aggressive as commercial considerations now weigh more heavily. Sales of customer premises equipment are completely liberalized and appreciably penetrated by imports.

Both companies aim to be much more active in selling to other EC countries. In any case, competitive strength requires a substantial outlay on R&D and to recoup this requires large sales and therefore, probably, partners as apparently does penetration of network markets. The argument for economies of scale rests mainly on the key competitive role of R&D spending, especially the considerable volume which has been seen to be required for the development of the next generation of public switching equipment. GPT has pointed out (to the Monopolies and Mergers Commission) that although there may be a redistribution of R&D spending in the future towards transmission and processing products rather than switching products, there will continue to be the need for a substantial outlay on total R&D to remain competitive. Also, the cost of marketing on a worldwide basis is very significant. Manufacturing economies of scale are, in general, of rather lesser significance. Both companies believe that there will be further rationalization and collaboration within the supply industry to provide economies of scale in R&D and marketing. STC is cooperating on R&D with French and US firms.

Plessey, the joint owner with GEC of GPT, is the subject of a joint bid by GEC and Siemens. GEC has stated that 'the liberalization of European trade and the widening of traditional procurement policies mean that Europe in the 1990s really is an area for opportunity, but it will be a Europe reaching out to the rest of the world. Few companies are in a position to profit from that opportunity on their own ... In telecommunications we will join forces in developing new generations of telephone exchanges, mutually improve access to the British and West German markets and seek to develop new products for the USA. The joint venture will be able to call on stronger financial and technological resources than GPT would probably have on its own'.

3.3.4. Computers

This is an area of major technological development and of relatively fast growth if not as fast as in the past. ICL (a subsidiary of STC) is by far the largest UK-owned information technology supplier, the sixth largest Europeanowned supplier and the 20th on a world-wide basis. ICL is the smallest supplier of a full range of IT systems. While its financial ratios compare well with other European firms, ICL believes it has to be a global player if it is to afford the R&D necessary to sustain a wide range of output.

Company objectives have been refocused to build strength as a major European player in IT aiming at very specific segments and on the major firms in these. It aims to be a European company in the European market but which happens to have its head office in the UK. ICL sees no great national barriers in Europe but the single European market is acting as a catalyst for changing attitudes. The Atkins study was correct in its view that indigenous suppliers of mainframe equipment have in the past had preferential treatment in public sector purchasing. This is gradually changing and ICL would argue that there is no longer preferential treatment in the UK public sector. The company has taken a European lead in working for 'open systems', whereby computers from different manufacturers can readily be connected together. There have been similar moves to achieve a common applications environment. This would end the lock-in effect of proprietary systems, especially of US companies. This European strategy is being guided by a European strategy board.

At present ICL's sales in continental Europe are about a quarter of the value of those in the UK Being strong in Europe is seen as necessary but not sufficient to achieve the company's objectives. Organic growth is unlikely to provide the required sales volume. Acquisitions have been and will continue to be made. These include Datachecker (USA) to strengthen its position in retailing, Regnecentraler (Denmark) to extend the Scandinavian base and acquire technological resources, and partnerships with European software firms. Above all, partnerships among the major European firms or between them and Japanese and US firms with a strong presence in Europe are considered to be necessary if they are to meet successfully the strongest competition from third countries. A step in this direction is the joint research organization in Munich with Siemens and Bull. Another is the cooperation with other European firms in the Esprit research programme financed by the Community.

Finally, mention should be made of cooperation with Fujitsu. Japanese firms have found it difficult to break into Europe at the systems level. Under this arrangement, Fujitsu are able to provide components of high quality as part of ICL systems.

Conclusions

The list of UK manufacturing industries identified as being sensitive to the completion of the single European market is similar to that drawn up by the Commission for the Community as a whole. The division between industries with high and moderate barriers (not necessarily in the UK itself) is the same. Their importance to the economy is also similar to that in the Community. They constitute in total about half of value added and employment in manufacturing. While this analysis is based on industries judged to be directly sensitive to the completion of the single European market, the indirect effects are likely to run more widely.

The study has examined the relative performance of the sensitive industries compared with that of the manufacturing sector as a whole. The use of the four (static) trade and production measures showed in aggregate a fairly even division in terms of both value added and employment between those industries showing above-average performance and those with a below-average performance. Within these three groups of industries identified as having high barriers to trade, the UK showed an above-average performance in Group 1 (high-technology industries largely supplying the public sector). The picture in Groups 2 and 3 is mixed, with a below-average performance in boilermaking, brewing and soft drinks and an above-average performance in pharmaceuticals. Among the industries with moderate barriers, the UK tends to show a below-average performance in motor vehicles and the simpler consumer goods (e.g. clothing and textiles) and an above-average performance in precision engineering.

There is a relatively close relationship between the performance of different countries on the static and dynamic measures. All the industries in Group 1 perform above average on both static and dynamic measures. The mechanical engineering industries, motor vehicles and the simpler consumer goods show below-average performance on the dynamic measures, with the latter two groups also showing belowaverage performance on the static measures.

It should be clearly borne in mind that the above conclusions have been reached on the basis of past performance. Moreover, they apply only to the performance of particular UK manufacturing industries relative to the average performance for the UK manufacturing sector as a whole. They are not concerned with absolute competitiveness. Past behaviour could be changed by the competitive effects of the single European market as well as by developments in the UK economy having similar consequences—privatization and deregulation—and as a result of improved supply side performance. Further, a broader view of relative performance would need to take account of trade in other goods and services affected by the removal of trade barriers. It is very much up to those closer to these events—firms and their representative organizations—to draw appropriate conclusions from the ranking in the various tables.

The potential importance of some of these points emerges in the final stage of the exercise which is concerned with case studies of companies' perceptions of the changes likely to occur and their strategic responses to these changes. The industries concerned are in the process of and will continue to undergo considerable restructuring in which the single European market is one—but by no means the sole—factor (for example in various branches of engineering as a result of major cross-border joint ventures and in the motor vehicle industry as a result of inward investment by Japanese firms). The case studies also illustrate the point that apart from the direct effect of the removal of barriers, the single European market may well encourage firms to look more closely at other Community markets.

The UK study involved a small number of larger companies making one or more railway transportation equipment, heavy electrical equipment (especially turbine generators), telecommunications equipment and computers. The first three of these products have been supplied largely to the public sector and are directly affected by the public purchasing directive on excluded sectors. The close ties formed by utilities with locally-based firms has meant that there has been little trade between member countries. These barriers were not expected by the companies to be eroded very quickly because of the closeness of long-standing ties and, in spite of work on standards, because of the somewhat specific requirements laid down by the utilities. However, they thought that privatization (or the firm prospect of this) and deregulation or other pressures leading to a much more commercial form of behaviour were more important than the directive as far as UK utilities were concerned. The equipment suppliers in the UK have already been substantially affected by cross-border and other mergers involving EC (and EFTA) companies. This tendency is expected to continue, as a means of, for example, rationalizing expensive R&D activity and easing access to markets which may otherwise remain difficult to penetrate for some time to come. The telecommunications equipment sector is a good example of this tendency. However, UK firms have stressed that the single European market has been one of a number of factors bringing about more cross-border links. A major factor has been the need for competitive strength vis-à-vis third-country suppliers.

The European computer market is already much more open than the other three sectors and ties between public sector buyers and indigenous producers are being eroded. Such ties have in the past been very important. The aim of the major UK company to be a global competitor necessitates the establishment of a much stronger position in European markets leading to a major reappraisal of its approach to them, and the formation of links of one kind or another with other companies, some of which have already taken place. This is another sector in which restructuring of the major indigenous European producers is confidently predicted.

As has been emphasized, much will depend on the response of individual companies to the new challenges and opportunities of the single European market. Whatever an industry's past performance on either the static or dynamic measures of competitiveness in this paper, the single European market represents a completely new opportunity and challenge. The ability to respond to its impact need bear no relation to the past performance of any industry, since future performance will be the result of actions taken by individual firms in the light of changes in their commercial environment, brought about by the single European market. Gains from the single European market will depend on the ability of firms to respond flexibly to the sharpening of competition which should result from the new environment. The government's microeconomic policies to improve the flexibility of product and labour markets are highly relevant to this. Government policy has been aimed at increasing firms' awareness of 1992 and its significance and at encouraging a positive response. About half of companies have taken action or are considering what action to take to prepare for the single European market.

It is encouraging for the process of integration that the 1980s has seen a marked improvement in the growth of labour productivity (and overall productivity) relative to other large member countries in contrast to past experience. Profitability of industry is now higher than for 20 years and investment has been buoyant (including inward investment by Japanese firms).

Statistical annex

List of tables

1.	Intra-EC imports of manufactured goods, energy and construction excluded, at constant prices	III
2.	Intra-EC exports of manufactured goods, energy and construction excluded, at constant prices	ш
3.	Extra-EC imports of manufactured goods, energy and construction excluded, at constant prices	IV
4.	Extra-EC exports of manufactured goods, energy and construction excluded, at constant prices	IV
5.	Total imports of manufactured goods, energy and construction excluded, at constant prices	v
6.	Total exports of manufactured goods, energy and construction excluded, at constant prices	v
7.	Trade balance of manufactured goods, energy and construction excluded, at current prices	VI
8.	Ratio of total exports to imports of manufactured goods, energy and construc- tion excluded, at current prices	VI
9.	Intra-EC export-import ratio of manufactured goods, energy and construction excluded, at current prices	VII
10.	Extra-EC export-import ratio of manufactured goods, energy and construction excluded, at current prices	VII
11.	Trade balance of products facing strong demand, at current prices	VIII
12.	Ratio of total exports to imports for products facing strong demand, at current prices	VIII
13.	Trade balance of products facing weak demand, at current prices	IX
14.	Ratio of total exports to imports for products facing weak demand, at current prices	IX
15.	Trade balance of products facing moderate demand, at current prices	x
16.	Ratio of total exports to imports for products facing moderate demand, at current prices	x
17.	Intra-EC export-import ratio of products facing strong demand, at current prices	XI
18.	Extra-EC export-import ratio of products facing strong demand, at current prices	XI
19.	Intra-EC export-import ratio of products facing weak demand, at current prices	XII
. 20.	Extra-EC export-import ratio of products facing weak demand, at current prices	XII
21.	Intra-EC export-import ratio of products facing moderate demand, at current prices	XIII
22.	Extra-EC export-import ratio of products facing moderate demand, at current prices	XIII
23.	Production indices: total industry (excluding construction)	XIV
24.	Investment indices for manufacturing industry, at constant prices	XIV
25.	Capacity utilization in industry (excluding food, drink and tobacco)	XV
26.	Shares in industrial employment: sectors most affected by 1992	XVI
27.	Specialization indices for intra-EC exports: sectors most affected by 1992	XVII
28.	Extra-EC export-import ratio: sectors most affected by 1992	XVIII
29.	Intra-EC export-import ratio: sectors most affected by 1992	XIX
30.	Share of each member country in extra-EC exports: sectors most affected by 1992	xx
31.	Share of each member country in intra-EC exports: sectors most affected by 1992	XXI

I

Notes to the tables	Table 24
Tables 1 to 25	Source: Enquiry on realized investment in the EC.
Source: Volimex databank	
The figures for Portugal for 1988 were not available.	Table 25
For 1988, EUR 12 has been calculated including for Portugal the same figures as in 1987.	Source: Enquiry on industrial activities.
For EUR 12, total imports and exports are defined as extra-EC	
imports and exports.	Tables 26 to 31
Table 23	Source: Eurostat, Visa databank, completed by other sources
Source: Eurostat.	Years: average 1985-87.

Intra-EC imports of manufactured goods, energy and construction excluded, at constant prices

	Contraction of the		A. S. Salar	Stand To		En la rist						1980 = 100
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	56,2	78,1	53,6	60,4	55,0	49,5	50,3	49,4	66,6	59,1	37,0	52,6
1971 1972	61,1	71,9	60,8	63,1	55,7	54,1	49,7	51,0	65,7	63,4	41,6	56,3
1973 1974	80,4	91,4	71,6	82,9	87,1	71,8 72,8	86,2	67,1	79,3	76,4	48,5 59,4	63,3 72,8
1975	77,1	89,0	71,0	78,9	93,8 84,4	67,1	69,6 59,0	^{72,1} 59,8	80,0 79,5	89,2 61,7	68,6 63,7	75,5 70,2
1976	88,8	110,5	82,3	87,1	88,4	84,4	69,1	71,6	90,5	75,8	71,5	82,1
1978	97,7	105,8	91,3	100,4	82,5	85,0 88,3	92,7	71,4	93,7 97,0	87,3 85,2	79,9 89,6	85,3 90,0
1980	101,7 100,0	111,1 100,0	99,7 100,0	110,8 100,0	96,0 100,0	97,0 100,0	107,2 100,0	88,9 100,0	101,9 100,0	82,4 100,0	106,6 100,0	99,5 100,0
1981	93,9	98,7	94,2	121,8	102,3	100,3	100,0	92,7	92,3	115,6	103,7	97,2
1982 1983	95,6 96,6	109,0	93,9 101,5	130,4 135,9	115,0 109,5	106,8 105,9	95,9 97,8	94,6 93,5	90,5 94,0	121,9 106,4	113,9 127,7	100,7 104,3
1984 1985	103,3 108,3	125,8 140,1	105,0 109,5	147,1 162,4	118,4 135,4	108,5 115,4	107,7 109,9	107,7 117,5	104,0 114,4	96,6 137,7	136,9 145,1	111,3 119,3
1986	112,9	152,3	117,9	181,1	185,3	123,1	116,8	122,2	119,5	141,6	148,7	127,1
1987 1988	120,7 123,3	147,3 147,6	123,8 133,2	177,9 164,6	239,6 291,2	133,3 147,7	117,8 128,7	131,9 147,0	125,6 135,8	189,8	159,1 188,8	134,3 150,4

Table 2

No. of Concession, Name

Intra-EC exports of manufactured goods, energy and construction excluded, at constant prices

												1980 = 100
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	59,9	56,1	55,5	39,6	22,3	53,7	33,8	45,2	52,9	43,8	51,4	52,3
1971	62,8	58,6	60,9	42,3	31,7	59,1	36,5	51,0	60,6	49,5	57,0	57,7
1972	73,8	63,2	65,9	55,8	38,0	67,0	41,9	58,9	68,6	59,3	59,2	64,4
1973	82,2	72,8	77,6	66,4	43,1	76,9	47,7	61,8	77,8	71,0	73,1	74,1
1974	81,5	74,6	81,8	70,6	49,6	82,9	51,6	63,2	83,4	65,8	75,0	77,4
1975	74,1	71,2	71,0	73,2	48,9	74,4	59,4	65,3	77,3	61,2	71,6	71,2
1976	87,6	74,1	84,9	91,5	60,7	82,4	62,5	79,7	89,1	62,2	83,7	83,1
1977	88,2	76,3	85,3	81,0	70,8	87,4	75,0	83,2	86,1	63,6	91,7	85,7
1' 78	93,7	83,3	88,2	91,9	80,9	91,5	84,3	93,2	89,3	76,4	94,7	90,4
979	99,4	92,8	98,4	92,6	93,9	101,6	95,0	105,1	99,4	96,4	98,9	99,6
1980	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1981	97,1	100,9	99,2	100,6	96,9	96,4	97,1	97,5	94,1	95,8	89,6	96,5
1982	97,8	106,0	102,9	104,1	106,7	94,1	104,5	105,0	94,8	121,8	90,9	99,1
1983	101,2	110,6	104,0	117,7	114,7	97,2	109,9	108,6	98,6	152,0	93,9	102,2
1984	105,1	106,6	112,0	135,0	135,3	104,2	127,7	113,2	102,6	176,9	105,0	109,5
1985	109,4	110,9	120,7	129,7	142,5	107,8	126,7	121,2	106,5	155,2	112,4	115,4
1986	115,7	112,4	127,8	152,5	148,2	112,8	133,0	130,7	113,6	214,0	120,1	122,7
1987	123.5	119.7	136,7	168,5	184,3	122,0	152,4	139,8	120,8	244,1	134,9	132,2
1988	134,1	130,0	151,6	146,5	209,8	138,9	167,5	141,1	136,8		147,6	146,3

Extra-EC imports of manufactured goods, energy and construction excluded, at constant prices

												1980 = 100
7.5.5	BLEU	DK	D	GR	E	F	IRL	I	NL	Р	UK	EUR 12
1970	59,5	79,3	48,9	62,2	60,7	45,4	35,9	54,5	51,6	66,6	65,6	55,4
1971	52,5	80,0	49,5	61,5	52,4	46,2	35,7	49,8	54,6	74,3	66,3	54,9
1972	54,6	83,9	54,3	55,6	73,6	54,1	42,6	56,9	56,4	85,5	73,0	61,0
1973	65,9	107,9	60,0	66,0	87,3	63,0	49,2	65,4	63,3	98,0	83,0	69,8
1974	72,0	102,5	57,5	54,4	91,1	72,0	53,8	64,2	67,5	106,1	80,7	70,3
1975	61,1	91,9	58,7	63,1	94,2	64,3	44,9	59,7	66,1	81,7	71,6	65,7
1976	69,8	108,8	70,4	82,6	98,7	74,0	56,0	69,2	75,7	83,3	74,2	74,2
1977	74,0	106,6	74,2	88,7	89,2	73,5	65,6	65,7	83,0	90,0	76,1	76,0
1978	81,0	104,1	80,2	106,1	85,3	75,6	82,0	74,4	89,8	75,9	91,2	83,5
1979	91,0	108,0	90,4	104,2	96,4	88,4	98,2	90,3	95,3	78,1	98,1	93,2
1980	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1981	85,6	97,3	94,9	66,5	107,3	94,2	107,5	84,3	93,2	103,6	83,4	90,0
1982	85,6	97,7	93,5	69,2	94,6	95,6	104,2	84,9	92,2	100,5	83,7	89,4
1983	81,7	104,1	99,7	69,2	95,5	93,8	108,9	87,3	106,1	94,5	89,1	93,2
1984	87,8	114,1	106,4	75,8	95,5	95,7	123,2	103,3	112,9	81,8	94,4	99,3
1985	90,8	121,9	110,3	73,8	108,2	101,5	120,9	111,8	121,1	101,6	96,3	104,1
1986	97,0	140,5	117,2	78,2	139,6	°110,5	125,0	117,4	126,9	97,2	102,0	112,2
1987	105,3	131,2	128,5	85,0	176,7	125,8	148,0	137,4	135,2	124,4	113,5	123,9
1988	118,2	136,3	139,5	95,2	212,0	145,1	156,3	165,6	140,5	:	129,9	140,6

0

Table 4

Extra-EC exports of manufactured goods, energy and construction excluded, at constant prices

1980 = 100BLEU EUR 12 DK D GR F IRL NL. E P UK 1 1970 57,2 65,6 62,2 26,1 33,6 50,2 29,7 44,7 54,6 79,9 78,7 59,8 60,2 1971 68,6 65,0 25,9 40,6 52,6 33,6 47,0 56,2 80,7 84.5 63,1 71,7 75,4 1972 67,0 33,9 48,4 56,3 35,2 64,6 51,0 61,6 85,7 83,1 65,4 1973 54,8 78,9 76,2 39,3 55,6 62,0 46,4 71,6 95,8 95,7 74,0 1974 85,9 86,1 91,2 53,4 62,7 73,4 57,5 66,1 79,5 95.5 95,8 83,5 76,6 94,7 1975 75,1 82,0 82,1 70,6 61,3 68,2 46,9 76,6 69,7 80,8 71,2 76,3 73,5 1976 76,1 83,0 89,2 82,5 57,8 87,3 69,7 95,2 67,6 85,4 87,4 87,7 1977 89,2 93,8 76,7 89,6 67,9 86,9 74,8 91,9 85,7 101,1 97,2 98,2 1978 79,6 96,0 96,0 90,3 91,6 77,1 98,7 90,8 82,7 108,6 1979 94.7 94.8 96.8 82.8 100.0 97.7 85.7 92.1 108,4 94.5 98,6 100,0 1980 100,0 100,0 100,0 100,0 100,0 100,0 100,0 100,0 100,0 100,0 100,0 112,2 109,5 108,4 118,2 117,7 1981 101,3 97,0 110,3 105,9 105,9 113,5 100,0 87,2 103,7 1982 102,6 106,3 88,0 97,9 104,9 115,1 103,2 108,4 86,0 101,4 1983 110,7 119,7 104,9 96,4 129,0 106,1 133,9 109,9 125,5 108.5 84.4 103,8 114,4 1984 125,3 138,8 104,3 139,6 130,7 143,4 113,6 164,9 121,8 90,1 113,5 1985 130,6 141,4 106,7 151,1 110,9 185,6 128,4 145,6 136,7 93,0 118,4 139,1 136,5 119,8 117,5 122,5 120,9 1986 126,8 107,0 117,1 105,3 184,7 148,9 142,7 91,1 114,1 1987 136,7 92,2 128,4 202,5 102,4 153,4 144,5 96,7 114,2 1988 153,9 142,2 122,0 77,0 124,8 108,6 210,5 125,9 140,1 96,6 118,3

Total imports of manufactured goods, energy and construction excluded, at constant prices

	and the second second	Contraction of the	Contraction of	to all the fundations								1980 = 100
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	57,1	78,6	51,5	61,2	57,3	48,1	46,7	51,2	62,1	61,6	52,7	55,4
1971	58,7	75,6	55,8	62,4	54,4	51,4	46,2	50,6	62,4	66,9	55,2	54,9
1972	64,1	79,1	61,8	64,4	72,6	60,1	50,9	56,6	66,6	73,0	61,9	61,0
1973	76,4	98,9	66,4	75,4	87,2	68,8	77,0	66,5	74,5	83,4	72,3	69,8
1974	80,1	95,4	63,9	66,7	92,7	73,2	65,7	69,3	80,4	94,7	75,3	70,3
1975	72,7	90,4	65,5	71,9	88,5	66,2	55,5	59,8	75,5	68,2	68,1	65,7
1976	83,5	109,7	77,0	85,1	92,6	80,8	65,9	70,8	86,1	78,2	73,0	74,2
1977	88,1	105,1	81,0	95,2	88,5	80,2	74,9	69,4	90,5	88,2	77,8	76,0
1978	93,1	104,8	86,4	103,0	83,6	83,9	90,1	74,8	94,8	82,1	90,5	83,5
1979	98,7	109,7	95,6	107,9	96,1	94,1	104,9	89,4	99,9	81,0	102,0	93,2
1980	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1981	91,6	98,0	94,5	97,3	104,3	98,2	101,9	89,7	92,5	111,7	92,5	90,0
1982	92,8	103,8	93,7	103,3	106,6	102,9	97,9	91,1	91,1	114,9	97,3	89,4
1983	92,4	109,2	100,7	106,3	103,7	101,7	100,6	91,3	97,6	102,5	106,5	93,2
1984	99,0	120,5	105,7	115,5	109,0	104,1	111,6	106,1	106,7	91,8	113,5	99,3
1985	103,4	131,8	109,8	123,1	124,2	110,7	112,6	115,5	116,4	126,0	118,3	104,1
1986	108,5	146,9	117,6	135,5	166,5	118,8	118,9	120,5	121,7	127,2	123,0	112,2
1987	116,4	139,9	125,9	136,7	213,7	130,8	125,3	133,8	128,5	168,5	134,0	123,9
1988	121,9	142,5	136,0	133,8	258,6	146,8	135,6	153,5	137,2	:	156,4	140,6

Table 6

Total exports of manufactured goods, energy and construction excluded, at constant prices

												1980 = 100
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	59,2	60,8	58,8	32,7	27,9	52,1	32,9	44,9	53,4	58,6	68,1	59,8
1971	62,2	63,6	62,9	33,9	36,1	56,1	35,9	49,0	59,3	62,2	73,8	63,1
1972	71,4	67,4	66,4	44,6	43,2	62,1	40,4	55,1	66,5	70,1	73,7	65,4
1973	81,4	74,1	76,9	52,5	49,3	70,1	47,4	58,4	76,0	81,1	86,9	74,0
1974	82,7	80,4	86,4	61,8	56,1	78,5	52,9	64,6	82,3	77,9	87,6	83,5
1975	74,3	76,6	76,5	67,1	58,4	75,4	56,6	67,9	77,1	64,7	85,6	80,8
1976	84,6	78,5	87,0	81,1	64,1	82,4	61,5	76,7	88,6	65,3	90,7	85,4.
1977	88,4	81,9	89,5	78,6	73,7	88,4	73,5	84,4	86,4	68,1	97,4	91,9
1978	94,3	85,5	92,1	85,6	85,6	91,6	82,7	95,8	89,8	79,0	103,2	97,2
1979	98,2	93,8	97,6	87,5	96,9	99,8	93,0	106,7	97,2	95,6	98,8	98,2
1980	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1981	98,2	106,5	103,8	98,7	107,5	100,7	99,0	103,7	99,8	97,5	88,1	103,7
1982	99,1	107,8	104,6	95,9	112,1	99,0	106,8	104,1	98,8	112,0	88,0	101,4
1983	103,7	115,2	104,4	106,8	121,8	101,3	115,2	109,3	106,5	134,2	88,1	103,8
1984	110,3	122,7	113,2	119,3	139,3	108,5	135,8	117,4	113,5	158,0	95,9	113,5
1985	114,8	126,1	122,0	117,9	146,7	109,2	139,6	124,7	117,9	147,7	100,6	118,4
1986	118,5	125,8	123,8	129,1	132,8	109,3	144,3	126,7	123,9	184,9	102,4	114,1
1987	126,9	128,1	127,2	129,4	156,6	113,0	163,4	130,6	130,4	203,4	111,6	114,2
1988	139,2	136,1	136,9	110,8	167,7	125,0	176,9	133,7	137,7	:	116,6	118,3

Trade balance of manufactured goods, energy and construction excluded, at current prices

												Mrd ECU
	BLEU	DK	D	GR	Е	F	IRL	1	NL	P	UK	EUR 12
1970	1,39	-0,67	9,76	- 1,27	- 1,74	1,26	-0,46	1,16	-1,13	-0,38	1,68	9,89
1971	0,88	-0,45	11,31	-1,32	-1,12	1,87	-0,48	2,54	-0,34	-0,46	3,16	15,29
1972	1,90	-0,24	12,46	-1.25	-1,73	1,64	-0,43	2,96	0,41	-0,51	1,48	16,40
1973	2,11	-0,76	19,51	-1,54	-2,51	1,73	-0,47	0,26	0,48	-0,53	-1,14	16,88
1974	2,45	-0,54	31,62	-1,32	-3,25	2,71	-0,55	1,47	1,34	-1,04	-1,82	30,03
1975	1,88	-0,17	27,32	-1,84	- 2,92	7,35	-0,19	6,59	0,88	-0,68	2,38	40,26
1976	1,76	-1,56	32,64	-2,32	-2,71	4,16	-0,37	5,84	1,36	-1,11	2,13	39,19
1977	1,67	-1,18	36,41	-2,91	-1,40	7,14	-0,38	10,12	-0,64	-1,34	3,60	50,50
1978	1,62	-0,93	37,40	-2,72	0,34	6,97	-0,76	12,52	-1,16	-1,05	2,22	53,62
1979	0,91	-0,81	37,98	- 3,09	0,48	8,21	-1,17	11,09	-0,79	-0,75	-2,52	47,36
1980	0,46	0,48	38,95	-2,73	0,46	5,45	-0,86	6,27	-0,13	-1,24	2,18	47,50
1981	1,80	1,62	48,69	-2,78	0,78	8,34	-1,22	15,08	3,18	- 2,09	-0,09	73,84
1982	2,23	1,34	61,32	-3,57	1,32	3,08	-0,28	16,30	4,35	-1,60	- 5,02	79,45
1983	3,28	1,71	57,14	-3,63	2,23	6,53	0,45	21,78	4,51	-0,75	- 14,80	78,70
1984	3,71	0,98	66,38	- 3,89	4,99	11,27	1,01	19,90	4,56	0,86	- 17,89	90,07
1985	5,00	0,28	80,25	-4,47	4,26	8,69	1,50	20,09	2,76	-0,71	- 15,65	102,83
1986	4,50	-1,45	83,21	-4,45	- 2,79	0,42	1,57	18,93	1,16	-0,18	- 18,41	82,60
1987	3,79	-0,22	83,85	-4,68	-7,81	-4,93	2,49	13,45	0,38	-1,53	- 19,56	65,36
1988	7,71	0,71	88,47	- 5,53	- 13,00	-9,15	2,92	8,29	-0,16	:	- 30,29	39,82

Table 8

Ratio of total exports to imports of manufactured goods, energy and construction excluded, at current prices

	BLEU	DK	D	GR	Е	F	IRL	1	NL	P	UK	EUR 12
1970	115,4	80,7	145,1	24,6	47,8	108,9	62,7	111,2	89,0	67,7	110,3	125,1
1971	108,8	87,1	147,4	23,7	64,6	112,3	65,3	124,9	96,8	65,7	118,4	138,9
1972	116,9	93,4	147,1	30,3	60,0	109,1	71,2	125,1	103,5	66,6	107,7	138,3
1973	114,5	85,2	160,1	33,6	55,4	107,5	75,0	101,6	103,3	70,6	95,4	130,5
1974	112,8	91,2	181,5	48,1	58,1	108,9	77.3	107,1	106,9	61,6	94.3	142,3
1975	110,1	97,3	167,0	40,4	63,1	124,8	91,9	135,9	104,5	67,2	107,8	159,0
1976	107,3	81,6	161,2	42,2	69,8	110,5	87,4	124,6	105,5	56,6	105,9	145,2
1977	106,2	86,4	159,9	38,6	84.0	116,9	89.7	140,1	97.8	54,1	108,6	152,3
1978	105,5	89,5	155,7	41,0	104,0	115,3	83.5	144,9	96.2	61.7	104.6	151.1
1979	102,7	91,7	147,9	40,1	104.5	115.1	80.0	130,4	97.7	75.4	95.8	137.5
1980	101,2	105,0	143,5	49,3	103,9	108,6	86,3	114,0	99,7	70,0	103,2	131,6
1981	104,6	115,4	151,2	51,6	105,6	112,1	83.6	133,1	108,4	60,3	99.9	146.0
1982	105,4	111.3	159,5	47.1	108,5	104.0	96.4	132.2	110.7	70.2	93.7	146.3
1983	107,3	113,1	149,1	49.7	114,4	108,1	105,5	141.6	109,8	85.8	83.8	141.4
1984	107,4	106,2	150,0	52,9	126.9	112,5	110.1	130,4	108.6	116.9	83.3	140.0
1985	109,3	101,6	155,8	48,6	120,1	108,7	114,0	127,0	104,7	89,2	86,4	142,6
1986	108,0	92,5	155.8	48,7	88.9	100,4	115.7	125.5	101.9	97.3	83.0	135.1
1987	106,4	98.8	153.5	47.0	75.3	95,6	124.3	116.5	100.6	82.8	83.2	126.3
1988	112,2	103,8	150,7	38,6	68.5	92,9	124,8	108,7	99.8		78.6	113.5

Intra-EC export-import ratio of manufactured goods, energy and construction excluded, at current prices

E H L AL										%		
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	123,1	64,4	124,8	25,8	36,0	91,6	61,4	94,1	85,8	46,9	113,5	99,5
1971	108,5	72,7	119,8	24,4	46,7	93,2	65,9	102,7	97,0	48,4	110,7	100,5
1972	116,4	78,2	118,6	28,8	45,4	91,9	73,0	104,1	100,5	53,7	97,1	100,4
1973	113,4	80,1	133,7	34,1	43,7	92,0	74,4	86,0	100,9	59,0	87,9	100,3
1974	110,2	79,1	145,8	43,3	48,1	92,9	77,8	81,2	102,7	51,2	81,7	100,9
1975	105,2	84,5	128,2	34,3	49,6	95,7	96,1	101,1	99,0	60,2	85,0	100,3
1976	107,5	70,2	132,1	42,6	59,5	85,4	90,8	99.6	102.2	48,5	89.5	100.5
1977	102,1	71,7	129,0	35.3	69.8	89.9	95.1	107.0	94.9	44.3	91.2	100.4
1978	101,8	77,5	127,4	37,0	84,5	90,6	88.7	111.3	93.3	52.3	85.6	100.5
1979	103,7	80,9	129.0	34.6	85.7	93.9	85.6	104.8	98.7	66.5	80.9	101.1
1980	104,0	96,4	130,4	43,1	89,0	89,5	89,6	90,1	100,6	61,4	89,7	100,8
1981	105,9	101.0	135.2	34.7	84.8	86.6	86.8	93.2	105.2	50.9	78.8	99.8
1982	105.3	94,4	144.9	34.5	82.0	79.2	101.8	97.7	109.6	62.2	71.6	100.0
1983	107,0	93,1	135,9	38.5	90.0	83.5	113.0	105.9	108.9	81.7	64.6	99.9
1984	104,0	80.3	140,3	43.0	100.6	87.2	121.3	96.7	105.6	109.0	66.9	100.5
1985	105,3	75,4	144,4	38,1	98,0	85,9	122,0	94,3	99,8	74,5	69,0	99,8
1986	106,8	70,5	146.6	42.2	80.7	83.7	125.0	99.6	96.6	89.5	67.9	100.0
1987	105,9	78.5	151.1	43.5	70.3	83.8	141.1	97.8	95.8	78.0	70.4	101.1
1988	114,0	87,0	156,3	36,7	67,5	85,7	140,1	96,4	101,5	:	68,8	101,9

Table 10

Extra-EC export-import ratio of manufactured goods, energy and construction excluded, at current prices

	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	96,6	99,1	172,0	23,3	61,2	143,6	67,7	137,6	98,1	104,0	109,0	125,1
1971	109,6	102,2	189,8	22,9	90,3	154,2	63,5	164,8	96,4	95,6	122,2	138,9
1972	118,5	109,8	193,1	32,7	79,4	147,9	64,5	164,7	112,5	87,3	113,6	138,3
1973	117,9	90,5	199,8	32,9	71,0	141,9	76,9	130,7	110,2	89,3	99,8	130,5
1974	120,5	103,8	233,6	55,8	71,3	141,2	75,9	155,9	118,6	78,7	102,7	142,3
1975	126,3	111,4	225,4	49,7	79,1	187,0	77,9	201,4	119,5	78,4	124,7	159,0
1976	106,6	94,8	203,0	41,9	81,8	165,8	77,1	171,1	114,2	71,3	118,7	145,2
1977	119,6	103,2	203,7	42,6	102,9	175,6	74,3	203,4	105,1	74,0	122,8	152,3
1978	117,5	104,2	195,6	46,4	131,2	170,9	68,1	208,7	103,5	84,0	120,3	151,1
1979	99,7	105,2	174,1	48,5	131,5	160,3	62,9	178,1	95,3	94,9	109,1	137,5
1980	93,9	115,3	160,0	57,0	125,1	145,6	76,2	158,1	97,4	88,0	114,3	131,6
1981	101,4	131,1	169,9	86,8	130,8	159,8	75,5	208,0	115,1	80,1	120,1	146,0
1982	105,6	132,8	177,0	73,5	147,8	152,3	83,8	198,6	113,0	89,2	116,7	146,3
1983	108,3	137,8	164,9	74,3	150,6	156,0	90,4	208,3	111,6	94,7	104,2	141,4
1984	116,5	137,2	160,8	73,2	167,8	160,2	90,3	190,1	114,1	134,4	99,9	140,0
1985	120,6	134,0	168,7	73,2	155,8	152,2	99,6	187,5	114,2	127,1	105,3	142,6
1986	111,6	120,7	166,6	64,9	104,3	134,1	96,8	178,7	113,4	120,5	100,7	135,1
1987	108,0	125,4	156,2	55,8	85,7	119,3	92,8	154,1	111,4	97,8	98,1	126,3
1988	107,3	124,9	144,4	42,7	70,4	106,4	94,9	130,4	95,8	:	90,2	113,5

Trade balance of products facing strong demand, at current prices

											Mrd ECU		
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12	
1970	-0,06	-0,37	4,83	- 0,26	-0,73	0,14	-0,17	0,16	0,39	- 0,23	1,25	5,31	
1971	-0,15	-0,37	5,13	-0,29	-0,73	0,09	-0,19	0,37	0,78	-0,24	1,63	6,15	
1972	0,08	-0,34	5,87	-0,33	-1,00	0,10	-0,20	0,16	1,03	-0,25	1,25	6,46	
1973	0,16	-0,52	7,98	-0,43	-1,30	0,20	-0,23	-0,45	1,35	-0,32	0,77	7,40	
1974	0,26	-0,63	11,81	-0,51	-1,67	0,44	-0,29	0,09	2,50	-0,47	1,50	12,74	
1975	0,34	-0,64	9,36	-0,52	-1,76	1,18	-0,22	0,41	2,03	-0,35	2,46	12,57	
1976	0,52	-0,87	12,09	-0,61	-2,16	0,61	-0,21	-0,25	2,76	-0,66	2,54	13,81	
1977	0,76	-0,82	13,13	-0,66	-2,05	1,23	-0,19	0,45	2,63	-0,65	3,05	16,79	
1978	0,98	-0,85	13,81	-0,70	-1,80	1,23	-0,20	-0,59	2,72	-0,64	2,76	16,51	
1979	0,40	-0,97	14,36	-0,85	-2,07	1,97	-0,25	-0,91	3,51	-0,72	2,22	16,52	
1980	0,57	-0,82	14,70	-0,82	-2,21	1,17	-0,11	-2,62	3,32	-0,92	4,13	16,30	
1981	0,67	-0,73	16,07	-1,00	-3,31	1,38	-0,03	-1,49	3,99	- 1,16	1,92	17,20	
1982	0,62	-0,76	18,35	-1,08	-2,90	-0,06	0,36	-1,79	4,59	- 1,03	0,71	17,99	
1983	0,78	-0,86	19,26	-1,22	-3,05	1,36	0,75	-0,80	5,18	- 1,02	-1,60	19,85	
1984	0,71	-1,19	22,15	-1,45	-3,04	2,27	1,26	-2,80	5,73	- 0,77	-2,52	20,27	
1985	0,60	-1,25	24,59	-1,65	-3,03	2,12	1,81	-3,72	5,03	- 0,84	-0,40	23,73	
1986	0,63	-1,35	26,21	- 1,87	- 5,08	-0,04	2,00	-4,96	4,66	- 1,37	-1,53	19,15	
1987	0,76	-1,30	26,04	- 1,87	- 6,32	-1,22	2,27	-7,21	4,43	- 1,75	-2,30	13,15	
1988	0,54	-1,36	27,20	- 1,96	- 8,12	-3,26	2,81	-9,08	2,80	:	-3,80	2,55	

Table 12

Ratio of total exports to imports for products facing strong demand, at current prices

												70
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	97,0	59,3	205,1	17,1	25,6	104,0	38,0	106,4	114,5	35,2	139,9	169,9
1971	93,2	60,3	198,9	16,8	29,9	102,4	39,5	114,2	127,6	37,2	148,9	177,7
1972	103,4	65,5	204,0	18,6	26,2	102,1	46,7	105,2	133,4	41,7	132,3	173,9
1973	105,2	60,0	209,3	17,2	25,3	103,4	52,7	88,8	135,2	40,9	115,0	166,2
1974	105,8	63,6	222,7	19,3	33,0	105,4	58,3	101,7	144,8	41,8	120,9	184,0
1975	108,1	63,6	194,3	23,2	29,4	115,2	67,3	108,2	137,2	43,5	138,4	183,2
1976	109,8	61,5	191,6	23,8	30,5	106,0	75,3	96,2	140,3	26,1	131,9	170,4
1977	113,0	64,8	186,8	24,5	35,5	111.2	82,5	106,5	134,5	28,7	132,6	175,4
1978	115,4	64,9	181,3	23,3	42,0	110,0	84,9	92,7	133.2	31,0	124.5	163,4
1979	105,3	65.2	168,9	20,4	47.3	113.3	84.9	91.4	136.4	33.3	115.9	152.9
1980	106,8	71,4	162,4	32,6	49,5	106,8	93,9	79,2	130,9	34,7	127,2	143,6
1981	107.3	76,9	160.5	27.9	44.2	107.0	98.8	89.1	134.3	32.4	110.0	137.3
1982	106,4	78.6	162.3	27.2	50.3	99.8	113.2	88.4	136.3	43.1	103.1	135.0
1983	107,2	79.0	156,4	24.0	51.0	105.6	124.0	95.3	134.8	46.6	94.1	133.7
1984	105.6	76.5	154.2	23.4	59.8	108.0	130.2	87.0	131.6	60.8	92.6	127.5
1985	104,3	78,0	153,1	21,4	63,8	106,6	140,4	85,1	124,1	60,1	98,9	128,8
1986	104,3	77,1	155.5	16.7	48.2	99.9	150.0	80.4	122.5	43.7	95.5	123.8
1987	105,0	78.0	152.2	16.2	45.0	96.6	154.1	74.4	120.5	39.0	93.9	115.2
1988	103,2	77,9	149,1	14,1	42,9	92,1	159,9	72,1	111,5	:	91,5	102,5

Trade balance of products facing weak demand, at current prices

La Carlo and a star	and the second second			AND AND AND								Mrd ECU	
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12	
1970	1,86	-0,71	- 1,63	-0,14	-0,46	0,21	-0,19	0,48	- 1,58	0,14	-0,75	-2,76	
1971 1972 1973 1974 1975	1,66 2,24 2,61 3,08 2,19	-0,53 -0,56 -0,93 -0,98 -0,75	- 1,44 - 2,25 - 1,34 2,11 0,48	$-0,14 \\ -0,14 \\ -0,16 \\ -0,01 \\ 0,09$	-0,07 -0,04 -0,13 -0,56 -0,13	0,36 0,15 0,03 0,19 0,77	-0,21 -0,20 -0,21 -0,29 -0,23	1,61 2,16 1,09 0,88 4,47	-1,32 -1,34 -1,66 -2,14 -2,33	0,17 0,24 0,31 0,21 0,28	-0,30 -0,70 -1,74 -2,96 -1,88	-0,45 -0,57 -2,24 -0,74 2,46	
1976 1977 1978 1979 1980	2,05 1,85 1,97 1,94 1,33	-1,39 -1,25 -1,14 -1,30 -0,94	-1,28 -1,66 -1,51 -3,53 -5,68	0,32 0,23 0,30 0,24 0,47	0,01 0,57 1,47 1,59 1,72	-1,20 -0,12 -0,10 -1,27 -2,15	-0,34 -0,35 -0,52 -0,76 -0,81	4,50 6,91 9,58 9,62 7,72	- 3,16 - 3,76 - 3,98 - 4,04 - 4,57	0,24 0,21 0,38 0,76 0,74	- 1,87 - 0,66 - 1,15 - 3,40 - 4,35	-2,29 1,69 5,18 -1,01 -6,91	
1981 1982 1983 1984 1985	1,58 1,95 2,39 3,16 3,70	-0,58 -0,95 -0,75 -0,88 -1,28	-2,19 -0,66 -3,68 -3,91 -0,83	0,24 0,19 0,36 0,73 0,50	2,73 2,83 3,42 4,96 4,71	-0,55 -2,36 -1,33 -0,36 -0,96	-0,98 -0,92 -0,67 -0,76 -0,85	13,95 15,97 17,89 19,09 20,74	- 3,48 - 3,61 - 3,73 - 4,34 - 4,85	0,78 0,95 1,44 2,11 0,47	-4,67 -5,40 -7,76 -8,61 -8,36	7,14 8,09 7,81 11,99 15,01	
1986 1987 1988	3,27 2,93 3,68	- 1,52 - 1,14 - 1,01	- 2,01 - 3,61 - 3,61	0,51 0,37 -0,05	2,28 1,21 0,14	-4,23 -6,03 -6,99	-0,88 -0,82 -0,93	20,35 18,77 18,20	- 5,35 - 5,62 - 5,89	2,36 2,30 :	- 8,78 - 10,47 - 10,90	6,18 -2,70 -6,35	

Table 14

Ratio of total exports to imports of products facing weak demand, at current prices

194 Barris		Stan Print		The stand		1232 1 Sager			Printer 1th Carth	Star Startin		%
•	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	149,5	43,2	83,1	63,4	57,7	104,2	56,9	112,1	58,5	139,3	88,4	84,2
1971	142,5	54,0	85,7	60,3	92,5	107,3	56,5	147,4	65,6	148,6	95,5	97,2
1972	152,5	56,0	80,4	67,9	96,7	102,5	61,5	156,9	68,4	166,1	90,1	96,8
1973	145,0	48,1	90,6	73,3	90,6	100,4	65,9	120,5	68,7	172,6	81,6	90,5
1974	139,2	53,1	112,4	99,2	76,0	101,8	65,0	111,2	69,9	127,5	75,7	97,6
1975	131,4	60,5	102,8	113,1	94,1	107,8	69,3	178,4	66,4	155,9	83,0	108,9
1976	122,3	49,4	94,1	142,9	100,5	91,0	63,9	157,6	64,9	142,4	85,6	93,7
1977	117,8	54,7	93,2	126,4	122,6	99,1	69,2	184,4	62,3	129,8	95,5	104,3
1978	117,2	59,1	94,3	134,3	163,3	99,4	62,2	215,9	62,9	158,1	93,2	112,4
1979	114,8	59,7	88,9	123,7	152,1	93,1	56,8	181,9	64,6	211,6	84,1	98,1
1980	108,5	70,6	84,5	142,0	148,7	90,2	58,4	153,8	63,8	172,7	83,0	89,2
1981	110,3	81,7	93,7	115,5	175,6	97,4	55,7	209,5	70,7	168,3	79,6	112,2
1982	112,7	74,7	98,2	110,8	168,6	90,1	59,7	211,2	71,4	177,7	77,5	113,2
1983	114,2	81,7	91,0	118,4	186,0	94,5	70,1	220,2	72,2	228,2	72,0	111,6
1984	116,8	81,4	91,7	133,6	206,9	98,7	70,8	198,9	71,7	278,7	72,7	115,5
1985	119,0	75,6	98,3	121,7	186,4	96,8	69,2	199,7	70,8	119,2	74,3	118,8
1986	117,1	72,4	96,0	121,6	138,8	86,0	66,9	200,0	68,9	240,1	71,4	108,0
1987	114,7	78,4	93,1	114,8	117,9	81,1	68,3	187,4	68,2	202,4	67,9	96,7
1988	115,7	81,3	93,8	98,2	101,6	80,7	68,0	173,4	70,0	:	70,4	93,3

Trade balance of products facing moderate demand, at current prices

												Mrd ECU
1	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	-0,42	0,41	6,57	-0,87	-0,55	0,91	-0,10	0,52	0,06	-0,29	1,18	7,34
1971	-0,63	0,45	7,62	- 0,89	-0,32	1,41	-0,08	0,57	0,20	-0,39	1,83	9,58
1972	-0,42	0,66	8,84	-0,78	-0,69	1,39	-0,03	0,64	0,72	-0,49	0,93	10,51
1973	-0,65	0,69	12,87	-0,95	-1,08	1,50	-0,02	-0,38	0,78	-0,52	-0,17	11,72
1974	-0,88	1,07	17,70	-0,80	-1,02	2,08	0,03	0,51	0,99	-0,78	-0,36	18,03
1975	-0,65	1,23	17,48	-1,41	-1,03	5,40	0,25	1,72	1,17	-0,61	1,80	25,22
1976	-0,81	0,69	21,83	-2,03	-0,57	4,75	0,17	1,58	1,76	-0,69	1,47	27,67
1977	-0,94	0,89	24,94	-2,48	0,08	6,03	0,16	2,76	0,49	-0,90	1,20	32,01
1978	-1.33	1,06	25,09	-2,32	0,67	5,84	-0,04	3,53	0,10	-0,79	0,61	31,93
1979	-1,44	1,46	27,16	-2,48	0,96	7,51	-0,15	2,38	-0,27	-0,79	-1,35	31,85
1980	- 1,44	2,24	29,93	-2,38	0,95	6,43	0,06	1,17	1,12	- 1,05	2,39	38,11
1981	-0,44	2,93	34,81	-2,03	1,36	7,51	-0,21	2,63	2,66	-1,71	2,65	49,49
1982	-0.34	3.05	43,63	-2,68	1,39	5,50	0,28	2,12	3,37	-1,52	-0,33	53,37
1983	0.11	3.32	41.57	-2.77	1,85	6,49	0,38	4,68	3,06	-1,17	- 5,45	51,04
1984	-0.16	3,06	48,14	-3,17	3,07	9,36	0,50	3,61	3,16	-0,48	-6,77	57,81
1985	0,70	2,81	56,50	-3,31	2,58	7,54	0,55	3,07	2,58	-0,34	- 6,89	64,09
1986	0.61	1,42	59,01	- 3,09	:	4,69	0,46	3,53	1,85	-1,17	- 8,10	57,27
1987	0,10	2.22	61,41	- 3,18	-2,70	2,32	1,04	1,89	1,56	-2,08	-6,79	54,91
1988	3,49	3,08	64,88	- 3,52	- 5,02	1,09	1,03	-0,84	2,93	- :	- 15,59	43,63

Table 16

Ratio of total exports to imports for products facing moderate demand, at current prices

												70
	BLEU	DK	D	GR	Е	F	IRL	1	NL	Р	UK	EUR 12
1970	87,9	131,2	188,4	12,6	56,6	116,0	81,3	113,3	101,7	40,3	117,7	151,0
1971	84,2	132,1	189,0	13,2	73,5	122,5	86,6	113,3	104,8	33,7	124,9	163,0
1972	90,9	147,6	194,9	18,6	62,0	118,5	94,8	112,9	116,8	32,1	111,2	163,9
1973	88,6	134,3	218,0	20,3	56,1	115,7	96,8	94,0	114,5	36,0	98,3	156,8
1974	87,1	146,5	245,0	28,2	65,1	117,9	102,8	106,8	114,7	31,8	97,2	172,8
1975	91,3	147,4	224,5	19,1	67,6	145,3	127,3	122,3	116,0	35,1	113,9	199,5
1976	91,5	119,6	218,7	18,2	82,0	129,7	114,8	116,9	119,6	37,2	109.8	189,6
1977	91,3	124,7	216,7	17.3	102,7	135.2	110,4	127.4	104,5	31,4	106,8	192.2
1978	88.8	129.1	206.1	18.0	123.2	131.7	97.8	130.6	100.8	32.6	103.0	185.5
1979	89.1	139.2	202.1	19.1	127.1	135.8	93.6	116.8	98.0	38.9	94.5	174.7
1980	89,8	163,9	202,2	21,6	123,9	126,7	102,5	106,6	108,3	38,3	109,0	178,2
1981	97,0	170,2	204,0	27,6	129,7	127,3	92,5	113,8	118,8	29,3	109,2	189,0
1982	97,9	167.7	218,3	23.4	125.0	117.6	110.3	110.2	121.9	35.0	99.0	190.2
1983	100,6	167.3	201,1	24.4	134,9	120,1	113.2	122.9	117.5	48.6	85.1	180,0
1984	99.2	152,4	206.9	24.8	148.2	127.0	115.9	114.7	116.0	75.3	83.7	178.3
1985	103,5	141,2	216,2	23,1	135,3	119,8	115,6	110,7	111,9	83,0	84,9	180,9
1986	102.7	118.0	213.9	23.6	100.0	111.6	113.4	112.4	108.1	55.7	81.3	174.1
1987	100,4	131.5	211.9	22.0	79.8	105.2	129.9	105.9	106.5	44.7	85.2	. 168.0
1988	115,5	143,1	206,0	16,4	72,5	102,1	124,8	97,8	111,2	:	74,1	143,7
Intra-EC export-import ratio of products facing strong demand, at current prices

								12-11-2 Test	Second Street			%
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	90,4	34,2	167,0	12,8	17,6	81,6	30,4	78,9	104,6	18,0	110,5	97,3
1971	84,5	37,5	158,0	12,3	21,3	82,0	32,9	85,2	118,0	21,4	111,9	99,2
1972	93,6	41,1	164,2	12,5	20,1	81,5	40,5	78,8	122,2	26,1	101,3	99,5
1973	94,6	41,2	172,7	11,7	20,3	84,7	45,4	67,6	122,6	26,7	90,7	99,1
1974	94,3	42,2	172,7	11,9	26,0	86,3	48,6	70,0	127,7	29,3	93,5	100,9
1975	95,7	39,7	150,4	13,1	21,5	87,2	58,4	78,2	121,1	36,4	104,6	99,1
1976	100,1	38,5	157,4	13,6	23,8	82,2	71,5	71,8	128,6	23,7	100,6	99,9
1977	103,3	40,0	150,7	13,0	26,2	86,0	87,6	73,3	122,3	26,5	99,5	100,2
1978	109,7	41,4	152,0	12,8	31,7	88,0	88,9	67,7	122,6	28,8	92,1	100,4
1979	101,1	41,4	146,8	12,2	38,4	94,7	92,0	62,2	130,6	29,4	94,1	100,3
1980	100,0	45,2	144,6	18,3	41,2	91,0	104,6	58,3	126,9	29,7	109,2	100,1
1981	99,9	48,8	146,3	12,9	42,9	91,1	119,3	63,5	121,5	29,7	94,2	98,7
1982	98,5	48,7	152,0	15,3	41,2	85,9	144,2	63,9	125,7	40,7	88,9	98,7
1983	95,9	48,7	147,8	16,2	41,7	89,9	160,9	68,0	124,2	48,8	82,3	98,8
1984	93,5	46,0	149,2	15,1	49,9	95,3	180,5	61,9	121,2	64,5	88,8	100,1
1985	93,7	45,5	146,4	12,0	55,6	93,8	189,5	62,0	113,0	58,2	94,1	99,6
1986	96,1	47,7	152,6	11,1	44,8	91,6	196,0	62,3	108,2	46,1	90,8	98,4
1987	98,1	51,6	154,2	10,6	43,9	92,9	210,5	62,6	109,3	40,4	92,8	100,2
1988	95,1	56,5	160,8	10,0	44,9	94,2	205,3	62,0	114,1	:	95,0	101,0

Table 18

Extra-EC export-import ratio of products facing strong demand, at current prices

	BLEU	DK	D	GR	E	F	IRL	I	NL	Р	UK	EUR 12
1970	121,8	96,3	260,4	29,8	39,8	152,7	77,1	173,0	141,1	84,7	160,8	169,9
1971	133,2	91,5	265,5	30,2	45,3	148,5	70,1	188,4	154,3	80,2	177,9	177,7
1972	148,8	100,8	269,5	37,2	36,8	150,8	68,6	177.6	167.0	83.5	159.3	173.9
1973	158,2	85,2	269,7	34,6	35,0	147,7	80.3	147.8	175.9	80.4	137.2	166.2
1974	157,0	92,8	312,0	42,9	46.5	150,1	93.6	189.9	195.1	79.2	149.2	184.0
1975	163,7	94,0	266,6	54,8	43,2	178,7	99,4	180,0	184,8	65,1	171,2	183,2
1976	150,0	92.3	243.8	52.7	42.3	158.7	85.6	156.9	174.8	33.8	166.1	170.4
1977	151.0	101.3	239.9	57.3	51.7	164.1	71.8	183.9	167.3	35.7	171.1	175.4
1978	135,6	100.8	219,9	52.4	59.1	154.2	76.3	147.5	159.7	38.1	160.6	163.4
1979	120,3	103,6	199.6	44.1	62,4	150.0	67.7	158.5	150.7	46.4	142.0	152.9
1980	129,7	112,5	185,0	72,7	61,6	134,5	70,0	124,7	139,8	50,6	146,3	143,6
1981	131,6	117,9	176,8	70,6	45.5	133.5	64.6	139.1	157.8	40.5	126.4	137.3
1982	133,5	124.5	174.0	61.3	63.2	121.5	70.5	139.5	155.9	50.2	117.6	135.0
1983	151.8	124.4	166.1	48.1	63.8	130.7	79.5	150.8	152.4	40.7	106.3	133.7
1984	152,0	120,1	159.7	47.2	75.3	126.7	80.0	135.4	147.0	51.2	96.1	127.5
1985	143,6	126,0	160,4	51,3	76,2	125,5	88,6	130,9	140,3	65,6	103,7	128,8
1986	135.4	122,0	158,6	35.6	53.6	112,4	92.5	118.6	145.0	36.7	100.5	123.8
1987	131,4	117.5	150,0	33.1	46.7	102.2	88.9	99.6	138.0	34.6	95.1	115.2
1988	137,3	109,1	137,3	24,9	39,9	89,2	99,3	91,7	107,0	:	87,7	102,5

Intra-EC export-import ratio of products facing weak demand, at current prices

												%
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	186,4	27,0	85,4	66,9	58,5	93,8	58,3	121,9	57,5	121,4	156,6	99,9
1971	158,0	36,3	80,8	70,6	76,6	92,8	57,6	156,9	65,5	139,3	154,6	101,3
1972	167,9	41,9	75,7	69,8	78,0	89,9	63,7	175,4	68,1	169,4	122,8	100,5
1973	161,9	39,3	88,1	79,9	79,9	89,3	68,3	131,3	70,1	166,9	114,3	100,4
1974	151,7	37,6	104,8	110,6	74,7	92,2	69,5	108,1	71,9	111,8	95,8	100,7
1975	137,6	42,7	93,9	116,9	83,8	89,3	70,1	185,0	68,8	139,0	94,9	101,4
1976	138,2	33,5	96,5	166,1	117,0	76,8	65,7	171,3	69,1	125,3	102,5	100,4
1977	123,8	38,4	92,5	129,5	115,3	81,4	69,1	192,9	67,0	110,8	109,3	100,6
1978	119,5	46,2	88,7	138,6	134,7	79,9	63,8	218,4	63,8	142,7	103,5	100,2
1979	124,7	50,4	88,5	122,7	132,2	80,9	60,1	196,6	69,9	198,8	99,5	101,3
1980	123,3	63,2	91,4	139,6	135,0	83,3	60,3	167,6	71,2	172,2	94,3	100,5
1981	121,2	65,9	93,9	87,0	128,3	81,4	56,4	196,3	75,0	140,7	75,0	99,6
1982	119,4	57,7	99,9	89,2	127,7	73,5	60,7	205,9	77,2	157,0	70,3	99,9
1983	119,2	62,8	92,5	96,9	132,4	77,0	73,1	217,1	78,3	211,7	63,5	99,7
1984	117,3	61,8	94,9	110,1	146,0	80,2	71,2	182,9	73,9	252,7	64,3	99,2
1985	117,0	55,8	100,4	100,7	134,1	77,9	66,5	186,3	71,1	91,0	66,3	98,1
1986	117,4	54,1	101,0	113,2	116,1	72,5	64,7	199,7	70,4	217,3	67,8	99,8
1987	114,1	63,7	101,7	112,4	110,7	71,9	68,5	201,6	69,8	184,8	73,9	100,2
1988	119,3	73,3	104,7	96,1	99,5	75,9	70,1	189,0	74,8	:	70,8	101,0

Table 20

Extra-EC export-import ratio of products facing weak demand, at current prices

al and the second second	Contraction of the second	AT A CONTRACT	Print Print and		Ten and the	and the second second	a stand of the	ANT AND THE CAL	Same and	12	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	70
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	93,4	59,4	80,4	58,9	57,2	124,3	,51,0	102,6	62,4	156,6	73,6	84,2
1971	110,4	71,0	92,5	48,8	108,0	139,8	52,2	136,8	65,9	158,4	80,4	97,2
1972	118,3	68,3	87,4	65,0	117,6	132,2	52,6	136,4	69,5	162,9	80,3	96,8
1973	110,9	55,3	94,0	64,6	102,9	126,6	56,6	108,2	63,8	179,7	71,4	90,5
1974	115,5	67,6	121,8	87,0	77,2	121,4	50,7	115,0	63,8	150,5	68,1	97,6
1975	117,3	76,4	114,0	109,1	103,6	146,1	66,1	171,5	59,1	181,0	77,7	108,9
1976	89,4	64,0	91,5	118,2	89,9	122,5	57,4	143,2	53,8	170,0	77,6	93,7
1977	104,6	70,2	94,0	122,6	129,2	137,6	69,6	175,4	50,9	162,3	88,7	104,3
1978	111,9	72,4	101,1	128,6	193,2	145,2	55,4	213,0	60,6	187,0	88,2	112,4
1979	94,4	69,4	89,4	125,3	172,3	118,5	43,4	166,1	51,1	234,2	76,7	98,1
1980	82,5	78,1	77,5	145,2	163,3	102,4	51,0	139,4	46,1	173,3	77,3	89,2
1981	92,0	99,0	93,5	180,7	228,1	125,9	53,1	223,4	60,4	222,5	82,7	112,2
1982	100,4	94,8	96,5	158,4	215,5	122,3	56,1	216,7	57,7	226,6	83,0	113,2
1983	105,1	102,9	89,6	169,7	246,5	128,2	60,7	223,5	59,2	263,2	78,4	111,6
1984	115,8	101,8	88,6	189,6	274,1	134,6	69,8	216,9	66,5	334,8	79,2	115,5
1985	123,0	97,7	96,3	171,0	250,5	133,6	78,0	214,8	70,3	196,6	81,0	118,8
1986	116,5	93,5	90,9	142,3	173,4	114,8	74,8	200,4	64,9	307,2	74,5	108,0
1987	116,1	94,9	84,5	120,7	128,8	99,6	67,8	171,8	63,7	259,1	62,8	96,7
1988	108,6	90,0	83,3	102,4	104,8	89,5	60,7	156,5	57,4	:	70,1	93,3

Intra-EC export-import ratio of products facing moderate demand, at current prices

ALCONT AND AND												%
	BLEU	DK	D	GR	E	F	IRL	I	NL	Р	UK	EUR 12
1970	87,3	122,8	144,5	14,2	38,3	96,1	83,5	83,4	104,4	31,1	94,5	100,5
1971	81,1	130,3	139,4	13,8	51,6	100,6	94,6	80,8	115,5	24,3	90,0	100,8
1972	88,1	138,2	140,6	19,2	47,4	99,9	102,2	79.3	119,7	26,1	82.8	101.0
1973	83,8	140,3	162,4	23,0	42,9	98,9	98,9	69.2	117.2	30,7	72.9	101.0
1974	81,8	150,4	175,2	24,4	52,2	98,7	109,1	68,1	115,2	29,0	66,2	101,2
1975	84,6	143,5	148,5	17,2	54,2	106,6	147,1	71,7	112,3	34,7	70,2	100,3
1976	87,6	115,9	149,8	16,6	65,0	94,7	125,9	76,4	114,8	32,6	75,9	100,8
1977	84,3	118,5	148,8	13,6	88,7	99,3	120,8	80,4	100,4	23,8	76,5	100,3
1978	83,8	126,5	148,5	13,5	109,6	100,9	107,5	82,9	99,9	25,0	72,8	100,7
1979	87,8	138,6	157,1	12,9	106,7	104,5	101,4	80,9	100,7	33,9	64,1	101,3
1980	89,0	174,1	159,8	15,3	104,7	93,7	103,8	67,8	107,7	32,1	75,8	101,4
1981	96,6	180,3	165,0	15,0	97,7	87,5	88,7	64,3	118,8	24,5	71,3	100,7
1982	98,4	166,1	177,5	14,5	92,7	79,0	105,1	68,5	124,3	29,2	61,9	101,0
1983	104,2	159,4	163,8	16,2	113,7	83,8	106,1	77,8	121,0	44,9	53,8	100,9
1984	100,0	127,7	173,3	19,3	129,6	86,8	110,4	74,2	118,4	67,7	53,1	101,9
1985	103,8	117,9	181,1	17,6	119,0	86,1	107,0	71,0	112,0	71,7	53,1	101,2
1986	106,0	100,2	179,5	18,5	93,8	86,2	111,7	77,6	107,9	48,1	52,6	101,2
1987	104,8	112,6	188,1	19,6	72,9	85,6	137,1	77,4	104,7	42,5	52,4	102,4
1988	124,2	124,7	193,1	15,7	69,4	86,4	133,9	79,5	111,4	an in is	51,0	103,0

Table 22

Extra-EC export-import ratio of products facing moderate demand, at current prices

												10
	BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK	EUR 12
1970	90,1	140,3	254,4	11,1	78,9	155,5	75,1	170,2	95,7	58,3	130,9	151,0
1971	96,8	133,7	271,6	12,6	108,3	168,7	67,8	186,2	83,6	50,5	147,6	163,0
1972	103,3	157,7	293,0	18,0	79,6	158,1	71,0	192,1	109,6	41,4	131,4	163,9
1973	111,1	128,2	310,8	17,3	70,9	150,2	89,8	150,0	108,3	43,0	118,4	156,8
1974	108,4	142,8	356,2	33,7	82,2	152,8	85,9	199,1	113,2	35,2	123,6	172,8
1975	119,3	151,8	359,6	21,6	81,8	226,6	72,3	255,6	124,9	35,6	156,2	199,5
1976	110,2	124,1	346,5	19,6	104,4	206,0	84,0	222,5	131,8	43,3	143,0	189,6
1977	125,7	131,5	340,7	20,7	122,1	214,9	79,4	261,5	115,0	44,3	137,3	192,2
1978	114,8	132,2	310,4	22,9	143,1	203,8	68,1	251,6	103,1	48,8	135,5	185,5
1979	94,8	140,0	281,1	26,8	159,7	208,6	70,6	211,5	91,5	47,5	132,6	174,7
1980	92,4	152,5	271,2	27,4	159,5	200,9	98,5	214,8	109,8	49,9	145,3	178,2
1981	98,2	161,1	256,5	49,1	188,5	212,0	103,1	252,7	118,6	37,8	154,5	189,0
1982	96,4	169,5	278,3	39,5	186,7	207,2	125,4	230,0	116,7	47,2	148,0	190,2
1983	89,0	176,5	256,2	39,6	178,2	204,0	132,8	247,3	110,8	55,3	129,8	180,0
1984	96,3	180,7	252,5	34,1	185,3	218,6	130,7	211,7	111,3	90,0	124,0	178,3
1985	102,4	168,3	262,6	34,3	170,4	199,0	137,1	213,8	111,7	107,4	129,2	180,9
1986	91,2	139,5	263,9	35,0	116,1	175,0	117,8	219,8	108,5	78,2	126,3	174,1
1987	84,3	156,3	246,4	27,6	101,5	156,3	113,6	193,4	111,3	51,5	135,0	168,0
1988	86,5	166,2	224,6	17,8	81,8	140,9	104,8	140,4	110,7	:	108,0	143,7

Production indices: total industry (excluding construction)

													1985 = 100
	В	DK	D	GR	E	F	IRL	1	L	NL	Р	UK	EUR 12
1970	77,0	68,2	76,7	48,1	59,6	74,9	50,1	74,4	82,1	71,0	45,0	83,4	73,9
1971	78,4	69,8	77,8	53,5	61,5	78,5	52,0	74,0	81,2	74,9	48,5	83,0	75,3
1972	84,3	72,9	81,2	61,1	71,2	83,8	54,2	77,7	84,6	78,8	54,8	84,5	79,5
1973	89,4	75,3	87,0	70,4	82,0	89,4	59,5	85,2	94,7	84,8	61,3	92,0	86,4
1974	93,1	74,8	86,0	69,4	89,6	91,5	61,3	88,5	98,0	88,8	63,0	90,2	87,8
1975	83,9	70,3	80,7	72,4	83,7	84,7	57,6	80,7	76,6	84,3	59,9	85,3	81,9
1976	90,4	77,1	86,7	80,0	88,0	92,0	62,5	90,1	79,5	90,7	61,9	88,1	87,9
1977	90,9	77,7	88,5	81,3	92,6	93,8	67,5	90,1	79,9	91,1	70,0	92,7	90,2
1978	93,1	79,4	91,1	87,4	94,8	96,0	72,9	92,0	82,4	91,8	74,8	95,3	92,6
1979	97,3	82,3	95,6	92,6	95,5	99,9	78,5	98,2	85,2	94,7	80,2	99,0	96,8
1980	96,0	82,5	96,1	93,4	96,7	100,9	77,9	103,2	82,3	93,8	84,5	92,5	96,8
1981	93,4	82,5	94,4	94,2	95,7	99,5	82,1	100,9	77,7	92,7	85,0	89,6	95,0
1982	93,4	84,7	91,6	95,2	94,6	99,2	81,5	97,8	78,4	89,3	88,9	91,3	93,9
1983	95,2	87,4	92,3	95,2	97,2	99,1	87,9	95,5	82,6	91,9	90,3	94,7	94,9
1984	97,6	95,9	95,3	96,7	98,0	99,5	96,6	98,6	93,6	96,1	90,2	94,9	96,8
1985	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1986	100,8	106,5	102,2	99,8	103,1	100,8	103,2	104,1	102,1	100,2	105,7	102,1	102,3
1987	103,0	102,8	102,5	98,1	107,8	102,9	113,3	106,8	101,2	101,2	108,3	105,8	104,4
1988	108,9	104,8	106,2	103,7	111,1	107,6	125,7	114,2	110,0	100,9	114,9	109,6	108,9
1989	111,9	106,8	111,7	106,1	116,9	111,8	140,4	118,4	118,6	105,8	119,5	110,5	113,0

Table 24

Investment indices for manufacturing industry, at constant prices

													1985 = 100
	В	DK	D	GR	E	F	IRL	1	L	NL	Р	UK	EUR 12
1981	89,0	51,0	89,0	455,0		88,0	51,0	101,0	57,0	65,0	:	88,0	90,0
1982	99,0	50,0	88,0	418,0	:	86,0	59,0	98,0	70,0	61,0	: :	84,0	86,0
1983	93,0	55,0	86,0	214,0	:	83,0	55,0	89,0	78,0	64,0	1	84,0	84,0
1984	97,0	76,0	85,0	100,0	79,0	94,0	63,0	88,0	86,0	81,0	:	96,0	89,0
1985	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1986	113,0	103,0	111,0	73,0	115,0	104,0	109,0	107,0	139,0	103,0	105,0	105,0	105,0
1987	121,0	112,0	114,0	64,0	137,0	108,0	108,0	120,0	143,0	103,0	122,0	111,0	110,0
1988	141,0	119,0	117,0	82,0	155,0	122,0	157,0	132,0	147,0	96,0	139,0	125,0	119,0
1989	155,0	131,0	129,0	82,0	179,0	133,0	206,0	148,0	134,0	94,0	143,0	134,0	130,0

Capacity utilization in industry (excluding food, drink and tobacco)

			AP IL THE SHOULD BE	a Railera Contra	ALP ST LA	112 302 00 52 53		and and the second	the second second				1
	В	DK	D	GR	E	F	IRL	1	L	NL	Р	UK	EUR 12
1970	86,2	:	90,8			85.8		81.3				85.9	
						Ter and					The second		
1971	83,5	:	86,2	:	1. : Des	85,8		77,5	:	:		80,6	
1972	82,7	:	85,0		:	86,3	: :	76,5	:	84,5	:	79,7	83.0
1973	84,8	:	87,1	SE : 514	:	87,6	:	76,5	: : :	85,0	: :	87,9	85.8
1974	83,3	:	82,5	:		85,7	:	78,2	:	84,2	: : : :	82.5	82,8
1975	71,6	:	76,0		:	78,3	:	70,6	:	77,0	:	77,6	76,0
1976	75,2	:	80,2	: .	- :	83,0	:	72,0	:	77,7		76,1	78,7
1977	72,4	2007 : S	80,8		:	83,4	: .	73,7	: :	79,0		78,9	79,7
1978	72,3		80,8	e 11:220	:	83,7	in the	72,3	1.	79,7		79,4	79,7
1979	. 76,2	315 / : France	84,2	:	:	84,6	:	75,4	-	81,5		84,1	82,7
1980	76,0	:	83,8		:	84,7	65,0	75,5	79,5	81,2	:	75,9	80,9
1981	74,4		79,1	:	:	81,6	60,8	73,0	73,5	78,5	:	72,7	77,4
1982	75,8	:	77,2	75,0	:	81,6	59,1	71,9	78,0	76,7	:	74,2	76,9
1983	75,0	:	77,0	75,7	1	81,6	58,1	70,1	70,7	79,5	: 3	76,7	77,2
1984	76,1	:::	80,0	76,2	1	81,9	61,5	72,0	78,0	82,2	:	82,6	79,0
1985	78,2	:	83,6	75,5	:	82,8	67,3	73,7	80,5	83,7	: 1	85,8	81,4
1986	77,2	: :	84,6	77,0	:	83,3	72,7	75,1	84,0	83,5		85,1	82,0
1987	77,1	81,0	84,2	77,0	1:	83,6	75,4	77,5	79,5	83,0	82,6	88,0	83,0
1988	79,0	80,0	85,8	77,2	79,8	85,7	75,2	78,8	83,7	83,9	83,0	92,8	84,4
1989	80,7	81,2	88,7	79,0	82,2	87,7	76,9	80,9	86,2	85,5	82,8	90,6	86,1

Shares in industrial employment: sectors most affected by 1992

330 344	High-technology, public-procurement related markets	B	DK	D	GR	E	F	IRL	1	NL	Р	UK
330 344	High-technology, public-procurement related markets											
330 344												
330 344	GROUP I											
344	Office machinery	0.4	0.6	13		0.1	1.2	3.8	1.4	0.8	0.2	3.3
	Telecommunications equipment	4,0	4,8	6,1	0.6	1.3	2.4	2,6	1.9	7,3	. 1	2,9
372	Medical and surgical equipment	0,1	0,6	0,7		0,1	0,3	2,3	0,3	0,4	0,1	0,6
	Traditional public-procurement and regulated markets	5										
	GROUP 2											
257	Pharmaceutical products	1,6	2,5	1,3	1,9	1,6	1,6	2,8	2,1	1,7	1,3	1,9
315	Boilers, reservoirs, tanks, containers	0,7	0,7	1,0	0,3	0,7	1,8	0,4	0,6	0,5	0,7	: :
362	Railway rolling-stock	1,1	0,4	0,2	-1,1	0,7	0,3	0,8	0,6	5 . T	0,2	0,3
425	Wine and beverages based thereon	.:		0,0	:	1,1	0,3	0,0	0,3	1	0,2	
427	Brewing and malting	1,7	:	0,9	0,6	0,7	0,3	1,6	0,2	1,1	0,5	1,1
428	Soft drinks, natural spa waters	0,5	0,2	0,3	1,3	0,9	0,3	1,3	0,3	0,3	0,5	0,3
241	GROUP 3				0.7			2.1			0.0	
341	Insulated wires and cables	0,0	1,5		0,7	0,4	0,0	2,1	0,5	0,5	0,0	0,0
361	Shiphuilding	2,1	1,0	5,0	1,3	2,0	4,0	1,1	1,5	1,1	0,9	1,1
417	Snaghetti, macaroni, etc.	1	0.0	0.0	0.4	0.1	0,1	0.0	0.4	0.0	0.1	1,0
421	Cocoa, chocolate, sugar confectionery	1,1	1,5	0,8	:	0,8	0,8	1,2	0,1	1,0	0,5	0,9
	Sectors with moderate non-tariff barriers											
	GROUP 4											
	Consumer goods											
345	Electronic equipment and apparatus	1,3	0,9	1,2	The state	0,8	3,5	1,1	1,7	3,8	2,11	2,3
346	Domestic-type electric appliances	0,2	F. S. Sept.	1,0	1,5	0,9	1,1	1,3	1,7	0,3	0,3	1,0
351	Motor vehicles	8,22	:	8,0	0,9	4,9	6,6	0,4	5,0	1,9	0,8	6,3
438	Carpets, linoleum and other floor coverings	1,5	1	0,2	1,1	0,2	0,2	0,4	0,1	0,4	0,7	0,5
451	Mass-produced footwear	0,3		0,0	1,8	1,9	1,0	0,6	2,8	0,5	3,9	1,0
433	Other textile goods	4,4	2,5	2,5	8,1	4,0	4,0	0,5	5,1	1,3	/,0	4,2
491	Jewellery goldsmiths' and silversmiths' wares	0,2	3.1	0,2	0,5	0,7	0.3	0,5	0,3	0,1	1.	0,0
493	Photographic and cinematographic laboratories	0.2			A REAL PROPERTY	0,1	0.2	0,1	-0.1	0.2	The last	
494	Toys, games, sports goods	0,2	0,8	0,3	0,3	0,4	0,5	0,3	0,3	0,1	0,0	0,5
	Investment goods											
321	Agricultural machinery and tractors	0.9	17	10		07	0.8	0.6	10	0.6	0.4	0.6
322	Machine-tools for working metal	0.8	0.5	2.0		0.7	0.6	0.6	1.6	0.6	0.4	1.6
323	Textile machinery, sewing machines	0,6	:	0,7		0,3	0,2	0,1	0,6	0,4	0,3	0,3
324	Mach. for the food, drink and tobacco industries	0,6	1,5	1,6		0,6	0,9	0,2	1,4	1,8	0,2	1,9
325	Plant for mines, steel industry, civil engineering	1,5	2,5	2,4	0,2	1,0	1,4	0,6	1,7	1,2	0,4	1,3
326	Transmission equipment	0,3	1	1,2	1	0,3	0,6	0,1	0,8	0,2		0,3
327	Other machinery and equipment for specific use	0,2	:	1,3	Cont Car	0,4	0,2	0,0	0,8	and the second	0,1	0,6
347	Electric lights, other electric lighting equipm.	0,8		0,5	0,2	0,5	0,3	0,1	0,2	1,3	0,5	0,5
304	Aerospace equipment manuf, and repairing	and the	and the second	0,8		0,4	2,8	1,1	1,1	1,4		
247	Intermediate goods					1				-		
247	Glass and glassware	2,0		1,0	0,6	1,0	1,4	1,9	1,1	0,7	1,3	0,9
240	Resigned to the second se	0,5	1,1	0,9	1,4	1,5	0,7	0,4	1,9	0,5	2,3	0,8
256	Other chemical products for industrial purposes	25	2,0		0.6	1,2	2,0	0.7	2,0	0,0	1,2	1.5
431	Wool industry	1.4		1.93	1.3	0.3	0.8	1.9	1.6	03	15.23	0.6
432	Cotton industry	1,9		1,93	7,1	1.1	1.5	0,4	1.5	0.5	15,23	0,7
481	Manufacture of rubber products	0,7	0,5	1,6	0,8	1,6	2,1	1,0	1,8	0,9	0,9	1,4

Telecommunications included in electronic equipment. The whole sector 350. Aggregated sectors.

XVI

Specialization indices for intra-EC exports: sectors most affected by 1992

		BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK
	High-technology, public-procurement related market	s										
	GROUP 1											
330	Office machinery	31	29	78	1	87	118	546	71	101	8	216
344	Telecommunications equipment	36	137	117	30	29	101	120	58	117	45	228
372	Medical and surgical equipment	62	153	89	3	41	79	553	64	81	16	141
	Traditional public-procurement and regulated marke	ts										
	GROUP 2											
257	Pharmaceutical products	95	213	75	53	93	118	203	68	76	28	185
315	Boilers, reservoirs, tanks, containers	86	177	122	3	35	88	80	89	50	157	84
362	Railway rolling-stock	23	4	190	7	34	111	7	45	69	10	62
425	Wine and beverages based thereon	:	:	6	1	4 873	178		Langer Birts	:	526	1
427	Brewing and malting	178	450	73	5	10	125	210	100	95	6	83
428	Soft drinks, natural spa waters	217	29	52	9	17	193	199	15	170	7	33
1297	GROUP 3											
341	Insulated wires and cables	96	29	103	207	203	72	295	98	87	294	79
342	Electrical machinery	46	84	150	45	31	124	66	62	72	38	95
361	Shipbuilding	17	682	77	31	45	78	38	72	163	7	131
417	Spagnetti, macaroni, etc.	28	:	19	293	:	30	20	605	28	3	00
421	Cocoa, enocolate, sugar confectionery		31	00	38	49	63	251	50	220		80
	Sectors with moderate non-tariff barriers											
	GROUP 4											
	Consumer goods											
345	Electronic equipment and apparatus	95	141	1,30	11	34	115	60	73	105	157	127
346	Domestic-type electric appliances	19	120	113	14	138	80	112	257	41	10	43
351	Motor vehicles	170	6	137		277	101	6	57	28	35	60
438	Carpets, linoleum and other floor coverings	346	125	51	138	24	34	60	51	135	40	58
451	Mass-produced footwear	13	42	20	154	• 139	49	16	524	28	495	33
453	Ready-made clothing	87	37	70	656	40	83	88	214	74	251	80
400	Other textile goods	205	133	03	439	83	20	111	10	18	8/0	220
491	Development and sinematographic laboratories	220	106	20	30	40	110	08	92	42	43	339
493	Toys games sports goods	60	100	75	22	193	74	42	144	60	52	158
474	Investment ands	09	30	15	24	134	17	140	. 144	03	32	150
321	Agricultural machinery and tractors	74	172	117	2	42	84	20	145	53	2 1	113
322	Machine-tools for working metal	68	53	149	17	112	56	37	136	51	-10	91
323	Textile machinery, sewing machines	51	62	165	10	106	72	13	133	44	29	75
324	Mach. for the food, drink and tobacco industries	47	164	141	13	67	64	19	139	78	19	85
325	Plant for mines, steel industry, civil engineering	91	99	129	5	37	101	46	69	69	5	123
326	Transmission equipment	36	20	154	1	79	113	8	116	33	52	106
327	Other machinery and equipment for specific use	24	68	178	6	52	49	21	130	46	9	97
347	Electric lights, other electric lighting equipm.	98	57	118	5	121	84	11	177	163	13	66
364	Aerospace equipment manuf. and repairing	29	18	162	20	69	111	12	80.	23	4	192
	Intermediate goods											
247	Glass and glassware	172	32	82	4	77	131	76	112	73	40	60
248	Ceramic goods	53	41	94	62	181	77	39	246	44	172	87
251	Basic industrial chemicals	981	23	1011	6	82	118	91	1	182	21	106
256	Other chemical products for industrial purposes	981	40	1011	40	28	106	78	38	124	58	136
431	Wool industry	132	and the	731	1 280	26	163	84		28	III	75
432	Cotton industry	100	i i	731	244	45	94	90	:	57	11	49
481	Manufacture of rubber products	90	30	89	30	104	170	12	98	31	13	98
1 40	respected sectors	Part and	Carriel II	LA LA BOA	V YEAR AND		in the second			State State	AN THE REAL	

Extra-EC export-import ratio: sectors most affected by 1992

22		BLEU	DK	D	GR	E	F	IRL	I	NL	Р	UK
	High-technology, public-procurement related markets											
	GROUPI											
330	Office machinery	48	33	62	1	15	39	69	84	40	29	52
344	Telecommunications equipment	126	214	151	8	23	118	90	79	106	18	95
372	Medical and surgical equipment	62	155	222	2	35	79	219	71	62	30	157
	Traditional public-procurement and regulated market	S										
	GROUP 2											
257	Pharmaceutical products	200	328	211	9	166	388	291	131	235	78	433
315	Boilers, reservoirs, tanks, containers	445	365	1 522	13	247	918	83	5 966	540	94	644
362	Railway rolling-stock	210	32	704	7	164	1 989	179	280	128	137	1 071
425	Wine and beverages based thereon	1.	13	70		33 669	1 028	ANT STR	11 190	27	18 331	15
427	Brewing and malting	2 135	4 487	2 218	370	325	3 974	15 827	27	2 622	1 443	715
428	Soft drinks, natural spa waters	1 552	520	139	5 742	179	3 489	8 402	893	7 100	94	828
	GROUP 3											
341	Insulated wires and cables	148	61	210	475	318	249	81	475	83	251	225
342	Electrical machinery	115	201	210	41	72	264	32	175	80	52	169
361	Shipbuilding	143	405	419	1	2 720	362	82	169	175	1 483	222
417	Spaghetti, macaroni, etc.	36	25	66	6 902	127	260	14	102 538	66	1 860	21
421	Cocoa, chocolate, sugar confectionery	397	300	228	599	324	59	703	186	362	28	214
	Sectors with moderate non-tariff barriers											
	GROUP 4											
	Consumer goods											
345	Electronic equipment and apparatus	95	73	59	8	7	62	37	54	46	18	38
346	Domestic-type electric appliances	47	200	203	28	196	88	104	657	162	48	26
351	Motor vehicles	104	14	453	1	108	137	1 e ;	155	37	34	132
438	Carpets, linoleum and other floor coverings	1 510	257	47	637	168	73	420	157	370	251	116
451	Mass-produced footwear	13	54	35	293	1 406	67	.26	915	7	1 488	21
453	Ready-made clothing	45	86	29	561	95	69	53	381	12	3 057	39
455	Other textile goods	90	92	61	51	194	66	45	85	24	2 4 5 3	37
491	Jewellery, goldsmiths' and silversmiths' wares	150	107	100	807	227	104	403	1 399	97	147	88
493	Photographic and cinematographic laboratories	110	170	57	35	47	92	5	458	38	32	194
494	Toys, games, sports goods	35	32	50	26	81	58	44	11	21	12	34
	Investment goods				N. S. Con							
321	Agricultural machinery and tractors	373	185	755	2	91	166	8	1 257	304	5	639
322	Machine-tools for working metal	18	8/	204	1/	101	94	62	312	14	32	153
323	Much for the food drink and tobacco industries	315	104	/15	22	15	142	18	300	230	11	1/2
324	Plant for miner steel industry givil angineering	420	400	210	22	60	200	37	953	203	120	220
325	Transmission equipment	429	73	470	14	51	130	19	172	120	13	124
327	Other machinery and equipment for specific use	88	86	621	14	78	110	30	761	65	10	124
347	Electric lights other electric lighting equipm	79	147	219	24	115	137	6	333	330	55	155
364	Aerospace equipment manuf, and repairing	58	11	61	10	43	170	25	99	99	52	171
	Intermediate goods	and the second										
247	Glass and glassware	277	71	199	46	165	373	575	224	107	192	142
248	Ceramic goods	77	85	286	226	941	146	39	701	48	284	291
251	Basic industrial chemicals	Seale L	88	2861	92	97	137	276		116	44	143
256	Other chemical products for industrial purposes	199	218	2861	63	59	205	119	163	139	49	280
431	Wool industry	61	S	1251	58	345	110	28	57	33	771	88
432	Cotton industry	184	:	1251	41	79	100	32	214	135	771	54
481	Manufacture of rubber products	226	43	168	50	621	202	106	257	80	53	120

XVIII

Intra-EC export-import ratio: sectors most affected by 1992

		BLEU	DK	D	GR	E	F	IRL	1	NL	Р	UK
	High-technology, public-procurement related markets											
	CPOLID 1											
220	Office machinery	62	25	124	1	60	120	643	76	100	24	111
344	Telecommunications equipment	61	114	156	18	20	90	210	40	128	83	116
372	Medical and surgical equipment	70	125	156	1	18	55	520	51	94	26	94
	Traditional public-procurement and regulated market	S .										
	GROUP 2											
257	Pharmaceutical products	100	115	113	13	79	151	115	62	66	24	123
315	Boilers, reservoirs, tanks, containers	111	77	301	1	13	134	78	197	36	178	59
362	Railway rolling-stock	30	1	487	15	56	150	2	52	20	7	109
425	Wine and beverages based thereon	:	- 1	7	342	2 010	265	1	11 293	3	21 444	2
427	Brewing and malting	323	896	97	2	7	128	238	1	74	20	41
428	Soft drinks, natural spa waters	119	99	103	20	28	135	185	/1	127	13	23
	GROUP 3			5.35								
341	Insulated wires and cables	123	17	254	178	201	63	265	195	78	185	48
342	Electrical machinery	64	50	254	26	52	91	14	38	270	50	04
361	Shipbuilding	80	544	139	129	-13	100	37	73 800	50	15	10
417	Cocoa, chocolate, sugar confectionery	130	45	85	16	74	63	137	84	274	1	44
	Sectors with moderate non-tariff barriers											
	GROUP 4											
	Consumer goods											
345	Electronic equipment and apparatus	122	97	182	3	26	91	117	53	115	82	70
346	Domestic-type electric appliances	27	73	205	4	144	51	92	466	461	10	21
351	Motor vehicles	229	6	276	4	137	101	15	42	42	67	31
438	Carpets, linoleum and other floor coverings	590	97	61	56	61	25	67	139	123	68	30
451	Mass-produced footwear	15	41	21	193	1 605	43	15	3 112	42	2 516	25
453	Ready-made clothing	76	36	88	558	90	100	56	589	35	1 468	69
455	Other textile goods	203	122	160	425	180	42	70	198	03	3 373	90
491	Jewellery, goldsmiths' and silversmiths' wares	40	82	12	35	149	50	2/0	389	21	150	186
493	Photographic and cinematographic laboratories	18	127	116	10	321	56	153	205	84	53	101
494	Toys, games, sports goods	12	34	110	1	521	50	100	200			
	Investment goods	120	15	214		16	20	12	242	56	1	57
321	Agricultural machinery and tractors	139	45	314		10	39	60	151	57	18	56
322	Textile machinery sewing machines	65 57	60	302	1	37	57	18	65	79	9	46
323	Mach for the food drink and tobacco industries	58	96	300	-3	28	43	21	214	77	16	46
325	Plant for mines, steel industry, civil engineering	107	50	251	3	20	68	55	75	65	6	62
326	Transmission equipment	52	12	210	:	33	82	22	85	44	40	73
327	Other machinery and equipment for specific use	35	26	404	2	21	39	41	140	47	4	43
347	Electric lights, other electric lighting equipm.	110	28	177	3	52	50	14	171	98	17	41
364	Aerospace equipment manuf. and repairing	91	65	101	19	121	192	78	127	51	37	158
	Intermediate goods											
247	Glass and glassware	248	28	124	2	56	95	86	119	68	58	37
248	Ceramic goods	54	37	116	17	182	44	56	301	69	304	116
251	Basic industrial chemicals	96	18	1241	:	43	86	169		205	28	83
256	Other chemical products for industrial purposes	106	20	1241	9	22	71	69	29	29	58	109
431	Wool industry	121	1 Barris	1041	213	176	195	84	92	42	791	66
432	Cotton industry	152	:	104	42	231	78	135	264	13	20	20
481	Manufacture of rubber products	129	21	91	17	127	139	113	III	09	20	02

Aggregated sectors.

Share of each member country in extra-EC exports: sectors most affected by 1992

Inc. DA D	-		DIEU	DV	D	CR	E	F	IDI		NI	P	1111	ELIP 12
High-technology, public-processent related markets GROUP I CROUP I Colspan="2">Intermining and surgical quantities Telecommanications equipment: 2.5 1.4 2.7 0.0 1.6 1.5 7.3 1.21 7.5 0.3 2.48 0.0 0.7 1.61 1.5 7.3 1.21 7.5 0.3 2.48 0.00 Telecommanication sequences and regulated markets Value and surgical quantities CAUPT Value and surgical quantities Value and surgical quantities Value and surgical quantities CAUPT Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities Value and surgical quantities </th <th></th> <th></th> <th>BLEU</th> <th>DK</th> <th></th> <th>UK</th> <th>L</th> <th><u>г</u></th> <th>IKL</th> <th></th> <th>NL</th> <th>F</th> <th>UK</th> <th>EUK 12</th>			BLEU	DK		UK	L	<u>г</u>	IKL		NL	F	UK	EUK 12
GROUP I GROUP I Colspan="2">Colspan="2">Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" <th< td=""><td></td><td>High-technology, public-procurement related markets</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		High-technology, public-procurement related markets												
30 Office machinery 2.5 1.4 7.3 0.0 1.6 1.5. 7.0 0.3 2.4 5.0 0.0 0.5 1.1. 1.5 7.0 0.3 0.4 5.0 0.0 0.5 1.4. 1.5 7.0 0.0 0.7 1.5 1.5 7.0 0.0 0.7 1.5 1.5 0.0 0.7 1.5 1.5 0.0 0.7 0.1 1.5 0.0 0.7 0.0 0.6 0.6 0.0 0.0 0.1 1.5 0.0 0.2 0.7 0.0 0.7 0.1 0.0 0.8 0.1 1.5 0.0 0.2 0.0 0.1 1.5 0.0 9.0 0.0		GROUP I												
944 Telecommanacions equipment 2.2 3.9 4.8.4 0.0 7.7 16.1 1.5 7.0 10.3 0.1 4.9 0.2 7.7 100.0 Tradicional public-procursment and regulated markets CROUP 2 Tharmacettical products 5.8 5.9 2.6.9 0.4 3.4 18.4 1.3 9.9 5.6 0.6 2.1.9 100.0 Total containers 1.5 2.0 4.2.9 0.1 1.0 0.2 4.7 0.2 0.4 1.4 1.4 0.3 2.4.7 0.6 2.1.9 100.0 Total containers 2.0 4.2.9 0.1 4.0 4.5.5 0.4 4.4 19.2 0.9 7.8 100.0 Total containers 2.0 4.3 4.2.9 1.5 3.6 2.5 1.4 4.3.8 2.7 1.4 0.3 2.1.1 3.8 1.7.2 1.8 5.2 1.4 0.3 2.1.1 </td <td>330</td> <td>Office machinery</td> <td>2,5</td> <td>1,4</td> <td>27,3</td> <td>0,0</td> <td>1,6</td> <td>15,3</td> <td>7.3</td> <td>12,1</td> <td>7,5</td> <td>0,3</td> <td>24,8</td> <td>100,0</td>	330	Office machinery	2,5	1,4	27,3	0,0	1,6	15,3	7.3	12,1	7,5	0,3	24,8	100,0
372 Medical and surgical equipment 2,0 3,2 48,3 0,0 1,3 11,4 4,0 6,8 4,9 0,2 17,9 100.0 Traditional pable-procurements and regulated markets CROUP 2 257 Pharmaceutical products 5,8 5,9 26,9 0,4 3,4 18,4 1,3 9,9 5,6 0,6 21,9 100,0 313 Boilers, reservoirs, lanks, containers 1,3 0,2 0,2 0,1 1,4 0,2 2,4 0,3 0,2 0,4 0,2 0,4 0,2 0,4 0,2 0,4 0,2 0,4 0,2 0,0 0,1 1,40 0,2 0,4 0,2 0,4 0,4 10,2 0,2 0,3 0,2 0,3 0,2 0,3 0,2 0,3 0,2 0,3 0,2 0,3 0,4 1,3 3,6 2,1 1,4 0,0 1,0 0,2 0,3 0,2 1,0,2 0,4 1,6,3	344	Telecommunications equipment	2,2	3,9	34,8	0,0	0,7	16,1	1,5	7,0	10,3	0,1	23,5	100,0
Telitional packice proceament and regulated markets CROUP 2 Colspan="2">Colspan="2" Colspan="2">Colspan="2">Colspan="2" Colspan="2" Colspa=	372	Medical and surgical equipment	2,0	3,2	48,3	0,0	1,3	11,4	4,0	6,8	4,9	0,2	17,9	100,0
GROUP 2 Pharmaceutical products 5.8 5.9 6.9 0.4 3.4 18.4 1.3 9.9 5.6 0.6 2.9 1000 13 Boller, reservors, tarks, containers 1.3 0.4 2.8 0.1 1.3 47.5 0.0 2.87 0.1 1.3 47.5 0.0 2.92 0.4 0.2 0.9 0.1 1.40 2.2 0.1 3.3 2.1 0.0 0.2 0.0 1.62 2.0 0.3 3.74 0.0 9.8 1000 20 Soft dirinks, natural spa waters 2.3 5.7 1.22 0.8 2.4 4.5 0.4 4.5 0.4 10.2 0.7 3 1000 31 Spind trinks, natural spa waters 2.1 3.4 4.4 4.1 1.3 2.1 1.8 5.2 1.4 0.0 3.6 2.9 0.2 1.9.0 2.0 3.2 10.0 31 Spind trinks, natural spa Spind		Traditional public-procurement and regulated markets												
277 Pharmaceutical products 5.8 5.9 2.6 0.4 3.4 1.4 1.4 1.9 9.5 6.6 0.5 1.19 1000 315 Boller, reservoirs, tank, sontainers 1.5 0.2 2.8.3 0.1 1.3 47.5 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.3 1.62 0.0 0.3 1.74 0.3 9.8 1000 428 Soft drinks, natural pay waters 2.8 5.7 1.2 0.8 2.4 4.55 0.4 4.4 1.90 0.0 1.00.0 424 Isolated wires and cables 2.3 1.6 2.9 1.2 1.8 2.2 1.4 0.0 1.00.0		GROUP 2												
115 Boller, reservoir, tanks, containers. 1,5 2,0 42,9 0,0 1,8 1,0 0,2 2,4 ⁷ 3,9 0,3 1,1 1,0 0,0 2,2 2,4 ⁷ 3,9 0,3 1,1 1,0 0,0 0,2 0,0 0,1 1,4 0,2 2,0 0,4 0,7 0,2 1,0,0 3,7,4 0,0 3,7,4 0,0 9,8 1,00,0 127 Peweing and mailing 5,4 5,4 2,9 0,1 0,3 1,4 0,3 3,4 0,00 0,0 141 Insulated wires and cables 2,3 1,6 2,9 1,5 3,6 2,1,5 1,6 0,6 6,6 3,0 0,2 1,7,3 100,0 142 Electricit machinery 2,1 3,4 4,4 0,1 1,2 0,4 0,2 10,0 1,3 0,2 6,7 0,0 8,2 1,8 10,0 0,2 1,3 1,0 1,5 5,4 2,6 0,2 1,8 10,0 0,0 1,3 1,5 5,4 2,6 0,2 <td< td=""><td>257</td><td>Pharmaceutical products</td><td>5,8</td><td>5,9</td><td>26,9</td><td>0,4</td><td>3,4</td><td>18,4</td><td>1,3</td><td>9,9</td><td>5,6</td><td>0,6</td><td>21,9</td><td>100,0</td></td<>	257	Pharmaceutical products	5,8	5,9	26,9	0,4	3,4	18,4	1,3	9,9	5,6	0,6	21,9	100,0
362 Raitway rolling-stack 2.8 0.2 28.3 0.1 1.3 47.5 0.2 0.4 0.2 0.0 0.1 1.40 25.5 0.0 9.2 0.1 0.7 0.2 0.00 427 Brewing and mailing 5.4 5.7 12.2 0.8 2.4 4.5.5 0.4 4.4 19.2 0.9 7.8 1000.0 628 Str0 dirinks, natural spa waters 2.8 5.7 12.2 0.8 2.4 4.5.5 1.4 4.4 1.5 1.8 1.00.0 214 Insulated wires and cables 2.3 1.6 2.9 1.3 2.2 6.7 0.0 8.2 1.9 0.2 0.3 1.00.0 214 Insulated wires and cables 0.3 2.6 7.7 0.0 8.2 1.9 0.4 0.2 1.00.0 1.00.0 1.0 1.5 5.4 2.6.9 0.2 1.8 1.00.0 1.0 1.5 5.4 2.6.9 0.2 1.8 1.00.0 1.0 1.5 5.4 2.6.9 0.2 1.8,3 1.0	315	Boilers, reservoirs, tanks, containers	1,5	2,0	42,9	0,0	1,8	11,0	0,2	24,7	3,9	0,3	11,9	100,0
425 Wine and heverages based therson 0,0 0,2 0,0 0,1 14,0 25.2 0,0 9,2 0,1 0,3 15,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,3 9,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,4 0,2 0,0 0,1 0,4 0,4 0,4 0,2 100,0 0,1 1,0 0,4 0,4 0,2 100,0 0,1 1,0 1,5 5,4 2,6,9 0,2 19,8 10,0 0,2 19,0 0,4 0,2 100,0 0,2 19,0 0,4 0,2 10,0 0,2 1,0,0 1,0 1,2,9 0,3 3,4 0,0	362	Railway rolling-stock	2,8	0,2	28,3	0,1	1,3	47,5	0,2	9,2	0,4	0,2	9,8	100,0
427 Brewing and mating 5.4 5.4 2.29 0.1 0.3 16.2 2.0 0.3 3/1.4 0.3 9.8 100.0 GROUP 3 Imulated wires and cables 2.3 1.6 29.9 1.5 3.6 21.5 1.2 11.8 5.2 1.4 20.0 0.0 0.0 0.0 21 Electricital machinery 2.1 3.4 4.24 0.01 9.4 1.23 0.2 6.7 0.0 86.2 1.9 0.4 0.2 100.0 21 Cocoa, chocolate, sugar confectionery 4.5 6.7 21.5 0.6 4.8 8.1 1.5 5.4 2.6.9 0.2 19.8 100.0 21 Cocoa, chocolate, sugar confectionery 4.5 6.7 21.5 0.6 4.8 8.1 1.5 5.4 2.6.9 0.2 19.8 100.0 21 Cocoa, chocolate, sugar confectionery 4.5 6.7 21.5 0.6 7.2 20.8 0.4 16.3 100.0 31 Detrotivelices 5.4 0.3 3.6.7 <td>425</td> <td>Wine and beverages based thereon</td> <td>0,0</td> <td>0,2</td> <td>0,0</td> <td>0,1</td> <td>14,0</td> <td>25,5</td> <td>0,0</td> <td>59,2</td> <td>0,1</td> <td>0,7</td> <td>0,2</td> <td>100,0</td>	425	Wine and beverages based thereon	0,0	0,2	0,0	0,1	14,0	25,5	0,0	59,2	0,1	0,7	0,2	100,0
sear bit links, initial gate values 2.6 2.6 2.6 2.6 2.6 2.6 0.7 4.8 1.60 0.05 1.8 1.00 GROUP 3	427	Brewing and malting	5,4	5,4	22,9	0,1	0,3	16,2	2,0	0,3	37,4	0,3	9,8	100,0
OROUP 3 OROUP 3 Insultation of the second s	420	CDOUD 2	2,0	5,1	12,2	0,0	2,4	43,5	0,4	7,7	17,4	0,9	7,0	100,0
Instruction machinery 2.1 3.4 4.2 4.0 1.3 2.1 1.4 4.2 4.0 1.3 2.1 1.4 4.2 4.0 1.3 2.1 1.4 9.8 1.79 0.1 9.4 2.3 0.2 1.3 2.0 0.3 0.2 1.3 2.0 0.3 2.2 1.3 2.0 0.3 2.2 1.3 2.0 0.3 2.2 1.3 2.0 0.3 2.2 1.3 2.0 2.5 1.0 2.2 1.3 2.2 0.4 2.2 1.3 2.2 0.4 2.2 1.3 2.2 0.4 2.3 1.3 2.1 1.0 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 1.3 2.2 2.3 5.5 3.5 5.6 100.0 1.3 2.2 0.3 2.5 0.4 3.4 2.2 0.3 <td>341</td> <td>Insulated wires and cables</td> <td>23</td> <td>1.6</td> <td>20.0</td> <td>15</td> <td>36</td> <td>21.5</td> <td>12</td> <td>11.8</td> <td>52</td> <td>14</td> <td>20.0</td> <td>100.0</td>	341	Insulated wires and cables	23	1.6	20.0	15	36	21.5	12	11.8	52	14	20.0	100.0
361 Shipbuilding 1.1. 9.8 17.9 0.1 9.4 12.3 0.2 5.1 9.0 2.0 33.2 100.0 417 Spaghetti, macroni, etc. 0.2 0.1 2.9 1.3 0.2 6.7 0.0 86.2 1.9 0.4 0.2 100.0 Sectors with moderate non-tariff barriers GROUP 4 Consumer goads Sectors with moderate non-tariff barriers GROUP 4 Consumer goads Sectors with moderate non-tariff barriers GROUP 4 Consumer goads Add to 1 1.0 15.2 0.6 7.2 20.8 0.4 16.3 100.0 Sectors with moderate non-tariff barriers GROUP 4 Consumer goads Motor vehicles 5.4 0.3 1.2 2.8 2.3 5.8 1.0 10.0 1.2 1.4 1.4 1.0 1.0 1.1 1.4 1.0 1.1 1.4 <	342	Electrical machinery	2.1	3.4	42.4	0.1	1.3	20,1	0.6	9.6	3.0	0.2	17.3	100.0
417 Spaghetti, macaroni, etc. 0.2 0.1 2.9 1.3 0.2 6.7 0.0 86.2 1.9 0.4 0.2 100.0 421 Cocea, chocolate, sugar confectionery 4.5 6.7 21.5 0.6 4.8 8,1 1.5 5.4 26.9 0.2 19,8 100.0 GROUP 4 Consume goads 345 Electronic equipment and apparatus 4.3 2.8 31,4 0.1 1.0 15.2 0.6 7.2 20.8 0.4 16.3 100.0 345 Electronic equipment and apparatus 4.3 2.8 31,4 0.1 1.0 15.2 0.6 7.2 20.8 0.4 16.3 100.0 346 Domestic-type electric appliances 0.9 5.6 38,7 0.1 3.3 12.9 0.5 2.2,3 9.5 0.5 10.0 347 Mass-produced footwar 0.3 1.6 10.4 0.9 14.6 9.7 0.3 5.8 10.0 1.5 6.3 1.8 1.1 1.1<	361	Shipbuilding	1.1	9.8	17.9	0.1	9.4	12.3	0.2	5.1	9.0	2.0	33.2	100.0
421 Cocoa, chocolate, sugar confectionery 4,5 6,7 21,5 0,6 4,8 8,1 1,5 5,4 26,9 0.2 19,8 100,0 Sectors with moderate non-tariff barriers GROUP 4 Consumer goods 343 Electronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 15,2 0,6 7,2 20,8 0,4 16,3 100,0 545 Electronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 15,2 0,6 7,2 20,8 0,4 16,3 100,0 541 Baserpoduced footwar 0,3 5,6 10,1 1,0 1,1 1,4 31,0 0,0 10,2 1,1 1,4 31,0 0,0 12,3 1,1 1,4 31,0 0,0 10,0 12,3 1,1 10,0 1,3 1,0 1,1 1,3 0,6 1,1,1 1,0 1,1 1,0 1,1 1,0	417	Spaghetti, macaroni, etc.	0,2	0,1	2,9	1,3	0,2	6,7	0,0	86,2	1,9	0,4	0,2	100,0
Sectors with moderate non-tariff Barriers GROUP 4 Consumer goods Sectors appliances 4,3 2,8 3,1 1,0 1,5 3,1 0,1 5,2 2,0,8 0,4 16,3 0,0 5,2 2,0,8 0,4 16,00,0 Sectors with moderate on pointains 4,3 2,8 0,1 1,3 0,2 2,3 9,4 3,2 0,4 3,8 1,0 1,1 1,3 1,0,1 1,1,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1 1,0,1	421	Cocoa, chocolate, sugar confectionery	4,5	6,7	21,5	0,6	4,8	8,1	1,5	5,4	26,9	0,2	19,8	100,0
GROUP 4 Consumer goods 345 Electronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 15,2 0,6 7,2 20,8 0,4 16,3 1000 346 Domestic-type electric appliances 0,9 5,6 38,7 1,3 12,9 0,5 2,3 9,5 0,5 5,6 100,0 311 Motor vehicles 5,4 0,3 64,8 0,0 1,4 13,1 0,0 12,3 1,1 14,3 100,0 315 Ready-made clothing 1,9 4,3 22,8 0,9 1,7 17,2 0,7 32,0 6,5 10,0 13,3 10,0 10,3 10,0 14,3 10,0 10,0 14,3 10,0 14,3 10,0 14,3 10,0 1,3,3 10,0 1,3,3 10,0 1,3,3 10,0 1,3,3 10,0 1,3,7,3 10,0 1,3,7,3 10,0 1,3,7,3 10,0 1,3,7,3 10,0		Sectors with moderate non-tariff barriers												
Consumer goods Selectronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 15,2 0,6 7,2 20,8 0,4 16,3 1000 Selectronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 1,52 0,6 7,2 20,8 0,4 16,3 1000 Selectronic equipment and apparatus 6,3 2,8 3,1 10,0 5,9 1,3 0,2 7,6 1000 Motor vehicles 5,4 0,3 6,48 0,0 1,4 1,1 0,0 5,9 1,3 0,2 7,6 1000 Motor vehicles 5,4 0,3 6,1 1,1 1,1 10,1 10,3 10,0 12,3 1,1 1,1 10,0 14,3 10,0 13,3 10,6 1,1 1,1 10,1 10,0 13,3 10,0 13,3 10,0 1,1 1,1 1,1 1,1 1,1 1,1 <		GROUP 4												
345 Electronic equipment and apparatus 4,3 2,8 31,4 0,1 1,0 15,2 0,6 7,2 20,8 0,4 16,3 100,0 346 Domestic-type electric appliances 0,9 5,6 38,7 0,1 3,3 12,9 0,5 22,3 9,5 0,5 5,6 100,0 348 Carpets, linoleum and other floor coverings 26,3 5,1 21,2 0,8 2,3 5,8 1,0 10,0 12,3 1,1 14,3 100,0 451 Mass-produced footwear 0,3 1,6 10,4 0,9 14,6 9,7 0,3 55,2 0,4 3,8 2,9 100,0 453 Ready-made clothing 1,9 4,3 2,2 0,9 1,7 17,2 0,7 3,0 1,5 1,0 11,1 13,3 0,6 10,9 3,6 11,1 10,1 10,0 14,3 10,0 14,3 1,1 0,1 13,5 10,00 491 Jewellery, glodismiths' wares 39,0 0,3 6,8 0,2 1,4 5,1		Consumer goods												
346Domestic-type electric appliances 0.9 5.6 38.7 0.1 3.3 1.29 0.5 2.3 9.5 0.5 5.6 100.0 351Motor vehicles 5.4 0.3 64.8 0.0 1.4 13.1 0.0 5.9 1.3 0.2 7.6 100.0 481Carpets, linoleum and other floor coverings 26.3 5.1 21.2 0.8 2.3 5.8 1.0 10.0 10.2 1.1 4.3 100.0 453Mass-produced footwear 0.3 1.6 10.4 0.9 14.6 9.7 0.3 55.2 0.4 3.8 2.9 100.0 453Mether textile goods 6.3 5.9 26.3 1.0 11.1 13.3 0.6 10.9 3.6 11.1 10.1 10.0 454Devellery, goldsmiths' and silversmiths' wares 39.0 0.3 6.8 0.2 1.4 5.1 0.6 26.7 1.1 0.7 18.3 100.0 491Hewellery, goldsmiths' and silversmiths' wares 39.0 0.3 6.8 0.2 1.4 5.1 0.6 26.7 1.1 0.7 18.3 100.0 493Photographic and cinematographic laboratories 2.2 6.7 13.8 0.2 25.9 23.1 1.2 14.8 2.6 0.2 16.2 10.0 494Toys, games, sports goods 2.8 3.7 3.5 33.9 0.0 1.7 11	345	Electronic equipment and apparatus	4,3	2,8	31,4	0,1	1,0	15,2	0,6	7,2	20,8	0,4	16,3	100,0
351Motor vehicles5,40,364,80,01,41,10,05,91,30,27,6100,0438Carpets, linoleum and other floor coverings26,35,121,20,82,35,81,010,012,31,114,3100,0451Mass-produced footwear0,31,610,40,914,69,70,355,20,43,82,9100,0453Ready-made clothing1,94,322,80,91,717,20,732,01,56,310,8100,0455Other textile goods6,35,926,31,011,113,30,610,93,611,1100,0459Photographic and cinematographic laboratories2,26,71,38,022,31,610,119,71,00,137,5100,0494Toys, games, sports goods2,83,129,90,25,92,11,214,82,60,216,2100,0312Machine-tools for working metal2,51,356,10,03,17,10,216,12,20,111,3100,0323Textile machinery, sewing machines4,70,955,70,02,16,10,220,42,70,27,0100,0324Mach. for the food, drink and tobacco industries2,34,84,10,11,710,30,21,64,7<	346	Domestic-type electric appliances	0,9	5,6	38,7	0,1	3,3	12,9	0,5	22,3	9,5	0,5	5,6	100,0
438 Carpets, linoleum and other floor coverings 26,3 5,1 21,2 0,8 2,3 5,8 1,0 10,0 12,3 1,1 14,3 100,0 451 Mass-produced footwear 0,3 1,6 10,4 0,9 14,6 9,7 0,3 55,2 0,4 3,8 2,9 100,0 453 Ready-made clothing 1,9 4,3 22,8 0,9 1,7 17,2 0,7 32,0 1,5 6,3 10,0 11,1 100,0 455 Other textile goods 6,3 5,9 26,3 1,0 11,1 13,3 0,6 10,9 3,6 11,1 10,1 100,0 491 Jewellery, goldsmiths' and silversmiths' wares 39,0 0,3 6,8 0,2 1,4 5,1 0,6 0,1 19,7 1,0 0,1 37,5 100,0 494 Toys, games, sports goods 2,8 3,1 29,9 0,2 5,9 23,1 1,2 14,8 2,6 0,2 16,2 100,0 204 Arcivitarial machinery and tractors 3,7	351	Motor vehicles	5,4	0,3	64,8	0,0	1,4	13,1	0,0	5,9	1,3	0,2	7,6	100,0
431 Mass-produced footwear 0,3 1,6 10,4 0,9 14,6 9,7 0,3 55.2 0,4 3,8 2.9 100,0 453 Ready-made clothing 1,9 4,3 22,8 0,9 1,7 17,2 0,7 32,0 1,5 6,3 10,8 100,0 455 Other textile goods 6,3 5,9 26,3 1,0 11,1 13,3 0,6 10,9 3,6 11,1 10,1 100,0 491 Jewellery, goldsmiths' and silversmiths' wares 39,0 0,3 6,8 0,2 1,4 5,1 0,6 26,7 1,1 0,1 37,5 100,0 493 Photographic and cinematographic laboratories 2,2 6,7 13,8 0,2 2,3 1,2 14,8 2,6 0,2 16,1 2,7 1,1 0,1 37,5 100,0 410 Agricultural machinery and tractors 3,7 3,5 33,9 0,0 1,7 11,1 0,0 19,0 4,3 0,1 2,2 100,0 322 Machine-tools for working	438	Carpets, linoleum and other floor coverings	26,3	5,1	21,2	0,8	2,3	5,8	1,0	10,0	12,3	1,1	14,3	100,0
433Ready-made clothing1.94.32.2.80.91.717.20.732.01.56.310.8100.0455Other textile goods6.35.926.31.011.113.30.610.93.611.110.1100.0491Jewellery, goldsmiths' and silversmiths' wares39.00.36.80.21.45.10.626.71.10.718.3100.0493Photographic and cinematographic laboratories2.26.713.80.22.316.50.119.71.00.137.5100.0494Toys, games, sports goods2.83.12.90.25.923.11.214.82.60.216.2100.0322Machine-tools for working metal2.51.356.10.03.17.10.216.12.20.111.3100.0323Textile machinery, sewing machines4.70.955.70.02.16.10.220.42.70.27.0100.0324Mach. for the food, drink and tobacco industries2.34.844.10.11.710.30.221.64.70.69.7100.0325Plant for mines, stel industry, civil engineering5.93.035.70.01.618.00.313.83.30.118.2100.0326Transmission equipment3.51.055.20.01.3<	451	Mass-produced footwear	0,3	1,6	10,4	0,9	14,6	9,7	0,3	55,2	0,4	3,8	2,9	100,0
433 Other textule goods 0,3 5,9 2,0,3 1,0 11,1 13,3 0,0 10,9 5,0 11,1 100,1 100,0 491 Jewellery, goldsmiths' and silversmiths' wares 39,0 0,3 6,8 0,2 1,4 5,1 0,6 26,7 1,1 0,7 18,3 100,0 493 Photographic and cinematographic laboratories 2,2 6,7 13,8 0,2 2,3 16,5 0,1 19,7 1,0 0,1 37,5 100,0 494 Toys, games, sports goods 2,8 3,1 29,9 0,2 5,9 23,1 1,2 14,8 2,6 0,2 16,2 100,0 322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 16,1 2,2 0,1 11,3 100,0 323 Textile machinery, sewing machines 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 324 Mach. for the food, drink and tobacco industries 2,3	433	Ready-made clothing	1,9	4,3	22,8	0,9	1,/	17,2	0,7	32,0	. 1,5	6,3	10,8	100,0
471 Jowenery, goustinus and site similar wates 37,0 0,3 0,2 1,4 3,1 0,0 2,0,7 1,1 0,7 10,0 10,0 493 Photographic and cimeratographic laboratories 2,2 6,7 13,8 0,2 2,3 16,5 0,1 19,7 1,0 0,1 37,5 100,0 494 Toys, games, sports goods 2,8 3,1 29,9 0,2 5,9 23,1 1,2 14,8 2,6 0,2 16,2 100,0 10,0 Investment goods 321 Agricultural machinery and tractors 3,7 3,5 33,9 0,0 1,7 11,1 0,0 19,0 4,3 0,1 22,6 100,0 322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 20,4 4,7 0,6 9,7 100,0 323 Textle machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 21,6 4,7 0,6 9,7 100,0 324 Mach. for the food, drink and	401	Jewellery goldsmithe' and silversmithe' wares	30.0	0.3	20,5	1,0	11,1	13,3	0,0	26.7	3,0	0.7	10,1	100,0
494 Toys, games, sports goods 2,8 3,1 29,9 0,2 5,9 23,1 1,2 14,8 2,6 0,2 16,2 100,0 Investment goods 321 Agricultural machinery and tractors 3,7 3,5 33,9 0,0 1,7 11,1 0,0 19,0 4,3 0,1 22,6 100,0 322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 16,1 2,2 0,1 11,3 100,0 323 Textile machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 20,4 2,7 0,2 7,0 100,0 324 Mach. for the food, drink and tobacco industries 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,4 6,3 0,1 12,6 100,0 325 Plant for mines, steel industry, civil engine 2,0	493	Photographic and cinematographic laboratories	22	67	13.8	0,2	23	16.5	0,0	19.7	1,1	0,7	37.5	100,0
Investment goods 321 Agricultural machinery and tractors 3,7 3,5 33,9 0,0 1,7 11,1 0,0 19,0 4,3 0,1 22,6 100,0 322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 16,1 2,2 0,1 11,3 100,0 323 Textile machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 20,4 2,7 0,2 7,0 100,0 324 Mach. for the food, drink and tobacco industries 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 5,7 0,0 1,4 6,3 <	494	Toys, games, sports goods	2.8	3,1	29,9	0,2	5.9	23,1	1.2	14.8	2,6	0,2	16,2	100,0
321 Agricultural machinery and tractors 3,7 3,5 33,9 0,0 1,7 11,1 0,0 19,0 4,3 0,1 22,6 100,0 322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 16,1 2,2 0,1 11,3 100,0 323 Textile machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 20,4 2,7 0,2 7,0 100,0 324 Mach. for the food, drink and tobacco industries 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 5,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 1,6 100,0 327 Other machinery and equipment for specific use		Investment goods												
322 Machine-tools for working metal 2,5 1,3 56,1 0,0 3,1 7,1 0,2 16,1 2,2 0,1 11,3 100,0 323 Textile machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 20,4 2,7 0,2 7,0 100,0 324 Mach. for the food, drink and tobacco industries 2,3 4.8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 55,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 12,6 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 347 Electric lights, other electric lighting	321	Agricultural machinery and tractors	3.7	3.5	33.9	0.0	1.7	11.1	0.0	19.0	4.3	0.1	22.6	100.0
323 Textile machinery, sewing machines 4,7 0,9 55,7 0,0 2,1 6,1 0,2 20,4 2,7 0,2 7,0 100,0 324 Mach. for the food, drink and tobacco industries 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 55,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 12,6 100,0 327 Other machinery and equipment for specific use 1,1 1,3 57,2 0,0 1,4 6,3 0,1 19,2 1,8 0,2 11,5 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 3,3,9 0,2 9,1 100,0 364 Aerospace equipment manu	322	Machine-tools for working metal	2.5	1.3	56.1	0.0	3.1	7.1	0.2	16.1	2.2	0.1	11.3	100.0
324 Mach. for the food, drink and tobacco industries 2,3 4,8 44,1 0,1 1,7 10,3 0,2 21,6 4,7 0,6 9,7 100,0 325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 55,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 12,6 100,0 327 Other machinery and equipment for specific use 1,1 1,3 57,2 0,0 1,4 6,3 0,1 19,2 1,8 0,2 11,5 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 364 Aerospace equipment manuf. and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 247 Glass and glasswar	323	Textile machinery, sewing machines	4,7	0,9	55,7	0,0	2,1	6,1	0,2	20,4	2,7	0,2	7,0	100,0
325 Plant for mines, steel industry, civil engineering 5,9 3,0 35,7 0,0 1,6 18,0 0,3 13,8 3,3 0,1 18,2 100,0 326 Transmission equipment 3,5 1,0 55,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 12,6 100,0 327 Other machinery and equipment for specific use 1,1 1,3 57,2 0,0 1,4 6,3 0,1 19,2 1,8 0,2 11,5 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 364 Aerospace equipment manuf. and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 <i>Intermediate goods</i>	324	Mach. for the food, drink and tobacco industries	2,3	4,8	44,1	0,1	1,7	10,3	0,2	21,6	4,7	0,6	9,7	100,0
326 Transmission equipment 3,5 1,0 55,2 0,0 1,3 13,3 0,3 11,2 1,6 0,1 12,6 100,0 327 Other machinery and equipment for specific use 1,1 1,3 57,2 0,0 1,4 6,3 0,1 19,2 1,8 0,2 11,5 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 364 Aerospace equipment manuf. and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 Intermediate goods Intermediate goods 247 Glass and glassware 7,0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1	325	Plant for mines, steel industry, civil engineering	5,9	3,0	35,7	0,0	1,6	18,0	0,3	13,8	3,3	0,1	18,2	100,0
327 Other machinery and equipment for specific use 1,1 1,3 57,2 0,0 1,4 6,3 0,1 19,2 1,8 0,2 11,5 100,0 347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 364 Aerospace equipment manuf. and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 <i>Intermediate goods</i> 7.0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals : : : : : : : 10,1 1,7 16,1 100,0 256 Other chemical products for industrial purposes 4,7 2,5 37,2 0,3	326	Transmission equipment	3,5	1,0	55,2	0,0	1,3	13,3	0,3	11,2	1,6	0,1	12,6	100,0
347 Electric lights, other electric lighting equipm. 1,0 2,7 28,5 0,1 3,2 8,1 0,0 13,1 33,9 0,2 9,1 100,0 364 Aerospace equipment manuf. and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 Intermediate goods 247 Glass and glassware 7,0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals : : : : : : : : : : 100,0 256 Other chemical products for industrial purposes 4,7 2,5 37,2 0,3 2,2 17,0 0,9 7,3 8,4 0,3 19,3 100,0 431 Wool industry : <t< td=""><td>327</td><td>Other machinery and equipment for specific use</td><td>1,1</td><td>1,3</td><td>57,2</td><td>0,0</td><td>1,4</td><td>6,3</td><td>0,1</td><td>19,2</td><td>1,8</td><td>0,2</td><td>11,5</td><td>100,0</td></t<>	327	Other machinery and equipment for specific use	1,1	1,3	57,2	0,0	1,4	6,3	0,1	19,2	1,8	0,2	11,5	100,0
364 Aerospace equipment manul, and repairing 2,0 0,2 10,7 0,0 1,1 28,8 0,4 8,5 5,4 0,1 42,8 100,0 Intermediate goods Intermediate goods 7,0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals :<	347	Electric lights, other electric lighting equipm.	1,0	2,7	28,5	0,1	3,2	8,1	0,0	13,1	33,9	0,2	9,1	100,0
247 Glass and glassware 7,0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals : : : : : : : : 1 1,7 16,1 100,0 256 Other chemical products for industrial purposes 4,7 2,5 37,2 0,3 2,2 17,0 0,9 7,3 8,4 0,3 19,3 100,0 431 Wool industry : : : : : : : 1 : 100,0 432 Cotton industry : : : : : : : : : 100,0 481 Manufacture of rubber products 6,0 1,1 28,7 0,3 7,7 23,9 1,0 13,9 4,0 0,4 12,9 100,0 <td>304</td> <td>Aerospace equipment manul, and repairing</td> <td>2,0</td> <td>0,2</td> <td>10,7</td> <td>0,0</td> <td>1,1</td> <td>28,8</td> <td>0,4</td> <td>8,5</td> <td>5,4</td> <td>0,1</td> <td>42,8</td> <td>100,0</td>	304	Aerospace equipment manul, and repairing	2,0	0,2	10,7	0,0	1,1	28,8	0,4	8,5	5,4	0,1	42,8	100,0
247 Glass and glassware 7,0 1,6 29,9 0,3 3,3 26,3 2,6 13,0 3,1 1,2 11,8 100,0 248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals : </td <td></td> <td>Intermediate goods</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1. 2. 12</td> <td></td> <td></td> <td></td> <td></td>		Intermediate goods								1. 2. 12				
248 Ceramic goods 1,5 1,7 28,7 0,7 8,1 10,5 0,3 29,6 1,1 1,7 16,1 100,0 251 Basic industrial chemicals : : : : : : : 100,0 256 Other chemical products for industrial purposes 4,7 2,5 37,2 0,3 2,2 17,0 0,9 7,3 8,4 0,3 19,3 100,0 431 Wool industry : : : : : : : : : 100,0 432 Cotton industry : : : : : : : : : : : 100,0 481 Manufacture of rubber products 6,0 1,1 28,7 0,3 7,7 23,9 1,0 13,9 4,0 0,4 12,9 100,0	247	Glass and glassware	7,0	1,6	29,9	0,3	3,3	26,3	2,6	13,0	3,1	1,2	11,8	100,0
256 Other chemical products for industrial purposes 4,7 2,5 37,2 0,3 2,2 17,0 0,9 7,3 8,4 0,3 19,3 100,0 431 Wool industry : : : : : : : : : 100,0 432 Cotton industry : : : : : : : : : 100,0 481 Manufacture of rubber products 6,0 1,1 28,7 0,3 7,7 23,9 1,0 13,9 4,0 0,4 12,9 100,0	248	Resic industrial chemicals	1,5	1,7	28,7	0,7	8,1	10,5	0,3	29,6	1,1	1,/	10,1	100,0
431 Wool industry :	256	Other chemical products for industrial purposes	47	25	37.2	03	22	170	0.0	72	8.4	0.3	10 2	100,0
432 Cotton industry : <th:< th=""> <th:< th=""> :</th:<></th:<>	431	Wool industry				:	2,4	:		1,0	0,4			100.0
481 Manufacture of rubber products 6,0 1,1 28,7 0,3 7,7 23,9 1,0 13,9 4,0 0,4 12,9 100,0	432	Cotton industry	a all some	and and	STO IL	: : .	1		Ser.	1		1	1	100,0
	481	Manufacture of rubber products	6,0	1,1	28,7	0,3	7,7	23,9	1,0	13,9	4,0	0,4	12,9	100,0

Share of each member country in intra-EC exports: sectors most affected by 1992

													%
		BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR 12
	High-technology, public-procurement related market	s											
	GROUP I												
330	Office machinery	3.8	0.6	23.8	0.0	35	13.8	12.8	94	10.0	0.3	21.0	100.0
344	Telecommunications equipment	4.5	2.9	35.1	0,0	0.9	13.9	2.8	7.8	7.8	1.1	23.0	100,0
372	Medical and surgical equipment	7,8	3,2	26,8	0,0	1,3	10,6	13,0	8,6	14,5	0,4	13,7	100,0
	Traditional public-procurement and regulated marke	ts											
	GROUP 2												
257	Pharmaceutical products	11,7	4,5	22,6	0,3	3,3	16,8	4,8	8,9	8,7	0,6	17,9	100,0
315	Boilers, reservoirs, tanks, containers	10,7	3,7	36,5	0,0	1,4	13,9	1,8	11,7	8,3	2,1	9,9	100,0
362	Railway rolling-stock	3,0	0,1	56,9	0,0	2,3	15,5	0,1	6,0	6,1	0,2	9,8	100,0
425	Wine and beverages based thereon	0,0	0,1	30,5	0,3	7,9	15,3	0,0	44,8	0,3	0,0	0,8	100,0
427	Brewing and malting	22,8	10,1	21,8	0,0	0,4	18,6	5,2	0,2	12,6	0,1	8,2	100,0
428	Soft drinks, natural spa waters	27,9	0,6	15,7	0,0	0,1	25,6	4,1	2,1	20,4	0,1	3,3	100,0
	GROUP 3												
341	Insulated wires and cables	11,0	0,6	31,5	1,2	6,2	11,2	6,3	11,8	9,2	5,2	5,8	100,0
342	Electrical machinery	5,7	1,8	45,2	0,3	2,1	1/,/	1,9	8,2	0,/	0,8	9,1	100,0
301	Snipouliding Snaphetti macaroni etc	2,1	14,4	23,1	0,2	2,8	11,9	0,8	9.5	1/,/	0,5	0.6	100,0
421	Cocoa, chocolate, sugar confectionery	14,1	1,2	19,9	0,2	1,4	11,3	6,1	6,7	31,3	0,1	7,7	100,0
	Sectors with moderate non-tariff barriers												
	GROUP 4												
	Consumer goods												
345	Electronic equipment and apparatus	11,9	3,0	39,2	0,1	1,0	15,0	1,4	9,6	2,0	2,1	14,8	100,0
346	Domestic-type electric appliances	2,3	2,6	33,8	0,1	4,5	11,7	2,8	33,4	3,7	0,2	5,0	100,0
351	Motor vehicles	19,9	0,1	41,1	0,0	9,0	15,1	0,1	7,0	3,7	0,6	3,6	100,0
438	Carpets, linoleum and other floor coverings	43,9	2,8	15,4	0,7	0,7	4,7	1,4	6,9	16,7	0,8	6,1	100,0
451	Mass-produced footwear	1,3	0,8	5,9	0,8	9,7	7,4	0,3	59,0	3,6	1,9	3,4	100,0
453	Ready-made clothing	10,4	0,8	20,9	3,0	1,2	11,4	1,9	27,0	8,3	0,2	8,4	100,0
400	Journal and and a silversmithe' wares	20,7	2,0	10,9	1,0	3,5	3.6	1,/	0,1	27	0.6	40.7	100,0
491	Photographic and cinematographic laboratories	5.0	23	19.4	0,2	4.4	17.2	0.8	24.9	2,1	0.0	23.8	100,0
494	Toys, games, sports goods	8,3	1,2	22,5	0,1	6,3	11,8	4,2	18,3	8,5	0,5	18,3	100,0
	Investment goods												
321	Agricultural machinery and tractors	9,4	3,6	35,2	0,0	0,7	12,5	0,5	19,7	6,5	0,0	11,9	100,0
322	Machine-tools for working metal	8,3	1,1	44,6	0,1	4,6	8,0	0,9	17,7	5,8	0,2	8,7	100,0
323	Textile machinery, sewing machines	6,3	1,4	49,0	0,1	3,1	10,1	0,3	17,5	5,1	0,6	6,6	100,0
324	Mach. for the food, drink and tobacco industries	5,9	3,5	42,2	0,1	2,8	9,0	0,5	18,4	9,2	0,3	8,1	100,0
325	Plant for mines, steel industry, civil engineering	11,6	2,1	38,7	0,0	1,5	14,8	1,0	9,3	8,1	0,1	12,9	100,0
326	Transmission equipment	4,5	0,4	46,1	0,0	2,1	15,8	0,2	15,4	4,5	0,6	10,5	100,0
521	Other machinery and equipment for specific use	3,0	1,5	25.4	0,0	1,5	1,1	0,0	17,4	5,5	0,1	9,2	100,0
364	Aerospace equipment manuf, and repairing	12,2	1,2	48 5	0,0	3,2	11,0	0,5	10.8	4.0	0,5	20.0	100.0
304	Intermediate goods	3,1	0,4	40,0	0,1	1,0		0,5	10,0	4,0	0,1	20,0	100,0
747	Glass and glassware	21.3	0.7	24.7	0.0	29	19.5	16	14.8	79	0.7	59	100.0
247	Ceramic goods	63	0.9	28.1	0,0	5.5	10.7	0.8	30.8	5.1	2.7	8.9	100.0
251	Basic industrial chemicals	-					-			1	:	1201	100,0
256	Other chemical products for industrial purposes	12,3	0,9	33,2	0,2	1,3	15,3	1,7	5,0	14,3	1,3	14,5	100,0
431	Wool industry	:		All a C		-		1.	: :		1		100,0
432	Cotton industry			Call the state		:		1.		1960 1	and the	Statistics.	100,0
481	Manufacture of rubber products	11,0	0,8	26,8	0,2	5,5	23,9	1,5	12,6	7,0	0,2	10,5	100,0

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1, November 1978	— Annual Economic Report 1978-79 — Annual Economic Review 1978-79
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 25, September 1985 26, November 1985 27, March 1986 28, May 1986 29, July 1986 30, November 1986 31, March 1987 	 Competitiveness of European industry: situation to date The determinants of supply in industry in the Community The development of market services in the European Community, the United States and Japan Technical progress, structural change and employment Annual Economic Report 1985-86 Annual Economic Review 1985-86 Employment problems: views of businessmen and the workforce Compact — A prototype macroeconomic model of the European Community in the world economy Commission report to the Council and to Parliament on the borrowing and lending activities of the Community in 1985 Annual Economic Report 1986-87 Annual Economic Report 1986-87 The determinants of investment
 25, September 1985 26, November 1985 27, March 1986 28, May 1986 29, July 1986 30, November 1986 31, March 1987 	 Competitiveness of European industry: situation to date The determinants of supply in industry in the Community The development of market services in the European Community, the United States and Japan Technical progress, structural change and employment Annual Economic Report 1985-86 Annual Economic Review 1985-86 Employment problems: views of businessmen and the workforce Compact — A prototype macroeconomic model of the European Community in the world economy Commission report to the Council and to Parliament on the borrowing and lending activities of the Community in 1985 Annual Economic Review 1986-87 Annual Economic Report 1986-87 The determinants of investment Estimation and simulation of international trade linkages in the Quest model

33, July 1987

- 34, November 1987
- 35, March 1988
- 36, May 1988
- 37, July 1988
- 38, November 1988
- 39, March 1989
- 40, May 1989

41, July 1989

- 42, November 1989
- 43, March 1990
- 44, October 1990

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