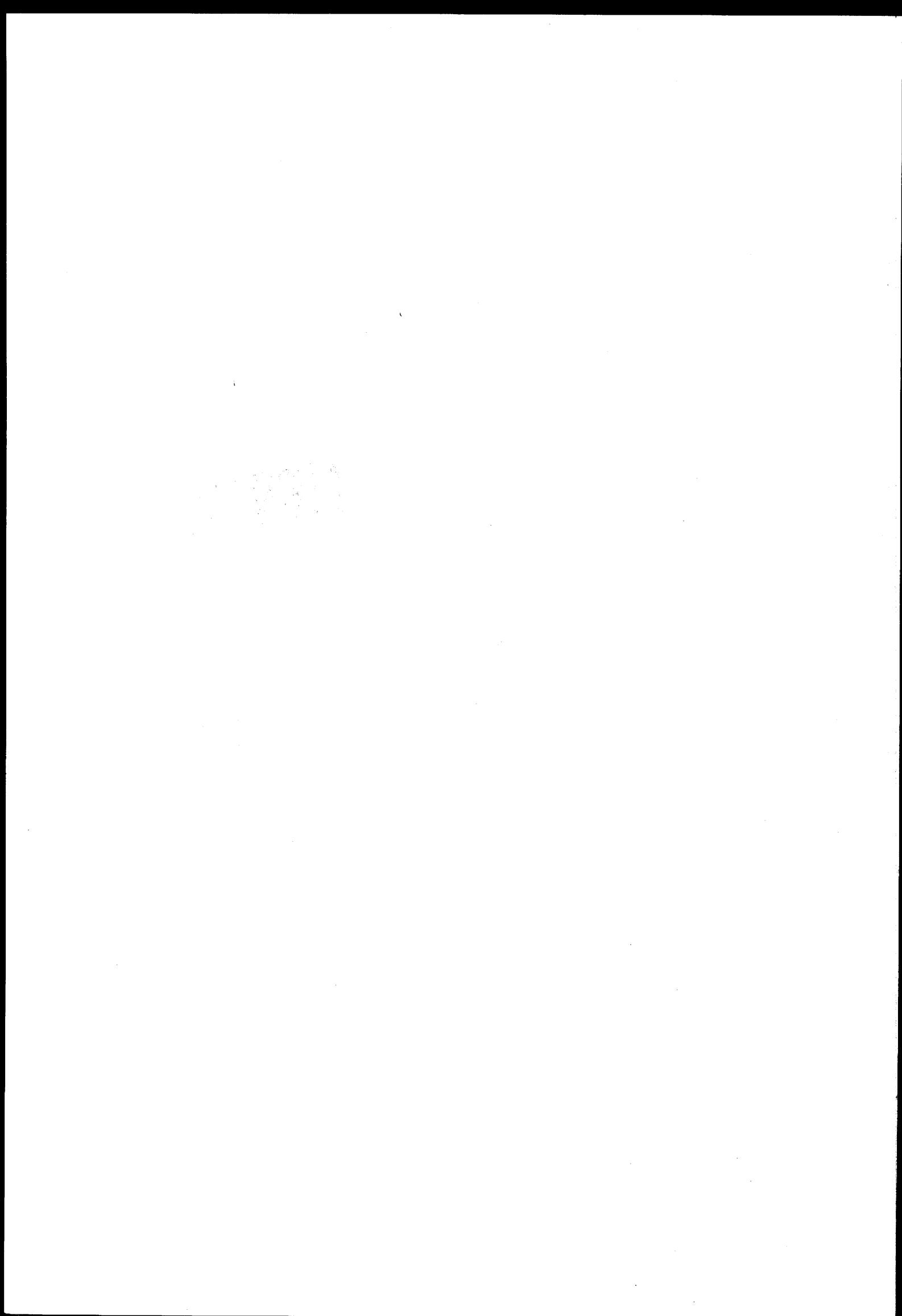*The Single Market Review*

EUROPE

SUBSERIES IV: IMPACT ON TRADE AND INVESTMENT

Volume 1:

Foreign direct investment

The Single Market Review

IMPACT ON TRADE AND INVESTMENT

FOREIGN DIRECT
INVESTMENT

The Single Market Review series

The Single Market Review

IMPACT ON TRADE AND INVESTMENT

FOREIGN DIRECT INVESTMENT

The Single Market Review

SUBSERIES IV: VOLUME 1

CEE: XIV/16

This report is part of a series of 39 studies commissioned from independent consultants in the context of a major review of the Single Market. The 1996 Single Market Review responds to a 1992 Council of Ministers Resolution calling on the European Commission to present an overall analysis of the effectiveness of measures taken in creating the Single Market. This review, which assesses the progress made in implementing the Single Market Programme, was coordinated by the Directorate-General 'Internal Market and Financial Services' (DG XV) and the Directorate-General 'Economic and Financial Affairs' (DG II) of the European Commission.

This document was prepared for the European Commission

by

Economists Advisory Group Ltd

It does not, however, express the Commission's official views. Whilst every reasonable effort has been made to provide accurate information in regard to the subject matter covered, the Consultants are not responsible for any remaining errors. All recommendations are made by the Consultants for the purpose of discussion. Neither the Commission nor the Consultants accept liability for the consequences of actions taken on the basis of the information contained herein.

The European Commission would like to express thanks to the external experts and representatives of firms and industry bodies for their contribution to the 1996 Single Market Review, and to this report in particular.

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List of abbreviations

APEC	Asia-Pacific Economic Council
ASEAN	Association of South-East Asian Nations
EC	European Community
EFTA	European Free Trade Association
EMS	European Monetary System
ERM	Exchange Rate Mechanism
EU	European Union
EUR-6	Belgium, Germany, France, Italy, Luxembourg and Netherlands
EUR-12	EUR-6 plus Denmark, Ireland, UK, Greece, Spain and Portugal
FDI	foreign direct investment
FTA	free trade area
GDP	gross domestic product
GFCF	gross fixed capital formation
GNP	gross national product
IMF	International Monetary Fund
JCC	Japanese concentration co-efficient
M&As	mergers and acquisitions
MNEs	multinational enterprises
MOFA	majority-owned foreign affiliate
NACE	general industrial classification of economic activities within the European Communities
NAFTA	North American Free Trade Area
NIE	newly industrialized economy
NTB	non-tariff barrier
OECD	Organization for Economic Co-operation and Development
R&D	research and development
RCA	revealed comparative advantage
REI	regional economic integration
SIC	Standard Industrial Classification
SM	single market
SMEs	small and medium-sized enterprises
SMP	single market programme
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre for Transnational Corporations
VER	voluntary export restraint

Acknowledgements
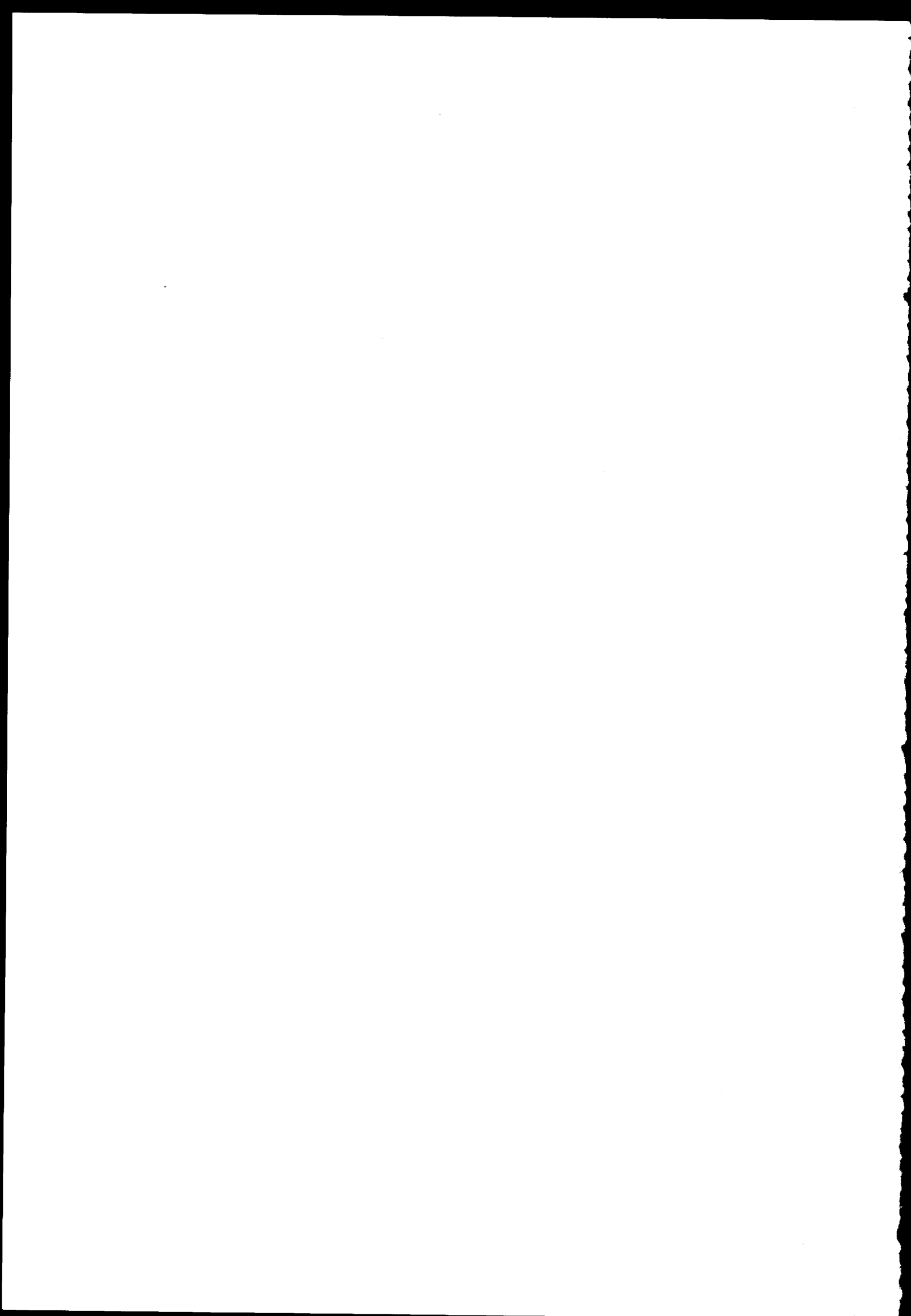
1. Summary

1.1. Overview of FDI trends

In the period 1982–93 the EU became increasingly successful at attracting flows of inward foreign direct investment (FDI). Its share of worldwide inflows surpassed 50% in 1992, before a decline in 1993.

Within the EU, the ratio of FDI inflows to domestic investment also grew over the period 1980–92. The growth was faster than that for all developed countries in aggregate, and contrasts with a decline in the same ratio for the US. All Member States experienced an increase in this ratio except Ireland, with the most significant increases being evident in Belgium/Luxembourg, Denmark, France, the UK and Portugal.

The significance of FDI inward stock to GDP has been increasing worldwide, but this has also been particularly pronounced in the EU, with a substantial rise in the FDI/GDP ratio in 1985–90, the period during which the single market (SM) was underway.

1.2. Theoretical background

It is clear from a comprehensive review of the academic literature that the effects of regional integration on FDI as a result of the single market programme (SMP) are likely to vary significantly according to different home and host countries, industrial sectors and types of FDI. Isolating these effects is made particularly difficult by the absence of comprehensive statistical data on FDI, but there is a general consensus in the literature that economic integration tends to increase FDI within and into the region concerned.

The mechanism by which such an increase may occur can be described as a reconfiguration of three types of advantages available to multinational enterprises (MNEs), known as the OLI configuration. These are:

(a)   the firm-specific Ownership advantages of foreign relative to domestic investors,
(b)   the Locational advantages of particular host countries, and
(c)   the Internalization advantages of FDI as compared with alternative means of serving foreign markets.

1.3. FDI and trade

FDI and trade are part of a spectrum of modalities through which firms in one Member State can serve markets in another. However, they are not substitutes for one another, and firms do not exclusively pursue one modality or the other. Indeed, the evidence strongly suggests that FDI and trade are complementary, as firms integrate their operations across borders by trading intermediate goods and services. Some estimates suggest that as much as one-third of all trade is intra-firm – in effect linking the foreign investments of MNEs to exploit the advantages of internalization.

The complementary nature of FDI and trade is clear for downstream services (where FDI in dealer networks and after-sales services is often necessary to promote sales) and financial

services (where the overseas activities of home-country clients often prompt FDI by the service provider).

In the period 1984–92 the trade/FDI ratios for six manufacturing sectors dropped substantially. Davies and Lyons[1] argue that the high technology public procurement sectors sensitive to the SM should experience a major increase in intra-EU trade and a reduction in intra-EU multinationality as a result of the SM. The present study has confirmed that the trade/FDI relationship has been more oriented towards trade in the more technology-intensive sectors.

1.4. FDI and geographic concentration

FDI increased dramatically worldwide in the late 1980s, which makes establishing an *antimonde* for the SM particularly difficult. The most noticeable changes in member state shares of total FDI inflows to the EU are the strengthened positions of Belgium/Luxembourg and France, and the declining position of the UK over the period 1990–93. The UK nevertheless remains the largest recipient of extra-EU investment, primarily from the US and Japan.

Changes in the relative locational advantages of countries might lead to a redistribution of FDI within the EU. The new literature on economic geography suggests that agglomeration effects could occur in the face of a decline in barriers to trade, with firms concentrating in regions where activity is already high in certain sectors. The study found that increased concentration in financial services has favoured France at the expense of Germany, whereas in electrical goods the UK has increased its share.

1.5. FDI and sectoral distribution

The sectoral pattern of FDI activity has also been considered from a home-country perspective, using an econometric analysis of outward FDI flows from the UK and Germany. Together, these two countries account for more than half of intra-EU FDI stocks. A panel of EU destinations for UK and German FDI was assembled and the USA and Austria (non-participants in the SM) were included as comparators.

It is evident that UK investment in the EU has been higher in all sectors since 1987 than might have been expected without the SM. The SM impact was most marked in financial services. Similar econometric analysis of German outward FDI shows a smaller effect from the SM than is the case for the UK, but with the largest growth in FDI again occurring in financial services. Overall, there has been a clearly positive effect from the SM on growth in intra-EU FDI.

1.6. The SM and levels of intra-EU FDI

Between 1984 and 1992 there was a clear rise in the value of total intra-EU flows of FDI. These increased fourfold from 0.15% of EU GDP to 0.62%, with the main increase in this ratio occurring after 1988. Significantly, intra-EU flows increased as a proportion of total inward FDI flows in the EU from an annual average of 46% in 1984–85, to 55% in 1986–90 and 62% in 1991–93.

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[1]   Davies and Lyons (1996).

More detailed analysis shows that the proportion of outward FDI invested in the EU by both UK and German firms has risen since 1984. The results of our econometric analysis indicate that the SM may have raised the constant price stock of UK FDI in the EU by some US$ 15 billion as of 1992 (around 31% of the aggregate stock level at that date). There is only limited evidence for investment diversion from the USA to the EU in the distribution sector, apart from which FDI by British firms in the US does not seem to have been negatively affected.

In the case of Germany, the SM may have raised the constant price stock of FDI in the EU by US$ 5 billion by 1992 (6.5% of the aggregate stock level). The primary recipient appears to have been the UK. There is, in addition, some evidence that German investment has been diverted away from the USA and Austria in favour of the EU, as a consequence of the SM.

1.7. The SM and levels of extra-EU FDI

Investment by Japanese and US firms in the EU has been primarily market-seeking, with Japanese FDI more oriented towards greenfield investment and US FDI more oriented to M&A activity. Previous research suggested that the SMP itself has been less significant in stimulating Japanese investment than other variables such as market growth and the appreciation of the Yen. Nevertheless, there was a clear surge in such investment in the second half of the 1980s.

Forty per cent of accumulated Japanese investment in Europe by 1991 was in financial services, with only 22% in manufacturing. The latter category is dominated by assembly-based industries, but the number of Japanese R&D facilities has grown significantly since 1990. Overall, however, by 1994 Europe was attracting a lower share of total Japanese FDI than it was in 1990, losing out mostly to the Pacific Rim.

By contrast, the EU/US FDI relationship is more equal in terms of the bilateral volume and the EU share of US FDI has remained fairly steady. Following a dip during the recession of the early 1980s, the EU's share of the total assets of US foreign affiliates rose to nearly 50% in the early 1990s. This surpassed previous levels and reflected an increased concentration of US MNE activity in Europe.

The manufacturing sector is more strongly represented in US (as opposed to Japanese) FDI in the EU, although non-manufacturing investment now accounts for 60% and within that, financial services account for 30%. Current econometric work by Clegg[2] shows market size and market growth to be key determinants of US FDI flows, but tariff discrimination relating to intra-EU transactions has also been a significant factor in the past.

1.8. Corporate responses to the SM

Subjective surveys of trade associations and businesses undertaken for the Commission suggest that the impact of the SM on corporate strategy as it relates to FDI has been limited, but that trade as a means of penetrating EU markets has been positively influenced by the SM. This latter point is supported by the parallel research on trade effects by CEPII (Centre d'études prospectives et d'informations internationales). These surveys show that public procurement liberalization and technical standards harmonization seem to be particularly significant for stimulating FDI in the electrical engineering, consumer electronics and automotive sectors,

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[2]   Clegg (1995).

whilst increases in M&A activity in the food, drink and tobacco sector also seem to have been influenced by the SM.

There has been a clear growth in cross-border M&A activity between 1988–90, both intra-European and extra-European (involving one European and one non-European partner). French firms in particular became much more active in this area. Other non-SM factors may have been important in stimulating this type of activity, and it should also be noted that M&As worldwide experienced a surge in the late 1980s. Nevertheless, Kumar's work on M&As[3] suggests a link between growth in this type of activity and sectoral sensitivity to the SM.

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[3]   Kumar (1994).

2. Introduction and outline of methodology

2.1. Terms of Reference

The Terms of Reference for the study are described in Annex IV of the contract between the Commission and EAG. The focus is on the impact of SM on the evolution of intra-EU flows of FDI.

Specifically, the Terms of Reference require the study to contain the following elements:

(a) a review of literature and previous empirical studies of FDI;

(b) an empirical investigation of explanatory factors for the development of FDI flows in the EU;

(c) an exploration of the role of Japan and the USA and FDI inside the EU in the context of the single market;

(d) identification of the effects of the SM using an appropriate *antimonde*.

The study commenced in February 1995 and an Interim Report was submitted in July 1995. A draft final report was submitted in December 1995, and on the basis of further discussions with Commission services and the academic panel overseeing the study, the present document was submitted in June 1996.

2.2. Data availability and methodology

It must be recognized that there are some limitations associated with the terms of reference of the study. The most severe limitation is the lack of comprehensive statistical data on FDI. Eurostat has collated data on FDI flows within the EU,[4] but these data are not available prior to 1984 and there are, for understandable reasons, numerous country and sectoral gaps. Moreover, use of flow data rather than stock data on FDI can lead to inaccurate conclusions, since flows often vary widely between years, reinvested profits are not included,[5] and there remain differences in the ways that countries record FDI flows which the Eurostat harmonization process has yet to resolve.

EAG has consequently sought data on FDI stocks via its network of academic associates in the EU. These data, together with other relevant sources, have been used in much of the empirical investigation. Nevertheless, the picture remains a much less satisfactory one with regard to data availability and comprehensiveness than is the case, for example, with trade data. In particular, bilateral data (giving both home and host country) at the level of three-digit NACE codes are generally not available for FDI within the EU.

As a first step in the study therefore, a comprehensive review of the relevant literature was undertaken (Chapter 3). This embraced previous work on regional integration, trade theory and FDI, plus the strategic considerations of multinational enterprises (MNEs). From this survey a

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[4] Eurostat (1992).

[5] Until very recently. These can form a significant part of FDI, particularly for the more mature investments of, for example, US firms.

number of plausible stories could be conjectured as to how the SM might impact on the development of intra-EU FDI flows, and these are outlined in Chapter 4. These expectations could be classified under a number of headings which are then explored in greater detail in subsequent chapters. Specifically, these are:

The FDI and trade relationship	(Chapter 5)
FDI and geographic concentration	(Chapter 6)
Sectoral distribution and FDI	(Chapter 7)
The single market and levels of intra-EU FDI	(Chapter 8)
The single market and levels of extra-EU FDI	(Chapter 9)

The methodology for each of these chapters was largely determined by the most appropriate data source. In the absence of publicly available data which might facilitate the sectoral analysis required for the study, EAG has used other appropriate sources, including the commercial AMDATA database compiled by the publication *Acquisitions Monthly*. These data are confined to acquisitions and mergers and are not available before 1989, but can be used as a proxy for FDI with certain qualifications which are discussed in the text.

In order to undertake a more longitudinal analysis including the pre-SM period, econometric techniques were employed in Chapters 7 and 8. This enabled a quantitative assessment to be made as to the impact of the SMP, albeit at a fairly sectorally aggregated level and with a number of caveats. Even at the two-digit level, only two EU countries provide detailed historical data in relation to outward flows of FDI – Germany and the UK. These two countries do, however, account for some 55% of total outward FDI stock from EU Member States, and the panel of host countries (i.e. FDI destinations) which the study team was able to use for Germany included Belgium and Luxembourg, France, Italy, the UK, the Netherlands, Ireland, Spain and Portugal, plus the US and Austria. For the UK, investment in the EU as a whole and in the USA was examined.

Issues related to corporate strategy and the SM are discussed in Chapter 10, which incorporates recent data from the Commission's own survey of 20,000 firms, undertaken as part of the 1996 single market review project. While FDI was not specifically addressed, the survey did ask pertinent questions with respect to, for example, the extent to which the SMP had facilitated establishment in other Member States.

It should further be recalled that FDI can take a variety of forms, including both 'greenfield' investment (establishing a new company from scratch) and mergers and acquisitions (M&As) of existing firms. In recent years this latter form of investment has taken precedence, and has particular implications for job creation, technology transfer and market structure. Issues associated with the surge in M&As – which was by no means limited to the EC – are also discussed in Chapter 10.

In identifying the impact of the SMP we have sought both to take account of other factors influencing FDI within the EU, and to examine the importance of the SM in relation to other factors influencing strategic decisions regarding the location of FDI. However, in reality it is impossible to isolate the SM effect completely, as many other factors which influence FDI – such as market growth and competitive activity – may themselves be affected by the SM.

The SMP itself was clearly a progressive development and the speed of implementation of the relevant directives has varied by Member State. The programme itself also represented a

combination of both sector-specific measures and horizontal measures, the latter of which have affected different sectors to different extents. However, we have attempted to assess the impact of the programme overall on FDI within the EU. Throughout this report the terms EU and EC are used interchangeably to describe the 12 Member States prior to the most recent expansion.

2.3. The single market programme and the drivers of FDI

Economic integration in Europe over the last two decades has been accompanied by a rising level of foreign direct investment. In virtually all Member States, the real levels of inflows and outflows of direct investment after the mid-1980s were at their highest level since the formation of the Common Market. Intra-Community FDI grew even more rapidly than investment from non-EC sources over the period 1984–88.[6] Most of this surge in cross-border investment occurred in the aftermath of the Single European Act of 1986, which foreshadowed the completion of the single market by the end of 1992.

A wide variety of measures to ease non-tariff barriers has been introduced under the single market programme. This includes steps to harmonize technical standards and regulations, the removal of customs barriers, and moves to open public procurement and remove constraints on capital markets. Progress towards the implementation of the single market is described in Hoeller and Louppe (1994). Some of the non-tariff barriers, notably customs controls, would previously have restrained trade linkages, but not market entry by means of direct investment. Others, such as technical requirements and lack of competition in public procurement, would affect both exporters and (potential) foreign subsidiaries (Cantwell and Sanna Randaccio, 1992).

Other particularly important measures have included the Merger Control Regulation[7] adopted by the EC Council in December 1989 which entered into force in September 1990. It should also be noted that other, less obvious barriers to cross-border investment still exist, such as the preference in certain EU countries for bank over equity financing, which limits the ability of firms to make hostile cross-border acquisitions.

Moreover, it is clear that in many sectors the SMP has not created a homogenous single market. Differences persist in national policies on the environment, health and safety and worker representation, and national consumer preferences often remain distinct. The food industry is a widely cited example (Cantwell, 1992b).

However, the overall impact of the single market measures is likely to raise the locational advantages of the European market. This is particularly true for non-European firms (Balasubramanyam and Greenaway, 1991), with direct investment providing a means of gaining tariff-free access to the pan-EU market. The perceived advantages of supplying the European market from within the EU may also have been raised by the uncertainties over the external commercial policy of the European Commission, with widespread use of non-tariff measures such as rules of origin, and anti-dumping policies (Barrell and Pain, 1995).

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[6] The accession of Spain and Portugal in 1986 contributed to a doubling of FDI flows defined as intra-EC.

[7] Council Regulation (EEC) 4064/89 of 21 December 1989 on the control of concentrations between undertakings (OJ L 395, 30.12.1989, p. 1).

In addition, it is important to recognize the role of national (and sub-national) government incentives for FDI. Such incentives can generally be divided into:

(a)   fiscal incentives (to exempt or reduce the tax burden for a foreign investor),

(b)   financial incentives (in the form of funds provided directly to firms to finance FDI), and

(c)   other, often infrastructure-related, incentives designed to enhance the profitability of the local affiliate of a foreign investor.

There is strong competition between host countries in terms of these incentives, the most common being fiscal incentives. Out of 103 countries reviewed in an UNCTAD report, only four did not offer any kind of fiscal incentive to foreign investors in the early 1990s (UNCTAD, 1995b). There is also an increasing use of incentive packages designed to induce MNEs to profile their investment projects so as to contribute to a host country's (or host region's) goals in terms of export promotion, employment creation, worker training, domestic value-added or technology transfer and innovation. FDI incentives can therefore serve a number of development purposes, but can also have distorting effects on FDI which are in some respects similar to those of trade barriers.

The Treaty of Rome does not deal with FDI incentives *per se*, but does give the European Commission broad powers to control state aid to industry, where such aid is incompatible with the Common Market. Since the late 1980s the Commission has taken steps to tighten up its control over state aid, and to improve the transparency of its policy. The European Court of Justice has also ruled that the Commission can forbid regional aid for an investment that would increase over-capacity in the EU or aid that would relocate an investment from a less to a more prosperous region.

This latter ruling has obvious implications for the location-specific advantages of the poorer regions and countries within the EU. However, the focus of Commission attention has been primarily on manufacturing industry rather than on services – in which intense competition for FDI also exists as between countries and regions – and to date a sector-specific rather than region-specific or horizontal view has been taken.

2.4.   An overview of FDI trends in the EU

While stocks are useful indicators of the part of the domestic economy that is controlled by foreign-owned firms, inflows are good indicators of the ability and success of a country in attracting FDI (a reflection of the strength of its location-specific advantages). Outflows in turn reflect the willingness and ability of a country's firms to undertake international production (attributable to their ownership-specific advantages and conditions at home).

A positive, two-way relationship exists between flows and stocks because the former, by definition, add to the latter; furthermore, stocks themselves generate flows in the form of profits for reinvestments or sequential investments. The size of profits, which constitute a component of FDI flows when they become reinvested, is positively related to the size of the investment stock and, of course, the profitability of the investment in a country.

Indeed, the potential of investment stock to generate profits depend on its vintage: older investments are likely to generate more profits than those of an earlier vintage, because problems associated with operating in a new environment have been resolved and, over time and with fuller capacity utilization, average fixed costs have decreased. FDI stock also has the capacity to

generate sequential investments, e.g. through funds raised locally, as well as other tangible and intangible resources, such as technology, training and corporate culture. In turn, flows (sequential investment and reinvested profits generated from existing stocks) add to the stock of investment and further increase its capacity to increase earnings and investments in the future.

Figure 2.1 illustrates the apparent success of the EU in attracting investment in the last decade or so. While the EU's share of outward FDI flows has remained fairly constant since 1984, its share of worldwide inward FDI flows has risen significantly, although the Union remains a net outward investor. This data is presented in greater detail in Table 2.1, which shows that investment flows into the EU accounted for nearly half of worldwide inflows in 1991–93 (or two-thirds of FDI inflows into developed countries).

Table 2.1.   Share of FDI inflows (%) from all countries

	1982–87	1988–90	1991–93
Developed countries	78.1	84.6	67.0
Developing countries	21.9	15.3	33.0
European Union	28.2	42.3	44.4
As percentage of developed countries	36.1	50.0	66.3
Rest of Western Europe	3.4	3.5	3.8
United States	39.9	31.3	10.2
Japan	0.7	..	0.9

Source: Based on UNCTAD (1994) and IMF data.

Underlying recent years has been the shift of FDI away from their traditional hosts in the developed world and into developing countries, indicating a rapid growth in accumulated production capacity by MNEs in developing countries. While their share of FDI outflows (Table 2.2) has also risen significantly since the mid-1980s, the striking growth in inflows accounted for by developing countries is indicative of an emerging global economy. It must be noted however, that although developing countries' share of total inflows is at record levels, four-fifths of the inflows were to only ten developing countries, and into China in particular (UN, 1995a).

Table 2.2.   Share of FDI outflows (%) from all countries

	1982–87	1988–90	1991–93
Developed countries	98.0	95.8	95.3
Developing countries	2.0	4.2	4.7
European Union	47.4	48.2	50.2
As percentage of developed countries	48.4	50.3	52.6
Rest of Western Europe	7.9	11.2	7.1
United States	19.8	11.6	22.4
Japan	13.4	20.3	11.2

Source: Based on UNCTAD (1994) and IMF data.

Figure 2.1 **EU share of FDI flows (% of all countries)**
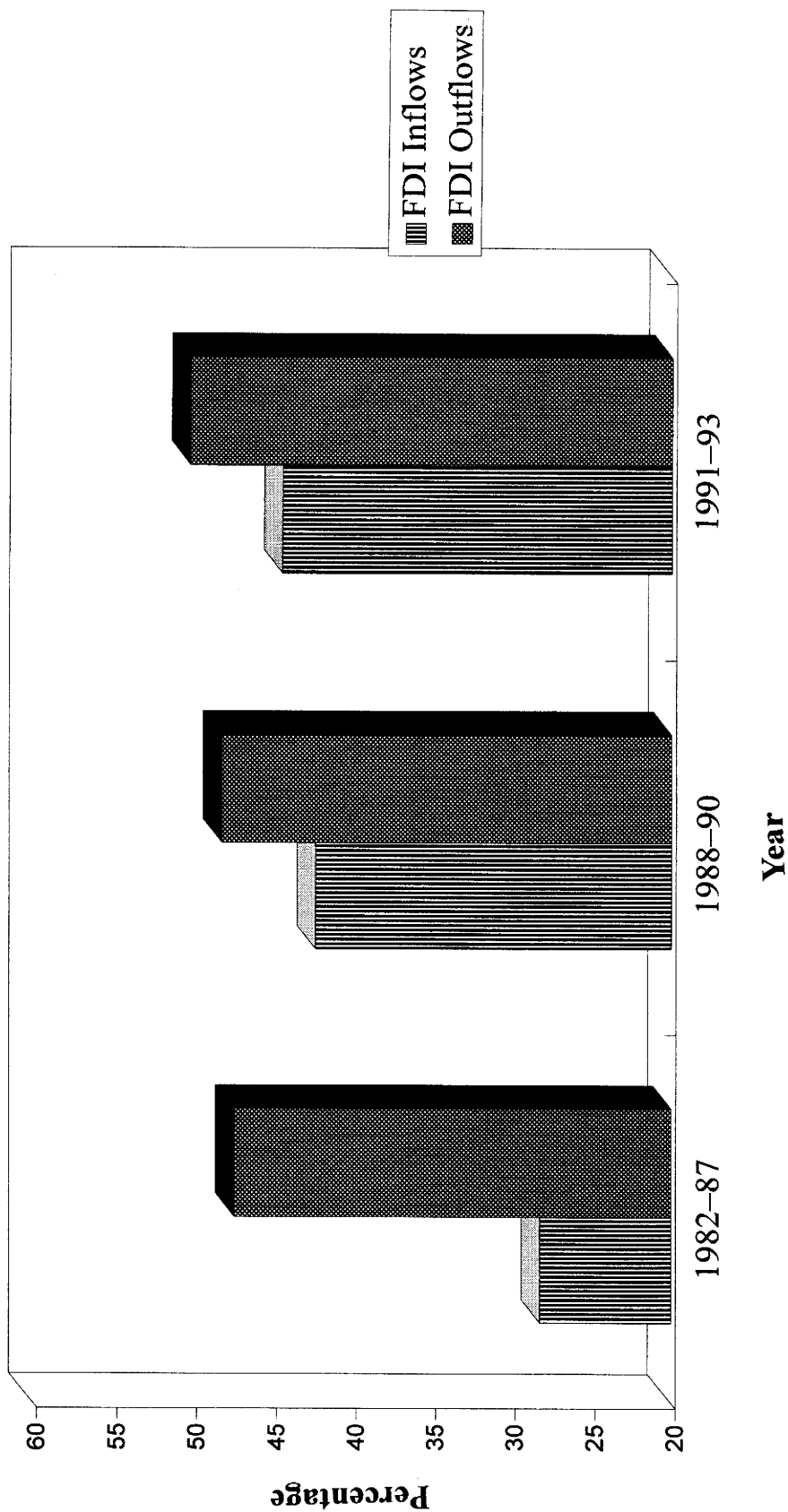
As expected, developed countries are still the dominant outward investors. EU outflows have climbed steadily to a record high of over half of worldwide outflows. This peak was mirrored by a substantially lower share for the other European countries and the US. Having increased throughout the 1980s, Japanese outflows started to decline from 1990.

Table 2.3.   Average annual increase in FDI inward stock from all countries (%)

	1980–85	1985–90	1990–92	1992–93
Developed countries	8.2	29.5	5.3	7.1
Developing countries	15.1	14.7	13.7	16.9
European Union	4.1	44.0	6.5	8.6
Rest of Western Europe	4.6	35.2	3.8	9.5
United States	24.5	22.8	3.1	4.6
Japan	1.1	1.0	5.9	1.1

Source: Based on UNCTAD (1994) and IMF data.

When stocks (rather than flows) are considered, almost all countries saw FDI surge in the late 1980s. Tables 2.3 and 2.4 show that European Union inward and outward stock experienced particularly high annual growth rates during the period when the SM was being implemented, before settling down to just above average rates (for developed countries overall) in the early 1990s, while also remaining well above growth rates for the US. Developing countries as a group have done remarkably well in the 1990s compared with developed countries.

Table 2.4.   Average annual increase in FDI outward stock from all countries (%)

	1980–85	1985–90	1990–92
Developed countries	6.2	28.7	8.3
Developing countries	75.5	35.9	18.0
European Union	6.3	32.2	9.7
Rest of Western Europe	7.5	50.1	4.9
United States	2.8	14.4	6.6
Japan	30.7	76.3	11.9

Note: The 40% rise in the Japanese yen between 1985 and 1987 (against the dollar) explains the exaggerated figure for Japan during the period 1985–90.
Source: Based on UNCTAD (1994) and IMF data.

Table 2.5 shows that the relationship between inward FDI and local investment is still growing in the case of the European Union, while for the US the significance of FDI has become substantially less in the early 1990s. This of course may partly reflect the different phasing of the economic cycle in these two regions, with the US going into – and coming out of – recession prior to the EU. The growing significance of FDI inflows for developing countries is also apparent.

Table 2.5.   **Significance (ratios) of FDI inflows to gross fixed capital formation (GFCF)**

	1980–85	**1985–90**	**1990–92**
Developed countries	2.3	4.4	3.1
Developing countries	2.4	2.7	5.9
European Union	2.8	5.6	5.7
Rest of Western Europe	1.6	3.4	3.2
United States	3.4	7.1	2.0
Japan	0.1	..	0.2

Source: Based on UNCTAD (1994) and IMF data.

Table 2.6 demonstrates that while the significance of FDI inward stock to GDP is still going up worldwide, the European Union's share compared with that of the rest of the world has gradually increased, most markedly in the period 1985 to 1990, and remains higher than for most developed countries. Both tables underline the important role which FDI plays in the EU economy, in contrast to both the US and, in particular, Japan.

Table 2.6.   **Significance (ratios) of FDI inward stock to GDP**

	1980	**1985**	**1990**	**1992**
Developed countries	4.7	6.4	8.4	8.2
Developing countries	5.2	9.2	5.5	9.2
European Union	5.8	8.7	11.3	11.5
Rest of Western Europe	4.7	6.4	7.7	8.3
United States	3.2	4.7	7.3	7.1
Japan	3.0	2.5	2.6	1.1

Source: Based on UNCTAD (1994) and IMF data.

3. Literature review: theories of regional integration, trade and foreign direct investment

3.1. Introduction

Economic integration between countries may take a variety of forms, ranging from an agreement between two or more countries to reduce or remove discriminatory trade restrictions with each other, to common markets and complete economic and monetary union.[8] Customs unions and free-trade areas are the most prevalent forms of economic integration. In the case of a free-trade arrangement, partners agree to liberalize trade among themselves but to maintain their own tariff and other commercial policies *vis-à-vis* the rest of the world. In a customs union, partners agree not only to liberalize their mutual trade but to adopt a common set of tariffs on imports from third countries. Common markets extend beyond the integration of product markets to that of factor markets and policy harmonization for fiscal and monetary matters also becomes an important pre-requisite of a properly functioning common market.

The links between regional economic integration (REI), trade, and FDI are complex and vary with the form of integration initiated. An economic union exerts a different impact on FDI to that of a common market or a simpler form of integration such as a customs union. Trade and investment, however, are not always substitutes for each other. The very fact that, despite the disappearance of internal tariffs, FDI by EC-based MNEs has expanded rapidly within the Community, shows that this is not the case (Safarian, 1985).

The focus of much of the earlier research on US FDI abroad resulted in a one-sided orientation toward the locational implications of the trade-diverting effects of customs unions. Because of this, it failed to provide a comprehensive framework for linking the theory of economic integration with the theory of FDI. This is primarily because it ignored the consequences of integration on the ownership and organization of economic activity – a question that is central to the theory of international production. It follows that any satisfactory explanation about the effects of the two stages of EC integration so far undertaken,[9] therefore, must draw upon the extant theories of REI and trade of FDI. The primary concern is to examine how the various effects on costs, competitiveness, market size and market growth, stemming from the removal of barriers to trade within the region, affect the determinants of FDI that are identified by the theory of international production.

The focus of this report is on the consequences of what might be called Mark II EC integration on the level and structure of FDI in the EU, and especially that of intra EU-FDI.[10] From the

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[8] Jovanovic (1992) identifies five main types of international economic integration: a free-trade area, a customs union, a common market, an economic union and a total economic union. These are classified according to the extent to which five criteria are met, including the removal of tariffs or quotas on trade, the presence of a common external tariff, the freedom of movement of factors of production, the harmonization of economic policies and a total unification of economic policies.

[9] The first stage of EC integration (Mark I integration) began on 1 January 1958, and the second stage (Mark II integration) came into being on 1 January 1993 with the formal commencement of the single market.

[10] It is recognized that the distinction between Mark I and Mark II integration is not of course an exact one and that the process of integration has involved gradual and overlapping developments.

formation of the Common Market in 1958 and extending into the mid-1980s, the process of European integration has been an ongoing process for over 30 years. Much of MNE adjustment to Mark I integration was in response to the removal of tariff barriers in the single market, although various practices and policies of the European Commission have also affected the ownership and organization of economic activity.[11] In contrast, FDI in the context of the Mark II programme is being motivated mainly by the removal of non-tariff barriers (NTBs), which are classified into four main groups, namely discriminatory purchasing procedures, border controls, differences in technical standards and differences in fiscal duties. Unlike tariffs, NTBs vary both in intent and impact. The Cecchini Report demonstrated that any harmonization of technical standards and regulations would be likely to have different economic repercussions than that arising from the removal of physical barriers, or the injection of competition into public procurement, or the standardization of some intra-EU fiscal duties (Cecchini, Catinat and Jacquemin, 1988).

But not only does the impact of the single market on shaping the reactions of firms vary with the nature of the NTBs, its effect will also be greatly determined by the structural characteristics of the sectors and countries in question. And in so far as MNEs have a different propensity to invest in these sectors and countries, the removal of NTBs will also differ for individual firms, and, indeed, for the modalities of production and servicing markets. These differences essentially reveal themselves in the production and transaction costs of doing business. For example, the principal consequence of Mark I integration was to allow member countries to better exploit their comparative dynamic trading advantages, based both on their natural and created resource endowments and on economies of scale. It also helped promote the common ownership of cross-border activities in FDI-intensive sectors (Markusen, 1995). In so far as the transaction costs of NTBs are different to those of tariff barriers[12] and affect countries, sectors and firms in different ways, it may be expected that their impact on the modalities of production and servicing markets may also be different.

3.2. The theory of regional economic integration

The theory of REI identifies a number of consequences that result from ·geographically-discriminatory trading arrangements (customs unions, free-trade areas, common markets or preferential trading agreements, both reciprocal or non-reciprocal) (Robson, 1987). These consequences may be both static and dynamic, and may be direct (affecting a particular industry directly) or indirect (affecting an industry via changes in the costs and prices of intermediate products or service inputs). The static effects result from the creation or diversion of trade which may occur when the external tariff is set at a level above the average of the national tariffs of the

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[11] For example, with respect to competition and restrictive business practices, the establishment of a regional fund and the movement towards a common European company law.

[12] The transaction costs of tariff barriers primarily represent an addition to the transport costs of exporting or importing goods and services. Those of NTBs represent a whole range of cost-enhancing measures which affect not only the *plant*-specific costs for production of goods and services, but *firm*-specific costs of transacting and co-ordinating the various extra-plant activities, including the procurement of inputs and the marketing and distribution of outputs. It is only very recently that economists have paid serious attention to the effects of economic integration on these latter costs – and on how they may help upgrade the competitive advantages of multi-product firms whose activities spread across national boundaries. Before proceeding to consider the possible impact of the SMP on FDI, it is useful to review the kind of expectations suggested by received economic analysis. Apart from the theory of economic integration *per se*, we can draw upon two sets of analytical tools to analyse the consequences of economic integration, namely the theory of international trade and the theory of FDI, or more particularly, the theory of international production.

customs union partners prior to integration. Trade creation within a bloc gives rise to resource re-allocative effects between products, regions and nations. In short, it encourages intra-union rationalization of production in accordance with the partner country's comparative advantage. Trade diversion results from the relative tariff discrimination *vis-à-vis* third-country exporters, produced by the re-alignment of tariffs. The effect is to shift the sources of supply from those more efficient third-country producers to less efficient producers within the region. When the common external tariff is set at a level below that of the average pre-union tariffs of the customs union partners, external trade creation could result. It follows that external trade destruction can also result from a customs union adopting higher external common tariffs than the pre-union average tariffs of the partner countries. Finally, export trade diversion is likely to occur in cases in which the profitability of exports inside the customs union market increases relative to outside markets as a result of the tariff re-alignment.

Regarding the dynamic effects of customs unions, one of the most important is the opportunities it offers to economic agents to better exploit the economies of scale. When such economies are present, the formation of customs unions leads to two additional effects: cost-reduction effects and trade-suppression effects as the region becomes a more competitive supplier of its own needs. Other dynamic effects are productive efficiency (X-efficiency) gains resulting from the intensification of competition.

According to the theory of REI, a reorganization of production – resulting from trade creation and expanded internal market opportunities emerging from trade diversion or trade-suppression effects and efficiency gains – create stimuli to investment and (through the combined multiplier and accelerator effects) exert an upward pressure on income growth. Those macroeconomic effects of customs unions are an integral part of the dynamics of customs union formation.

On this basis, it is instructive to distinguish between primary or initial effects of integration and the secondary or consequential effects (Dunning, 1993b). The former kind embraces the immediate consequences of integration for the costs of supplying goods and services from various locations. The primary consequence of this kind of integration is to increase the competitiveness of goods exported from one member of the customs union to another, relative to those produced by firms which only sell domestically.[13] Such locational consequences (or trade diversion effects) will affect countries, sectors and firms in different ways. For example, following the removal of non-tariff barriers related to EC 92, the elimination of border controls typically benefits smaller firms, the cessation of discriminatory government procurement policies disadvantages uncompetitive firms located in their country, while the benefits from harmonization of technical standards are reaped particularly by firms (typically MNEs) which already had their polycentric or regiocentric organizational strategies in place before their competitors.

However, of the greatest long-term significance in the restructuring and growth potential of the integrating economies are the dynamic and secondary effects of regional integration. These result mainly from the geographical and industrial restructuring of production and markets by multi-activity firms within and outside the integrated region, and from the new opportunities for

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[13] Concerning firms from outside the integrated area, the locational effects will depend upon the value of the common external tariff and/or level and structure of non-tariff barriers relative to those previously imposed by individual countries. On balance, firms supplying the integrated market from outside should also benefit from the removal of intra-country trade barriers.

'insider' firms to increase their technical and scale efficiencies by reducing their production and transaction costs. Furthermore, economic integration is likely to spur innovation and technological progress and lead to the redesign of organizational structures (Eaton, Lipsey and Safarian, 1994a).

3.3.   The new theories of trade

The theory of trade is essentially concerned with the effects of economic integration on the *location* of economic activity, and the extent to which particular markets in the integrated area are serviced by exports or by local production. However, until recently, trade theory had paid only scant attention either to the nationality of ownership of economic activity, or to the possibility that such activity might be part of a diversified or multinational firm.

In the new standard trade theory, trade and gains from trade can arise independent of any pattern of traditional comparative advantage as firms exploit economies of scale and pursue product differentiation strategies in an environment of imperfect competition.

In a major theoretical study Helpman and Krugman concluded that:

> The existence of vertically integrated [MNEs] breaks the monotonic link between differences in relative factor endowments and the volume of trade, on one hand, and the share of intra-firm trade, on the other. The volume of trade and the share of intra-firm trade increase [as a result of MNE operations] as the difference in relative factor endowments widens so long as this difference is not too large. But when the difference in relative factor endowments is sufficiently large, the shifting by [MNEs] of intermediate input product lines to subsidiaries reduces the share of intra-firm trade while maintaining a constant volume of trade.[14]

The above quotation reflects a view in which trade patterns are consistent with the principle of comparative advantage, but where the realization of economies of scale through specialization provides an additional incentive, giving rise to trade even if countries have identical tastes, technology and factor endowments.

The prediction of such a theory is that, when a high degree of product differentiation is characteristic of industries, countries with very different factor proportions may be expected to engage in inter-industry trade while similarly endowed countries will mostly engage in intra-industry trade. Similarly, intra-firm trade is expected to be larger, the larger the difference in the countries' composition of factor endowments.

Although some acknowledgement of the role of MNEs is introduced into the analysis through a focus on the geographical concentration of headquarters and production facilities, multi-plant production does not arise because of the assumption of zero trade costs and assumptions ensuring factor-price equalization. Crucially, ownership advantages are ignored, i.e. no distinction is made between domestic and multinational firms.

Geography-and-trade theory is a natural extension of the line of research taken by the new trade theory. The focus here is on how industry agglomeration and regional differentiation can arise endogenously as a result of transport costs, market sizes and the trade policy regime. Recent such literature sheds some interesting light on the forces determining the location of economic activity.

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[14]   Helpman and Krugman (1985).

Krugman's (1991) thesis, for example, deals with international factor mobility and concentration of economic activity. His work urges a rethink of the conventional perspectives (as embodied in the Heckscher-Ohlin model) in that it takes account of the pervasive influence of increasing returns evidencing the geographic concentration of production. In Krugman's view, much trade represents arbitrary specialization based on increasing returns, rather than an effort to take advantage of exogenous differences in resources or productivity. His research points to the fact that many industries are highly concentrated geographically. Interestingly, it is suggested that the most highly concentrated industries are not technology-intensive sectors, and that the most spectacular examples of localization today are based on services rather than manufacturing.

Concentration tends to take place when transportation costs fall and economies of scale increase. The interaction between these two forces can explain uneven development within a region, with industries that have a head start in production attracting industry away from those with less favourable initial conditions. A reduction in transportation costs does not necessarily shift production away from the centre to the periphery. In the words of Krugman:

> The reason is that reducing transportation costs has two effects: it facilitates locating production wherever it is cheapest, but it also facilitates concentration of production in one location, so as to realize economies of scale. And when production is concentrated, it may pay to concentrate it at the location with higher costs but better access. (Krugman, 1991, p. 96)

It is further noted by Krugman that the extent of industry localization within the EU remains considerably less than within the US. (European nations are less specialized than US regions.) He suggests that barriers to trade, and particularly non-tariff barriers are the obvious reason for this.

In a related contribution, Krugman and Venables (1990) offer some interesting ideas regarding Europe's centre-periphery patterns. The usual assumption – that with improved access to low-wage regions to the advanced European core manufacturing will shift to the periphery of the EU – is put into question: improved access might actually hurt, not help, peripheral industry.

Although the new approach to trade theory and the literature on 'geography and trade' (the latter approach being particularly identified with the work of Paul Krugman) has increased understanding of the causes and consequences of trade by introducing the concepts of increasing returns to scale, imperfect competition, and product differentiation to more traditional comparative-advantage-based trade models, the dominant assumption has remained one of single-plant national firms (i.e. a firm as a unit that produces one product in one location). Multiplant and multiproduct production, whether horizontal or vertical, remained excluded from the analysis: there has been no room for the analysis of MNEs *casu quo* the national ownership of firms, although such industries as are characterized by imperfect competition and scale economies are typically dominated by MNEs.

Following clear indications of FDI growing considerably faster than international trade among developed countries, and with a very large proportion being two-way investment among similar developed countries, international trade theory increasingly provides an explanation of trade patterns in which the MNEs play a central role: intersectoral, intra-industry, as well as intra-firm trade, have gradually become part of the analysis.

While the standard oligopoly model of the new trade theory had excluded MNEs by assumption, most recently, Markusen and Venables (1995) have developed a model which not only distinguishes between plant- and firm-level scale economies and the existence of trade barriers

(such as tariffs and transport costs), but also explicitly introduces the ownership of MNEs. Their 'convergence hypothesis' suggests that MNEs become more important relative to uni-national firms (i.e. relative to trade) as countries become more similar in relative factor endowments and technologies. It is observed that, if two countries differ in terms of their relative factor endowments or technology, 'then firm ownership tends to reside exclusively in the 'advantaged' country ... unless transport costs are very small. If the difference is in country size, however, there are many more parameterizations in which firms owned in the smaller country exist in equilibrium.'[15] In line with such predictions, it has been observed that FDI has been growing rapidly, with the bulk of it being of the horizontal kind between countries with similar per capita incomes, similar relative factor endowments, and relatively low trade barriers. FDI increases in relation to trade (although not necessarily absolutely) as tariff and transport costs increase (Markusen, 1995).

In a trade framework, MNEs can be viewed as the exporters of the services of firm-specific assets, typically based on human capital, such. as management, engineering, marketing, and financial services. These services can be seen as imports by subsidiaries in exchange for repatriated profits, royalties, fees, or output. (Markusen, 1995)

In terms of the impact of the SMP on patterns of trade, efficiency and welfare, gains through the mobility of goods and factors can be expected via increasing returns to scale, greater competition, and more efficient resource allocation (European Commission, 1996).

A key issue in this regard relates to the distinction between intra- and inter-industry trade. Inter-industry trade is associated with differences in factor endowments, while intra-industry trade is associated with product differentiation. Inter-industry trade between countries carries efficiency gains (via re-allocation of resources) and gains for consumers who are confronted with a new set of relative prices. Intra-industry trade carries gains for consumers, who value variety *per se*, or find more-preferred products; with additional efficiency gains from increasing returns due to the competition-enhancing effects of international trade (European Commission, 1996).[16]

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[15] Markusen and Venables (1995).

[16] This needs to be qualified by two empirical recommendations: when quantifying intra-industry trade, a distinction between vertical and horizontal differentiation must be adhered to, while bearing in mind a clear definition of a product based on price considerations and nomenclatures; inter-industry trade must be disconnected from its traditional comparative advantage basis, so as to allow for new considerations such as externalities, agglomeration effects, etc.

Two opposing forces must be evaluated: to what extent will the elimination of NTBs lead to specialization according to comparative advantage of the member countries, on the one hand; and to what extent will economies of scale lead to greater concentration of industries, on the other?

A current survey on intra- versus inter-industry trade flows due to the SMP (European Commission, 1996) suggests that the SMP will lead to an increase of *intra*-industry trade between the high income core countries of the EC ('North–North'), and possibly between the lower income non-core countries ('South–South'); and to an increase of *inter*-industry trade between high and lower income countries ('North–South').

A more general conclusion is that monolithic representations of the trade effects of European integration are implausible given a large diversity of expected trade patterns, as determinants, nature and effects of trade are highly dependent on market structures (European Commission, 1996).

3.4. The theory of foreign direct investment

While the particular characteristics of foreign owned (as opposed to domestically-owned) production are not (and have never been) of much interest to trade theorists,[17] the theory of FDI, by contrast, is primarily concerned with the consequences of regional integration for FDI, either into or out of the Member States; and whether this takes the form of extra- or intra-regional FDI. Drawing upon the theory of trade and location, the theory of FDI is also concerned with identifying the specific consequences of the *foreign* ownership of economic activity within the integrated region on the structure and location of that activity. In other words, FDI theory examines the impact of integration on the competitive advantages of firms of different nationalities, the location of activities associated with these advantages, and the way in which these advantages are organized jointly with the resource capabilities of the host countries.[18]

The theory of FDI[19] suggests that the propensity of a firm to engage in foreign production depends on the combination of ownership specific advantages, internalization opportunities and locational advantages in the target market. MNEs seek to utilize their firm-specific assets (ownership advantages) in conjunction with location-bound assets that are host-country specific (location advantages), preferring to do so through FDI when there are benefits associated with the use of hierarchies rather than with market mechanisms and inter-firm alliances (internalization advantages) (Dunning, 1993a).

If a firm has only an ownership advantage without internalization advantages and, moreover, without any incentive to establish foreign value-added networks, it will use contractual resource transfers, such as licensing and technical service agreements, to enter a market other than its own. The export method of servicing non-domestic markets is used when the firm enjoys ownership-specific and internalization advantages, but the location-specific advantages of supplying those markets favour the home country. FDI is the main instrument to capture a foreign market if a firm has will and capacity to exploit simultaneously ownership and internalization advantages from a foreign location. Thus, when early research on EC integration and FDI emphasized that the formation of the European customs union led to 'tariff jumping' by means of FDI into the Community, it implied that the process of integration enhanced the locational advantages of the countries served by exports from the US or other non-EC countries, thus leading to a surge of FDI.

Ownership-specific assets or skills, both tangible or intangible, are referred to as such because they are assumed to be unique to firms of a particular nationality of ownership. Locational factors determine which aspects of a country's immobile assets attract or retain FDI. By themselves, locational factors explain the distribution of the world's productive activities, i.e. why production occurs where it does. If production techniques and knowledge are uniformly

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[17] Trade theory is relatively good at explaining why *country* share of world production is what it is, but less good at explaining *company* shares, or why so much production in virtually every country is controlled by companies based elsewhere (McCulloch, 1996).

[18] For a survey of the current state of FDI theory, see Dunning (1993a).

[19] We take FDI to be a proxy for international production (as there is no adequate information on production or sales). Following the IMF definition, FDI refers to investments made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor's purpose being to have an effective voice in the management of the enterprise.

distributed across national borders, the location of production will simply depend on differences in factor costs, tariffs, transportation costs, and the size of markets. Such factors can make it advantageous to locate production in the market being served rather than exporting (Teece, 1986).

The relationship between the level and nature of locational advantages, and the extent and nature of a particular country's inward and outward FDI is an interactive one, in that over time FDI affects the nature of the locational advantages. Following Buigues and Jacquemin (1992), two types of locational advantages can be distinguished, namely those based on efficiency considerations, and those related to the strategic behaviour of MNE to increase or defend its market power. The search for increased efficiency is linked to reducing production and transaction costs, whereas strategic goals are linked to the pursuance of market power and control over prices.

Internalization advantages determine by means of what organizational forms (markets, firms or alliances) firms choose to exploit their firm-specific assets. In conjunction with ownership advantages, internalization advantages explain the national identity of the firms engaging in FDI. Again, it is useful to distinguish between the internalization of those markets intended to advance or exploit monopoly power, and those designed to achieve a more efficient allocation of resources (Teece 1985); although the organizational structure adopted as a result of FDI can be seen as a pursuit of efficiency-seeking and strategic goals simultaneously (Buigues and Jacquemin, 1992).

Most recently, strategy has been introduced as a dynamic fourth determinant of FDI (Dunning, 1993a). A growing complexity of interdependence among MNEs entails that the issue of the location of production encompasses the element of business strategy, which is developed in relation to the firm's competitive environment (Buigues and Jacquemin, 1992; Eaton, Lipsey and Safarian, 1994a). For this analysis, the growing importance of business strategy more generally, means a gradual shift of focus from locational factors to explanations of international production analysed as an aspect of microeconomic strategy in Chapter 10 of this report. As competition is the key concept in any corporate matter, industry-level explanations will also receive increasing attention.

The focus of strategic management on the behaviour of established MNEs (i.e. on their existing value-adding activities) rather than on firms contemplating FDI for the first time is reflected in an important distinction between initial act of FDI and sequential acts of foreign production (Kogut, 1993). Particularly in the case of the SM, investment decisions affecting the already established MNE subsidiaries in the EC are increasingly important compared to those affecting first time investments.[20] Accordingly, MNEs typically pass first through an internationalization phase, where investments are located in response to local markets and supplies, which is followed by a regionalization and/or globalization phase, where the emphasis in investment and divestment is on rationalizing existing operations to secure efficient networks, often under strong competitive pressures (Dunning, 1993b).

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[20] With the possible exception of FDI by Japanese and Third World MNEs.

3.5. Interface between REI theory, trade theory and FDI theory

For the most part, the received theory of REI assumes perfect competition, homogeneous products, and absence of transaction costs, while its core theory of customs union analysis also excludes inter-country factor mobility. Modern trade theory corrects some of these deficiencies, but in general, and understandably, concentrates on the location of economic activity rather than its ownership. (One exception is Markusen, 1995.) Consequently, the extant theories of REI and trade can help us only to a limited extent in our understanding of the impact of the SM on foreign (as compared to domestic) direct investment. In this latter respect, an amalgam of the modern theory of trade and that of FDI (which follows an industrial organization orientation) would seem a more promising approach to analysing this interaction, as it treats regional economic integration as a variable influencing both trade and FDI, and in so doing emphasizes the implications of the distinctive ownership and organizational characteristics of the investing firms.

Moreover, the theory of FDI not only helps to explain how regional integration changes locational advantages, but also how it affects the distribution of ownership advantages between firms of different origins, and the configuration of both ownership and locational advantages. In addition, it provides the analytical tools by which one can identify differences in the responses of foreign versus domestic firms to regional integration. For example, it has been argued that the dynamic effects of customs unions will improve the competitive advantages of firms located inside a customs union. By expanding market size and creating opportunities for scale economies, higher levels of innovative activity can be stimulated, by allowing firms to sustain larger R&D expenditures. Increased innovative capacity provides the route for the accumulation of ownership advantages that firms could not have obtained if they continued to operate within the boundaries of fragmented, smaller markets. However, it has also been argued that MNEs from outside the region may be in a better position to exploit the economies of governance arising from producing in different parts of a customs union. This is especially likely to be the case where intra-regional non-tariff barriers are specific to cross-border investments by firms domiciled in the integrated area.

However, both the approaches of modern trade and FDI analysts need to be combined. FDI then becomes the strategic response of firms coping with changes in relative competitiveness, locational advantages and organizational forms brought about by the formation of customs unions. The strategic response of MNEs to the creation of customs unions gives rise to what Charles Kindleberger (1966) called investment-creation and investment-diversion phenomena, which are in direct relation to the static trade-creation and trade-diversion effects without their welfare implications. Investment creation, i.e. the surge of inward FDI from non-member countries, can be regarded as the strategic response of firms to trade diversion. Investment diversion, on the other hand, is a strategic response to trade creation, which requires the reorganization of production inside the customs union, thus calling for a shift of MNE activity from one Member State to another.

The investment creation and investment diversion dichotomy, however, does not fully capture the complexity of the effects of regional integration on FDI. Most theories of international production explicitly (for a review see Dunning, 1993a) distinguish between different types of motivation for FDI: market seeking (defensive and aggressive), resource seeking, efficiency seeking (reorganization and rationalized) and strategic-asset seeking. Each of these types of MNE activity are very differently affected by regional integration. In turn, the primary and

secondary consequences of such activity on the location, ownership and organization of international production, are also very different.

Defensive market-seeking investment is, in part, a response to the tariff or non-tariff barriers. As such barriers fall, the changing locational advantages of exporting and importing countries may lead to intra-regional investment being replaced by intra-regional exports. This has recently been demonstrated in the case of intra-North American FDI, as one of the responses to the Canada–US Free Trade Agreement (Eaton, Lipsey and Safarian, 1994a). Efficiency-seeking FDI can be of two kinds. Reorganization investment is designed to take advantage of differences in the geographical disposition of natural or created factor endowments, and will normally lead to a re-allocation of economic activity in accordance with Member States' comparative advantages. This frequently entails a regrouping of production facilities in fewer locations where more favourable costs are found. Sometimes this leads to more vertical specialization of particular processes along the value-added chain; and sometimes to the horizontal specialization of products across value chains. Where such specialization reflects differences in natural resources or labour costs (i.e. resource-seeking FDI), it is often between countries between different stages of economic development.

The dynamic effects of regional integration imply that production costs in locations inside the region will fall in the medium to long term, making those locations better locations better places for international sourcing by MNEs. Such improvements in the costs of production will, through enhanced efficiency, encourage rationalized investment, i.e. FDI intended to take advantage of economies of scale and scope and/or 'X-efficiency' enhancing measures.

Integration is also likely to give rise to positive economic effects, and hence increases in the rate of market growth occur. Similarly, as a result of dynamic effects of integration, the size of the barrier-free market within which the firm operates expands. These growth-enhancing and market-augmenting effects of integration give rise to offensive market-seeking investment, i.e. investment whose motivation is to take advantage of growing demand and the opening up of new markets. Finally, strategic-asset-seeking FDI is prompted primarily by the need to tap into or acquire foreign assets (or merge), in order to protect or advance the investing firms regional or global competitive position. Typically this kind of MNE activity occurs in capital, technology or information intensive sectors, and those in which an oligopolistic market structure is the norm. (In the single market such investment is taking place between firms in the larger and most advanced industrial countries, in response to the removal of non-tariff barriers). Some of the possible responses of FDI to regional economic integration are summarized in Table 3.1.

It is useful to reiterate that the theory of trade and the theory of FDI (or more particularly, the theory of international production) should be regarded as complementary, rather than competing, theories.

This also reflects empirical findings which show a positive correlation between FDI outflows of major investor countries, on the one hand, and their exports to and imports from the host countries, on the other. This evidence supports the 'globalization hypothesis' (Gundlach and Nunnenkamp, 1994), according to which both FDI and trade are driven by a common set of determinants, which goes against the widespread belief that FDI simply replaces trade. Rather than FDI causing trade or trade causing FDI in a uni-directional way, the extent and direction of trade and FDI flows are simultaneously determined by globalization strategies. In other words, the fact that trade and FDI are often employed together in successful corporate globalization

strategies is in line with the observed positive correlation between trade and FDI flows, where FDI is not only positively correlated with exports of home countries, but also with exports of host countries.[21]

Table 3.1.   The effects of regional economic integration on FDI

Macroeconomic effect of integration	Strategic response of MNEs	Likely net trade effect	Likely net FDI effect
Intra-regional trade more effective than extra-regional trade[1]	Replace exports with FDI (defensive market-seeking investment)	Decline as sales by regionally based foreign affiliates replace exports to the region	Increased investment in regionally based foreign affiliates
New configuration of locational advantages among members of the region	Adjusting existing investments in the region to reflect intra-regional trade (reorganization investment)	No effect/possible increase; intra-regional trade could rise if reorganization leads to increased plant and country specialization. Extra-regional exports could rise if region's industries become more competitive in world markets	For the region as a whole: gains in some countries offset by losses in others
Cost reduction and efficiency gains	Increase value-adding activities within region; integrate with other offshore investments (rationalized investment)	Possible decrease if less is imported into the region; possible increase if exports from the region rise	Increased FDI as MNEs increase sourcing in the region.
Market expansion, demand growth and technical progress	Gain first-mover advantages via FDI (offensive market-seeking investment)	No effect, if demand in regional market grows faster than supply	Replacement exports with FDI

[1]   Assumes that integration does not result in lower external tariffs than previously existed among individual countries, and that non-tariff barriers do not prevent the growth of intra-regional trade.

Source: Adapted from UNCTC (1992).

3.6. Intra- and extra-EU FDI

Finally, it is necessary to distinguish between the impact of integration on intra-regional FDI and extra-regional FDI. Again, it is only by combining trade and FDI theories that one can come close to explaining the consequences of the SMP for extra- and intra-EC FDI in the EC. Each of the types of FDI will have an effect on the level of FDI into the region, as well as on the distribution of such investment within the region. Reorganization investment presupposes the presence of MNEs inside a trading bloc before economic integration. Therefore, such strategies may not lead to a net increase in FDI inside the region, but rather to a change in its geographical and/or industrial configuration, e.g. the consolidation of the activities of MNEs in fewer, larger plants.

Regarding defensive market-seeking investments, their location within the region differs according to whether the investment is made in response to trade-diversion or trade-suppression

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[21] Worldwide sourcing and marketing have become major parameters of competitiveness through cost savings and new sales outlets. Globalization has been encouraged by various factors; transaction and information costs have declined, capital markets have been liberalized, and many business services have become tradable. The boom of FDI is the clearest indication of globalization. In 1982–92, worldwide FDI flows grew 3.3 times faster than international trade flows (Gundlach and Nunnenkamp, 1994).

effects. In the former case, the investment is probably located in a partner country other than that whose source of supply from the rest of the world has become cost-prohibitive. In the latter, it is likely to locate inside the Member State which experiences a shift in the source of its import supplies. Cost-reducing effects will generate either reorganization or rationalized investment, depending on whether a MNE is currently supplying the market of the integrated area via exports from outside locations or from production facilities inside it. In the former case, there will be rationalized investment as production costs inside a trading bloc fall with opportunities from production economies of scale. In the latter, reorganization investment will result in a concentration of output in a smaller number of plants.

X-efficiency gains will attract rationalized investment as the costs of intermediate inputs become relatively cheaper inside the integrated area (Baldwin, 1989). Overall, the removal of market fragmentation and the stimulus to growth from the dynamic effects of customs unions open up new opportunities for FDI to firms with strong ownership-specific advantages and internalization opportunities. These opportunities will encourage new FDI in the region.

However, as seen before, the effect of regional integration on the extent and character of FDI will depend not only on its impact on the ownership, locational and internalization advantages, which are based on efficiency considerations, but also on the specific form of the integration and its impact on the strategic behaviour of MNEs and other firms. The strategic response is motivated by defending or advancing market power and reflected in a range of strategies such as 'pre-emption', 'creation of excess capacity', 'absorb the rival', 'follow the leader', and 'exchange of threats', all following the Hymer (1960) tradition.

We now turn to a more detached analysis of the way in which regional integration may affect the nature and quality of FDI.

3.7. Integrated international production – the quality of FDI

To comprehend the increase in complexity of corporate integration and the implications for different kinds of regional integration, the concept of the value chain (i.e. the process by which a firm combines its own assets with material and labour inputs, which inputs are subsequently assembled, marketed and distributed) provides us with a useful tool. For our purposes, we shall break down a firm's value chain into three stages, namely:

(a)   R&D,
(b)   production (this can be sub-divided further as and when the data are available),
(c)   marketing and distribution.

Some of these value-adding activities are linked together vertically and subsequently, whereas others occur at any and all points on the chain and are linked horizontally.

Both the trade and the FDI literature suggests that regional economic integration is likely to affect each of these stages of the value-added chain, and, consequently, the quality of cross-border production, in different ways. Indeed, one of the major contributions of such economists as Helpman and Krugman (1985) and Markusen and Venables (1995) has been to distinguish between firm and plant economies of scale, and the division of labour between high value activities at the headquarters of MNEs and the lower value activities in their foreign affiliates.

Accordingly, the essence of modern trade and FDI theories varies according to whether the cross-border activities of firms are horizontal or vertically organized.[22] In the case of horizontal integration strategies, MNEs are likely to supply the same line of goods or services from each facility in several different locations. In the case of a strategy of vertical integration, MNEs are likely to produce outputs in some facilities which serve as inputs in other facilities located across national boundaries.

To describe the complex interface between corporate strategies and regional economic integration, it is necessary to examine the ways in which the different elements of the value chain of the MNE are combined and co-ordinated. Such an approach needs to provide insights into the extent of which the three different stages of production (vertical rationalization) and the specialization of end products (horizontal rationalization) are likely to be concentrated within particular countries in the EC or are dispersed throughout the region.

Different qualities of FDI are a reflection of the evolving nature of the strategies and structures of firms *casu quo* MNEs over time, in that a firm's internal organization can be seen as a gradual process in search of an optimal hierarchical structure. The effect on economic integration has been a qualitative shift from 'shallow' to 'deep' integration, the main feature of which is a shift of the modality of cross-border transitions from arms-length trade to integrated international production and inter-firm strategic alliances.

'Shallow' integration is often government-led and follows the removal of tariff barriers to trade in goods (i.e. the formation of a free trade area (FTA) or a customs union). It is effected by the strategic response of MNEs in establishing 'stand-alone' affiliates which operate largely independently, typically replicating the entire value chain (except for R&D) of the parent firm. Such 'stand-alone' or 'multi-domestic' strategies (Porter, 1986) result in MNEs having largely autonomous subsidiaries in each country which they manage like a portfolio. In such a scenario, foreign affiliates can be seen as miniature replicas of the parent company performing all tasks necessary for servicing the host country and/or neighbouring markets.

Subsequently, a move to outsourced international production is the result of the expanding geographical reach of MNE strategies. Parts of the value-chain are transferred abroad to exploit the locational advantages of other countries than the home country or countries of final sale. In 'simple integration' strategies, outsourced production is controlled by the parent MNE, either through ownership (where the affiliate supplies the parent specific inputs) or through non-equity arrangements with local firms, such as subcontracting. Such strategies have both given rise to new forms of cross-border linkages and allow for greater two-way flows of information, technology and value-added activities between parent firms and affiliates (UNCTAD, 1994).

'Deep' integration is the removal of internal barriers that discourage the efficient allocation of international production within the region[23] and is driven by the desire of MNEs to strengthen their competitive position within the regional market. Accordingly, MNEs have been turning

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[22] To some extent, this reflects a rather important distinction regarding MNEs, which relies on whether the product in question is either resource-based or technology-based. Roughly speaking, rents are either extracted from a local resource or from proprietary technology.

[23] This includes elimination of barriers to trade in business services, right of establishment and fair treatment for FDI, and protection of intellectual property.

their geographically dispersed affiliates and fragmented production systems into regionally or globally integrated production and distribution networks as part of 'complex integration' strategies. Globally integrated MNEs seek to maximize competitive advantage from their international presence, through locating their various functional activities wherever they can be performed most effectively. As part of the firm's overall strategy, this might even include transferring R&D activities away from the MNE's original home economy. In this scenario, international production can occur at almost any point on the value chain. Each operation is judged in terms of its contribution to the entire value chain; and there is substantial functional integration among the different processes and the different locations, although not every element of the value chain will be integrated to the same degree (UNCTAD, 1994). The relationship between the three kinds of MNE strategies, the role of their foreign affiliates and the kind of external environment in which they might be expected to flourish is set out in Table 3.2.

Table 3.2.   The strategies and structures of transnational corporations

Strategy	Intra-firm linkages	Type of foreign affiliate	Degree of corporate integration	External environment
Stand-alone, e.g. multi-domestic	Ownership, technology, finance; mostly uni-directional	Miniature replica of the parent firm	Weak	Host country accessible to FDI; trade barriers; costly communication and transportation
Simple integration, e.g. outsourcing	Ownership, technology, markets, finance, other inputs; mostly bi-directional; subcontracting	Rationalized producer of one or a few elements in the value chain	Strong at some points of value chain; weak in others	Open trade and FDI regimes, at least bi-laterally; non-equity arrangements permissible
Complex integration at the regional or global levels	All functions; mostly multi-directional	Product or process specialist; functional specialization	Potentially strong throughout value chain	Open trade, technology FDI and related regimes; use of advanced information technology; convergence in tastes; heightened competition; low communication and transportation costs

Source: Adapted from UNCTAD (1994).

It should be observed at this point that, although manufacturing MNEs (given their highly transnational nature) have tended to be among the first to adopt 'complex integration' strategies, after a slower take-off (due to the inherently limited trade ability of some services), some service MNEs have advanced their integration further than many of their counterparts (UNCTAD, 1994). At the same time, viewed from a global strategic perspective, the traditional sectoral boundaries between manufacturing and services are becoming increasingly irrelevant. Indeed most MNEs are now internalizing this traditional division within their value-added chain by integrating both service and manufacturing functions.

3.8.   Modalities of foreign involvement

An important element of 'complex integration' is regional or global search by MNEs in an increasing number of industries for complementary/innovative (strategic) assets through co-operative agreements with other firms (Jacquemin, 1991).

Such arrangements are not necessarily limited to two partners, and they can well result in a network of horizontal alliances (Chesnais, 1990), while the same partners expand at the same time into vertical complexes (Michalet, 1990).[24]

The growing emphasis placed by MNEs on the continuous development of their knowledge base requires substantial flows of technology, skills, goods and services. Increasingly, differentiated products flow not only between parents and affiliates, but also among affiliates, with the implication that the distinction between parent firm and affiliate is becoming less meaningful. Not only are hierarchical structures turning into networks, but such networks are themselves connected with other corporate networks, through a variety of inter-firm linkages. These range from subcontracting, to licensing agreements, to research consortia and strategic alliances. They are a reflection of the fact that transactions increasingly involve inter-firm co-operation or affiliation resulting in a widening of the behavioural options open to firms regarding their choice and organization of value-adding activities (Dunning, 1993b). Such co-operative inter-firm agreements have become so pervasive among firms in advanced industrial countries that firm boundaries are often very difficult to define in any meaningful way.

Strategic alliances are of particular importance among these inter-firm linkages as they typically bring large and otherwise competing firms together for specific purposes (UNCTAD, 1994). They are increasingly seen as a way of exploiting jointly competitive advantages while at the same time avoiding the difficulties that evolve when corporate cultures of large companies need to be combined (OECD, 1992).[25] Having become an important tool in carrying out global (or regional) 'complex integration' strategies, such non-equity forms of foreign involvement exemplify most prominently the recent widening of strategic options open to MNEs.

Inter-firm alliances are agreements or arrangements between independent firms typically lacking equity transfers and organized for specific functions, most prominently in R&D and distribution. Although there is nothing especially new about co-operation agreements, what is new is the popularity of all sorts of alliance – joint venture, product licensing, research consortia, supply agreements, and so on. Cross-border alliances have risen sharply in the 1980s, (Hagedoorn, 1993), and particularly so in the high technology sectors. They typically occur in big international industries such as automobiles, computers, aerospace, telecommunications, drugs, defence, in which the products are complicated and fairly expensive. Approximately 90% of all alliances in recent years have been between firms of the industrialized world and involving activities in the developed world itself (Hagedoorn, 1993).

Lack of financial resources and high costs and financial risks of innovation have sometimes thought to be major motives for co-operative alliances. According to Hagedoorn and Schakenraad (1991), however, alliances are entered into for three main reasons, namely to gain access to a market, to exploit complementary technologies, and to reduce the time of the innovatory process. In other words, 'competitive collaboration' becomes a fast, low-cost route for new competitors to gain new assets and market access.

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[24] Multiple alliance structures can be seen as an emulation of the Japanese *keiretsu* industrial groups 'in which networks of firms are linked with one another by small cross-shareholdings and long-term supply relationships' (*The Economist*, 27.3.1993, p. 22).

[25] Alliances can strengthen both firms against outsiders even as it weakens one partner *vis-à-vis* the other (Hamel, Doz and Prahalad, 1989).

Important qualifications need to be made, however, to account for certain industry-specific aspects. In the case of mature industries, evidence suggests that strategic-technology alliances are motivated less by the desire to access technology than the desire to access new markets and engage in industry restructuring. Alliances in high technology industries and new fields of technology appear to be motivated mainly by complementing existing technological capabilities (Hagedoorn and Schakenraad, 1991; Hagedoorn, 1993).

Furthermore, although a group of small companies play a distinct role, co-operative alliances tend to be dominated by large firms, particularly in industries characterized by oligopolistic structures. Hagedoorn and Schakenraad (1991, p. 23) found that the majority of the top 50 co-operating companies in the late 1980s were are 'very large, multinational and diversified companies'. The dominance of large firms is due, in particular, to their dominant role in four industries, i.e. aviation, automotive, chemicals and electronics, where R&D intensity and scale economies play an important role in maintaining the existing dominance of large firms.

Most recently, it has been argued that alliance formation has developed from being a risk diversification or risk minimization strategy towards their use closer to the heart of the firm's key strategic objectives (*The Economist*, 27.3.1993). More particularly, the increasing number of strategic alliances between global firms aim to reduce the costs and the risks of new technologies by allowing partners to focus on those aspects of research that come closest to their core competencies (OECD, 1992).[26]

In the light of the above discussion, it is important to remember that the phase of integration associated with the completion of the single market is qualitatively different from the earlier phase: Mark II is deeper than Mark I integration. Therefore, in accordance with the increasing prevalence of 'complex integration' strategies, the response of corporations (via FDI and strategic alliances) and the degree and form of corporate integration will be different. It must be noted, however, that the pressures of globalization and for regionalization on MNE strategies make it difficult to distinguish between the impact of regional integration *per se* as compared with the impact of the increasing globalization of production and markets.

In global industries, the value-added chain is, in whole or in part, geographically fragmented; but the individual functions of the chain, whether internalized or externalized, remain under the control and co-ordination of the major international corporations. In these industries, the leading firms have – or strive to have – a direct presence in each of the three Triad members. Within those areas, production and distribution are being rationalized and restructured, particularly where, as in the case of the European Union, internal barriers to the flow of factors, as well as intermediate and final products, are being dismantled (UNCTAD, 1994, p. 145). The question as to where and why the value-added chain is broken across borders, in the context of the single European market, will be explored below. This is affected by comparative, location-specific advantages (i.e. where to source and market?), and competitive, firm-specific, ownership advantages (i.e. in which functional activities and technologies are investment and managerial

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[26] It is further noted that, many arrangements referred to casually as alliances, particularly between European or American companies and their Asian rivals, are little more than sophisticated 'outsourcing' agreements. While some commentators are quick to hail outsourcing as the way for the future, Prahalad and Hamel (1990, p. 85) warn that although it can be a shortcut to a more competitive product, 'it typically contributes little to building the people-embodied skills that are needed to sustain product leadership'.

resources concentrated relative to other firms in the industry?). Here industry and country specific characteristics become important.

3.9. Tariff vs non-tariff barriers/Mark I vs Mark II integration

Mark I integration, i.e. the establishment of the original Common Market of six European nations and its subsequent enlargement, was primarily based on the elimination of tariff barriers, with limited measures to contain the proliferation of non-tariff barriers (NTBs). The experience of the EC has demonstrated that the abolition of tariffs on intra-area trade without additional measures to tackle non-tariff barriers, has led to the proliferation or intensification of such non-tariff barriers.

Mark II integration, i.e. the completion of the single market, has principally involved the elimination of a host of non-tariff barriers, which up to that point had impeded the free movements of goods, services, capital and people between Member States, and kept the national markets fragmented from each other. If non-tariff barriers were to have similar effects as tariffs, it follows that their elimination would produce similar stimuli to FDI. However, the literature suggests that non-tariff barriers are likely to produce qualitatively different effects on trade and investment than tariff barriers.

Three general observations can be made regarding the differences of non-tariff barriers from tariff barriers:

(a) Non-tariff barriers are often more effective methods of market fragmentation than tariffs or even quotas. Examples include public procurement policies and various market-entry barriers in the provision of services. Thus, eliminating non-tariff barriers will produce stronger scale economies effects than when tariff barriers are eliminated, strengthening more decisively the relative competitiveness of producers located inside the preferential trading bloc.

(b) Many non-tariff barriers affect equally, or about equally, the cost of both domestic production and imports. The elimination of these groups of non-tariff barriers in a common market may be expected to generate resource cost savings that will benefit not only the producers inside the common market, but also those exporting to the common market from third-country locations. The semi-public-good character of the removal of non-tariff barriers in a customs union or common market means that it is difficult to exclude outsiders from enjoying at least some of the benefits which result from deregulation or harmonization.

(c) The elimination of non-tariff barriers in intra-area trade has no direct equivalent for the common external policy of a customs union. When a tariff is the only instrument of trade policy, its use by members of a customs union is by means of a common external tariff. When non-tariff barriers are eliminated within a customs union, however, there is no directly equivalent instrument to use in the common external commercial policy. This will increase the uncertainty of third-country traders about the future orientation of the union's common external commercial policy, a factor that may force third-country exporters to consider the option of FDI as a hedge against the uncertainties of that policy.

Overall, it can be argued that there are likely to be important differences between integration schemes involving the elimination of internal tariff barriers, and integration schemes like the European single market programme. Regarding MNE activity, the elimination of internal non-

tariff barriers is likely to lead to relatively more opportunities for (reorganized and rationalized) efficiency-seeking investment, and relatively fewer opportunities for defensive market-seeking investment. On the other hand, aggressive market-seeking investment is expected to be relatively higher. The elimination of internal non-tariff barriers is likely to create additional uncertainty about the future design of the integrated bloc's external trade policy, given the still fragmentary international trade rules for non-tariff barriers. This should provide a stimulus to strategic investment, with a consequential danger of generating excess production capacity inside the common market. An improvement in the competitive position of EU firms might result in more outward investment and an increasing number of strategic alliances as they seek to maintain or advance their position in global markets.

3.10. The location of production within the EU

The increasing 'globalization' of production and liberalization of markets following rapid technological change has not resulted in an even landscape of integrated international production. While the power of technological advance is gradually eroding the importance of the natural factors of production between industrialized nations, the increasingly important role of some 'created' factor endowments, which are no less location-bound and specific to particular nations, makes geography more not less important. In addition, market interventions and distortion by national governments continue to persist.

Quite apart from the traditional locational advantages available to MNEs associated with the exploitation of factor costs and other differences among nations, another locational advantage, more fundamental to the success of MNE activity, grows out of its home base.[27] Rather than being 'multinational' or 'stateless' corporations, implying that the companies have transcended nations in the sense of being indifferent as between countries, and have no home nation (Reich, 1992; Ohmae, 1990), MNEs tend to exploit internationally what they have developed domestically (Hymer, 1960; Porter, 1990). Over time, home-built advantages are usually combined with those resulting from locating particular operations in other nations and those stemming from the operating flexibility of the transnational network (Kogut, 1993; Porter, 1990). However, in spite of the increasing geographical reach of their operations, the majority of MNEs continue to derive the larger part of their competitive advantages from the location-bound assets of their home country (Stopford and Strange, 1991). Indeed, there is some suggestion that the role of agglomerative or external economies which make for localization of value added activities is increasing. At the same time, MNEs like Nestlé, 3M, ABB and Philips are becoming multiple home-based in the locational profile of their assets.

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[27] The importance of the MNE's own home economy as a source of competitive success has often been neglected. A major theme of Porter's (1990) work, *The Competitive Advantage of Nations*, is that home-based advantages are usually more significant to competitive advantage than network advantages and the benefits of locating activities in other countries. There is, however, increasing evidence, as Porter himself admits, of MNEs' evolving multiple home-bases which are located in different parts of the world. The key point at issue concerns the principle of geographical specialization rather than the exact location of that specialization.

Table 3.3.   Some factors influencing the location of economic activity

At the national level/country-specific advantages	At the sub-national and/or industry level
• production and distribution of technologies • relative real costs of the factor inputs • local production costs • government taxes and incentives • size, growth and composition of markets • supply and socio-political parameters At a bi- or multi-lateral level • comparative real exchange and interest rates • push factors from home economy • guidelines and codes of conduct • supranational agreements, such as the GATT • transportation and communication costs (these costs tend to increase with distance and inhibit concentration) • extent and/or form of trade restrictions on goods and services	• scale or scope economies in production leading to plant specialization • institutional and urbanization economies vary with size of city (e.g. infrastructure, cultural factors, local market size) • localization/agglomerative economies tend to be industry-specific leading to concentration and clustering (e.g. specialized research or training institutes, technological infrastructure, availability of specialized suppliers and sub-contractors, nearness of customers)

Source: Adapted from Eaton, Lipsey and Safarian (1994); De Vet (1993).

Research by both trade and FDI scholars suggests that for high income EC countries, where labour costs adjusted for productivity are at similar levels, the location of high value production is being increasingly determined by the availability of created assets (e.g. human skills and innovatory capacity) in the production process, and the availability and cost of support (complementary) assets, many of which are supplied (directly or indirectly) by governments (Eaton, Lipsey and Safarian, 1994),[28] and located in close proximity to each other (e.g. the services of technology and science parks, and of industrial districts). In other words, the availability of clusters of educated and well-trained manpower, technological capacity and a good transportation and communications network would appear to have become the critical locational attractions of the late 20th century, particularly for high technology sectors. In the case of FDI in the EC, it may be questioned whether the size of the country is any longer an important demand-related variable; much more relevant perhaps is the country's geographical position in relation to the major industrial markets of the Community[29] (Dunning, 1994). It is one purpose of this study to examine how far the completion of the single market is affecting the concentration of high value activity within the higher income countries of the EC.

However, the data also suggest that the presence of the natural factor endowments still continues to be an important locational determinant in the case of the less prosperous countries of the EC.[30] Resource-seeking FDI continues to be attracted by countries on the periphery of the EC and the more outlying regions of the core industrialized countries. For even though some investments in

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[28] Buigues and Jacquemin (1991) draw attention to the importance of strategic considerations as the main motivation for FDI among the high income EC countries. The dominance of international M&As (as opposed to greenfield investments) is suggestive of the importance of strategy-related variables over locational variables as such (i.e country-specific assets). Issues of corporate strategy are explored in Chapter 10 of this report.

[29] The tendency for firms to invest directly for market access will grow as product and service differentiation continue and as the service sector expands (Thomsen and Woolcock, 1993).

[30] International competition rapidly erodes the value of factors of production because they can be replicated.

medium-wage countries, such as Spain and Portugal, follow from strategic considerations, production at the mature stage of development is typically expected to be shifted to countries with lower labour costs (Buigues and Jacquemin, 1991). As Thomsen and Woolcock (1993) observe:

> Because every country has a comparative advantage in producing something, it is wrong to view a regional division of labour simply as a shift of production to the periphery. Nevertheless, labour is the least mobile factor of production and labour costs still differ widely within Europe, so investment in the periphery should be an important indication of this process at work.

Apart from immobile country-specific assets, it may be argued that transactional factors are of growing importance, affecting the distribution of FDI in the EC. The transaction costs of business transactions (e.g. those costs associated with market failure), particularly those influenced by government policy at both national and regional levels, are playing an increasing role for the location of FDI within the EC. Several surveys, about which we shall give details later in this chapter, have confirmed this fact. It is our contention that one of the main advantages of EC 92 is that it helps reduce the 'hassle' costs of doing business in the Community.

Later chapters in this report will argue that the impact of the single market on the locational advantages offered by both the EC as a whole and individual member countries, is leading to a reorganization of MNE activity within the EC. A major motivation of the rationalization of MNE networks is to take advantage of scale and scope economies by increasing the degree of specialization of production in each plant, whether horizontally (certain products or parts in the product range being confined to a single location) or vertically (the separation of intermediate products and final assembly). It follows that, on a Europe-wide basis, production can be rationalized 'either by consolidating in a particular location or by distributing the various activities according to factor costs and regulatory differences across Europe. A third possible strategy is to relocate closer to consumers, whether in individual markets or within the single market itself' (Thomsen and Woolcock, 1993, p. 39). What may be observed in the EC, therefore, is a 'North–South' specialization of value-added activities by MNEs based primarily (though not exclusively) on natural factor endowments, and a 'North–North' specialization more on the basis of scale economies and the availability 'created' factor endowments (e.g. suitable infrastructure, high quality human capital, etc.).

But here again, although some general predictions can be made on the basis of country-specific advantages, the choice of location for a particular firm will ultimately depend on the type of industrial activity as well as its quality. Therefore, quite apart from the issue as to how the allocation of individual FDI may be influenced by national differences in incentives to invest, the interaction among individual investments needs to be considered. This interaction, which tends to result in the clustering of investments in regional and/or national agglomerations, is becoming an increasingly important phenomenon both in Europe and in North America (Dunning, 1994; Eaton, Lipsey and Safarian, 1994[31]).

An interesting interaction between industry-level and country-level explanations is implicit in much of Michael Porter's work (see especially Porter, 1990). It is argued that there are no competitive nations as such. Rather, nations are only competitive in particular industries, even

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[31] Agglomeration is the result of the interaction of two opposing forces: economies of scale that produce concentration; and transportation and communication costs that inhibit concentration (Eaton, Lipsey and Safarian, 1994).

particular segments of industries. Competitive success, therefore, is very spatially focused. Moreover, competitive industries in nations are clustered.[32] Regional industrial clusters of economic activity are a reflection of a nation's 'diamond' of competitive advantage.[33]

This notion of clusters of interconnected competitive industries leads Porter to ask the important question: why is a particular nation the home base for a global strategy? [34] In his view, international competition can be viewed increasingly as competition for home bases. The nations that can attract, maintain and create more home bases than others will be the prosperous nations; whereas the nations that end up becoming merely locations for production sites, that are tapping into low cost labour or capital or raw materials, or are there for market access reasons, will increasingly fall behind. In other words, the countries which can offer the best clustering facilities are often the winners in the long run.[35]

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[32] The goal of a nation is not competitiveness but productivity, viewed broadly; the only way to understand productivity growth is on a (clusters of) industries basis, rather than on an aggregate basis (Porter, 1990).

[33] Four determinants and two exogenous variables (chance and government) interact in the diamond, with the nature of a country's international competitiveness depending on the type and quality of these interactions. The four determinants of the diamond are: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure and rivalry. These four determinants for a nation 'shape the environment in which the local firms compete and promote or impede the creation of competitive conditions' (Porter, 1990, p. 71). In his review of Porter, John Dunning (1993b) has added a third exogenous variable (FDI).

[34] We repeat, in Porter's terminology, home base does not necessarily mean the home country of an MNE, but where the bulk of the activity being considered is located, and where the decisions about such activity are taken.

[35] Generally, in light of Porter's framework, an interesting question to be asked is: can we look at the European Union as a nation?
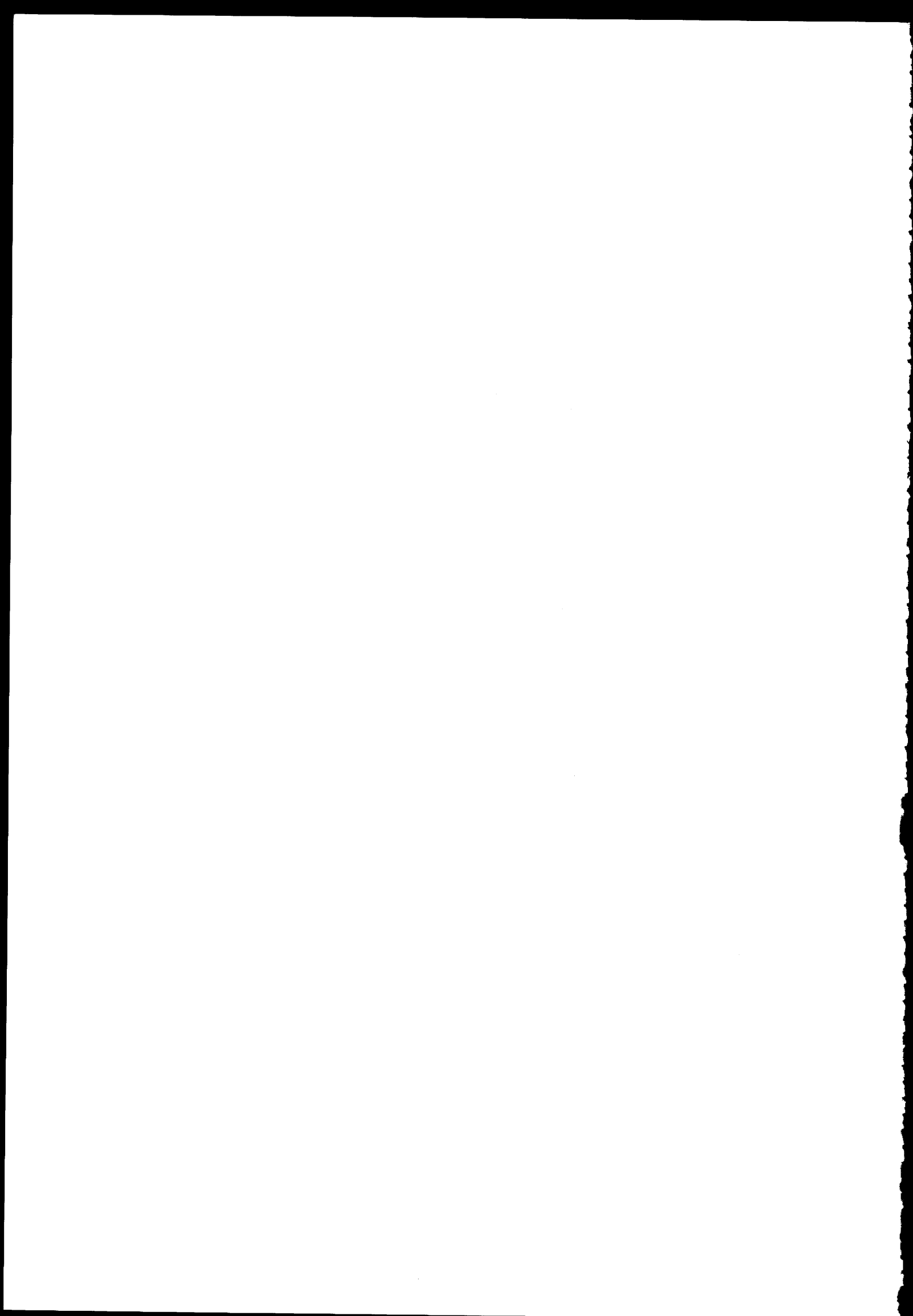
4. Likely impacts of the single market on intra-EU FDI flows

4.1. Introduction

Our review of the literature suggests a number of (sometimes contradictory) possible outcomes to regional integration on the flows and stocks of FDI. In theoretical terms, the SMP would reshape the OLI configuration which determines the extent and direction of foreign investment (Dunning, 1993a) by affecting:

(a) the competitive advantages of foreign investors relative to those of domestic investors (ownership 'O' advantages);

(b) the locational advantages for value-added activities of countries both within and outside the EU (locational 'L' advantages);

(c) the costs and benefits of exploiting the competitive advantages of MNEs from a foreign location via the route of FDI, as compared with alternative modalities (internalization 'I' advantages).

A change in these determinants will affect the various types of FDI in different ways. In broad terms, these are represented in a conceptual form in Figure 4.1. However, we cannot easily quantify the change in competitive advantages, nor do we have quantitative data on the different types of FDI, namely strategic-asset acquiring, offensive market-seeking, defensive market-seeking and efficiency-seeking.

As we shift the focus of our report from the theoretical to the empirical, it is possible, however, to identify a number of measurable changes in FDI which theory suggests would be a result of the SMP. These would include the following variables which are represented graphically in Figure 4.2. (It is worth reiterating that in most cases we have data by either country or sector, but not both; therefore, at best, the data can usually only be indicative of possible changes due to the SM).

(a) The sectoral composition of FDI:
     Variations between 'sensitive' and 'non-sensitive' sectors; high or low technology industries; manufacturing or services.

(b) The country of source (home):
     Intra-EU investors vs extra-EU investors.

(c) The country of destination (host):
     Northern high-income EU Member States (core) vs southern medium-income Member States ('periphery').

It is quite likely that any possible effects of the SM may be masked by changes in the other determinants of FDI flows, including *inter alia* the economic cycle, agglomeration effects, financial variables (exchange rate shifts, etc.). It is extremely difficult to separate the SM effect from these other factors influencing FDI during the period under review, but in both our econometric and qualitative analyses we have attempted to do so as far as is possible. To some extent, of course, these other variables may themselves have been shaped indirectly by the single market as part of the dynamic process of regional integration.

In order to provide an analytical structure, and to take account of the data difficulties outlined above and in Chapter 2, the main body of this report approaches the empirical investigation under a number of broad headings. We begin first with a consideration of the FDI/trade relationship as these two types of cross-border activity form part of a spectrum of modalities of serving overseas markets, and are largely inter-dependent in the modern global economy. Sectoral and geographical changes in intra-EU FDI are then considered in Chapters 6 to 8, in as far as they may be due to the SM, and implications drawn for Member States and industries. Chapter 9 provides an extra-EU perspective, and considers the particular concerns of US and Japanese investors and their response to the competitive challenge of the SMP.

4.2. FDI and trade

The relationship between FDI and trade is of considerable importance in identifying the impact of the SM. These two means of serving overseas markets have a complex inter-dependence that cannot easily be reduced to a substituting/complementing dichotomy. Rather, there is a spectrum of modalities through which firms in one member state (MS x) can reach consumers in another (MS y), and firms often employ several modalities simultaneously. Although the option of alliance is the only other modality shown there are in fact of number of variations, including, for example, (cross-)licensing and minority shareholdings in joint ventures.

In the case of Mark I integration, a study by Molle and Morsink (1991) found that over the period 1973–83 there was a direct correlation between the intensity of intra-EC trade and FDI flows, once the trade intensity index had reached a certain level. More recent work by Peter Petri (1994), looking at both the North American and European regions, offers further support for this assumption.

In Chapter 5 we consider the relationship between trade and FDI following the removal of NTBs under the SMP. In this exercise we draw upon the two sets of analytical tools viz. the theory of trade and the theory of FDI, or, more precisely, the theory of international production. The theory of trade is essentially concerned with the effects of economic integration on the location of economic activity, and the extent to which particular markets are served by exports or local production. However, for the most part received trade theory pays scant attention either to the nationality of ownership of economic activity, or to the possibility that such activity might be part of diversified or multinational firms. With the exception of some modern trade theorists (Helpman and Krugman, 1985; Markusen and Venables, 1995), the particular characteristics of foreign-owned as opposed to domestically-owned production are not seen as significant.

The trade literature would suggest that as non-tariff barriers decline, trade relative to FDI will increase. This would be particularly expected in the 'sensitive sectors' (Buigues et al, 1990) for whom the removal of NTBs under the SMP would be particularly significant. On this basis we might reasonably attribute any observed change in the FDI/trade relationship to the single market. This issue is explored in detail in Chapter 5, and empirically tested with respect to certain sectors.

The FDI literature is ambivalent with regard to the effects of regional integration on the FDI/trade relationship. Different effects could be foreseen contingent upon the type of FDI being considered, although one immediately encounters problems with empirically testing this distinction. The literature would suggest, for example, that while defensive import-substituting FDI would decline, efficiency-seeking FDI might increase. The net effect will then depend on

industry, country or even firm-specific considerations – and notably whether, in supplying products from a given location, foreign rather than domestic-owned firms have a competitive advantage.

Both trade and FDI theory posit that the relationship between intra- and extra-EU trade and FDI was conditional on the kind of trade and FDI being considered, and the conditions under which each took place. However, it is reasonable to hypothesize that the more similar are the industrial and/or geographical patterns of trade and FDI, the more it is likely that they will be complementary, rather than substitutable for each other. Modern trade theory, in contrast to its neo-classical predecessor (see, for example, Mundell, 1957), allows for the specificity of factors of production; and suggests that, as impediments to trade in goods are removed, so factor mobility, including FDI, will normally also be increased.

It is worth noting here that the SM may have led to more concentration of industry in sectors subject to economies of scale, which means that trade in these sectors may increase relative to FDI. But, in cases of multiple activities where firms may choose to specialize in particular activities across national boundaries, this could lead to an increase in efficiency-seeking FDI and as well as in intra-firm trade.

To explore these issues we also draw upon work undertaken for a parallel research project on the impact of the SM on inter-industry and intra-industry trade (European Commission, 1996). This study explores the consequences of shifting trade patterns on efficiency and welfare gains in the EU. The mobility of goods and factors under the EU would be expected to enhance both competition and the opportunity to exploit scale economies, but clearly this is to some extent shaped by the FDI response of MNEs.

4.3. FDI and geographic concentration

Received trade theory suggests that in sectors producing products subject to the economies of large scale production, regional integration may lead to additional concentration of production, particularly in countries which already attract such production. An alternative hypothesis to this 'agglomeration' argument is that regional integration may reduce structural differences between Member States, and thus disperse economic activity – particularly among the larger countries.

A parallel line of argument relates to the distribution of FDI between the high and medium income countries; it being predicted that since the latter attract fewer technologically intensive sectors than the former, there is likely to be less concentration of FDI among these countries than in the high-income countries. Specifically, those countries with large existing high technology sectors will attract increasing shares of inward FDI in those sectors.

Following received FDI and trade theory, MNEs may also be inclined towards concentration in medium technology sectors such as automotive assembly. This means that, relative to domestic investment, their activities will increase. (This is the differential competitiveness effect – noted specifically by the trade economists.) However, it is also possible that the SM will result in a larger percentage of FDI going to peripheral countries, and we have conducted some analysis on this specific question.

4.4. Sectoral composition of FDI

The implications of trade and FDI theory concerning the likely effects of regional integration on the industrial composition of FDI are mixed. On the one hand, the SM may encourage FDI in sectors where – because of NTBs particularly affecting FDI (e.g. non-tradeable services) – there was little MNE activity; and/or it may encourage FDI by firms from countries which have engaged in little efficiency-seeking FDI (e.g. EU-based MNEs). On the other hand, the agglomeration/ concentration thesis might suggest that FDI will be increasingly directed to sectors which already attracted above average amounts of FDI.

A plausible story, based on the available literature, is that the SMP will stimulate higher growth in intra-EU FDI in those sectors which have not previously been FDI-intensive (relative to the FDI-intensive sectors). Furthermore, because NTBs are particularly significant to the service sector as opposed to the manufacturing sector, their removal under the SMP may increase the service sector's share of intra-EU FDI flows. We have examined this issue particularly in relation to outward FDI from the UK and Germany (which together account for some 55% of total outward FDI stock by EU countries).

4.5. The SM and levels of FDI

One way of estimating the SM effect on intra-EU FDI flows is to assess whether such flows have risen more rapidly than might have been predicted from a conventionally specified model of FDI determinants without an explicit indicator for the SM. The result would portray the *antimonde* effect of the completion of the SM. A related prediction is that FDI within the EU by EU MNEs has risen more rapidly than investment outside the EU by the same group of firms. A third suggestion which has more to do with the impact of the nationality of ownership on FDI in the EU is that the SM is favouring intra-EU relative to extra-EU FDI. As a consequence of the SM, investment in the EU by EU nationals might be expected to rise more rapidly than investment outside the EU by EU nationals.

Although the present research project is primarily concerned with explaining intra-EU FDI, data on extra-EU FDI (which are generally more readily available than data on intra-EU FDI) are useful insofar as they offer some insight into the changing attractiveness of both particularly EU countries and sectors to foreign investors. In other words, although non-EU foreign investors do possess distinctive characteristics and play a significant role in the EU economy, for the most part it may reasonably be supposed that the reactions of the two groups of enterprises – particularly in sectors dominated by MNEs – might be quite similar to each other. The present study has therefore examined the role of US and Japanese FDI in the EU, and trends in this activity attributable to the SM.

4.6. Other aspects of FDI likely to be influenced by the SM

Our literature survey suggests that relatively little attention has been given to the timing of the FDI response to the announcement of the completion of the SM. However, our data allow us to examine whether the impact on FDI is likely to have been more pronounced in the years immediately following the announcement in 1985, rather than in later years. This would follow from the assumption that after the publicity and analysis as to the implementation of the single market, firms would restructure their operations so as to be ready for 'EC 92' and gain competitive advantage ahead of their rivals.

These static effects on FDI (such as the one-off restructuring of investments) are analytically distinct from the dynamic effects of regional integration (such as those attributable to income growth, and possibly technological development), although in practice we are not able to easily distinguish between them. However, we return to these issues in our conclusions.

The research methodology for undertaking our evaluation varies according to the quantity and quality of the data available. In a few cases, we have been able to construct a formal model and identify the extent to which the SM (as compared with other determinants of the variable being examined) has been of statistical significance. In other instances, we have been forced to adopt a 'descriptive-analytical' approach, which includes assembling data from a wide variety of published sources, using various proxies for FDI (e.g. M&A data).

Although Chapters 5 to 9 form an important part of our work, their findings need to be related to the less quantitative assessments of the *antimonde* situation, set out in Chapter 10. This explores (in abbreviated form) some issues of corporate strategy as they affect FDI and as, in turn, they are affected by the SMP. Empirical validation is sought in the wider macro context of the Commission's own survey of 20,000 firms across the EU and in-depth interviews with trade associations, as well as through further analysis of M&A data.

Figure 4.1. **Conceptual impact of the SM on FDI**
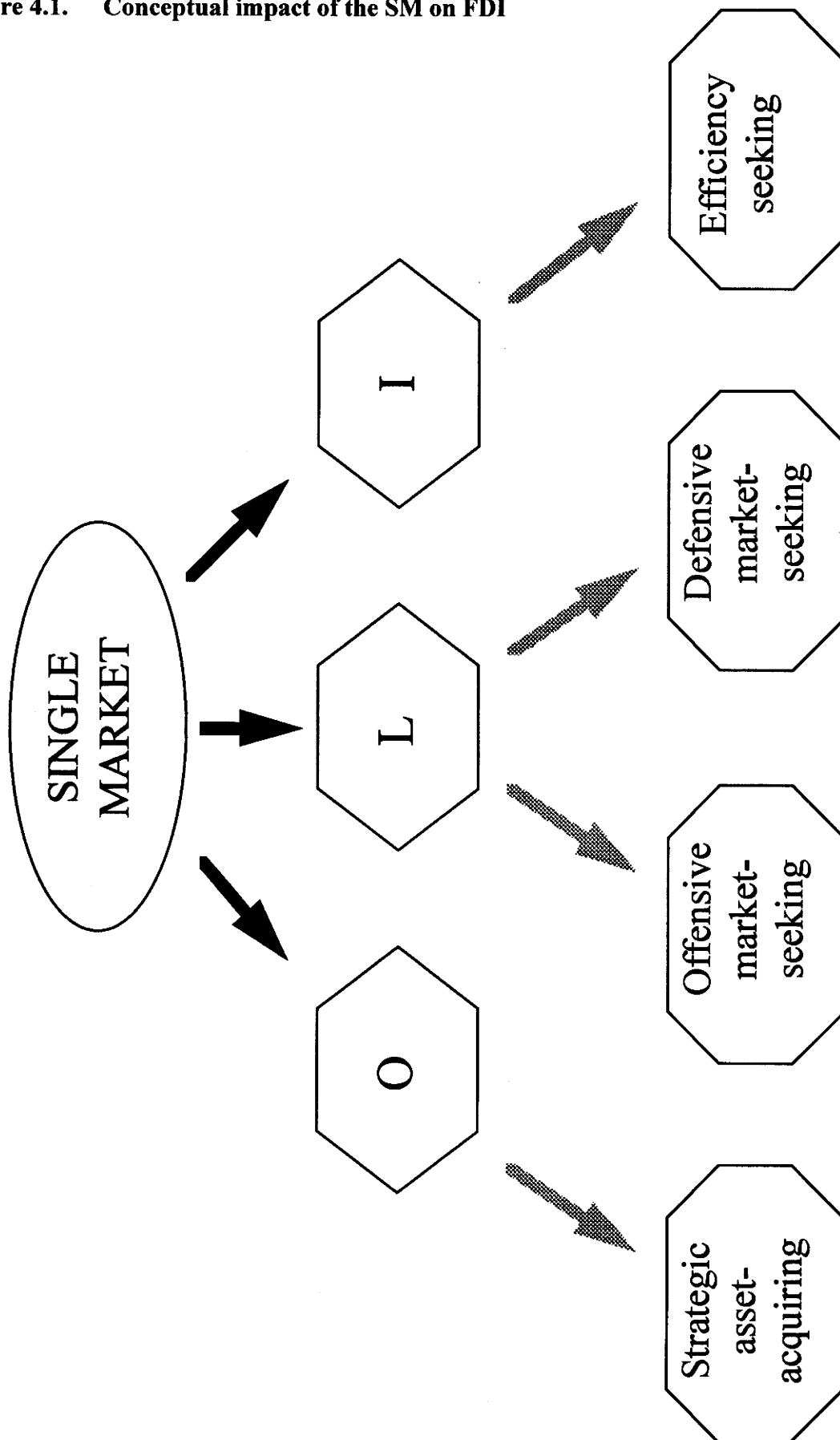
Figure 4.2.   Composition of intra-FDI
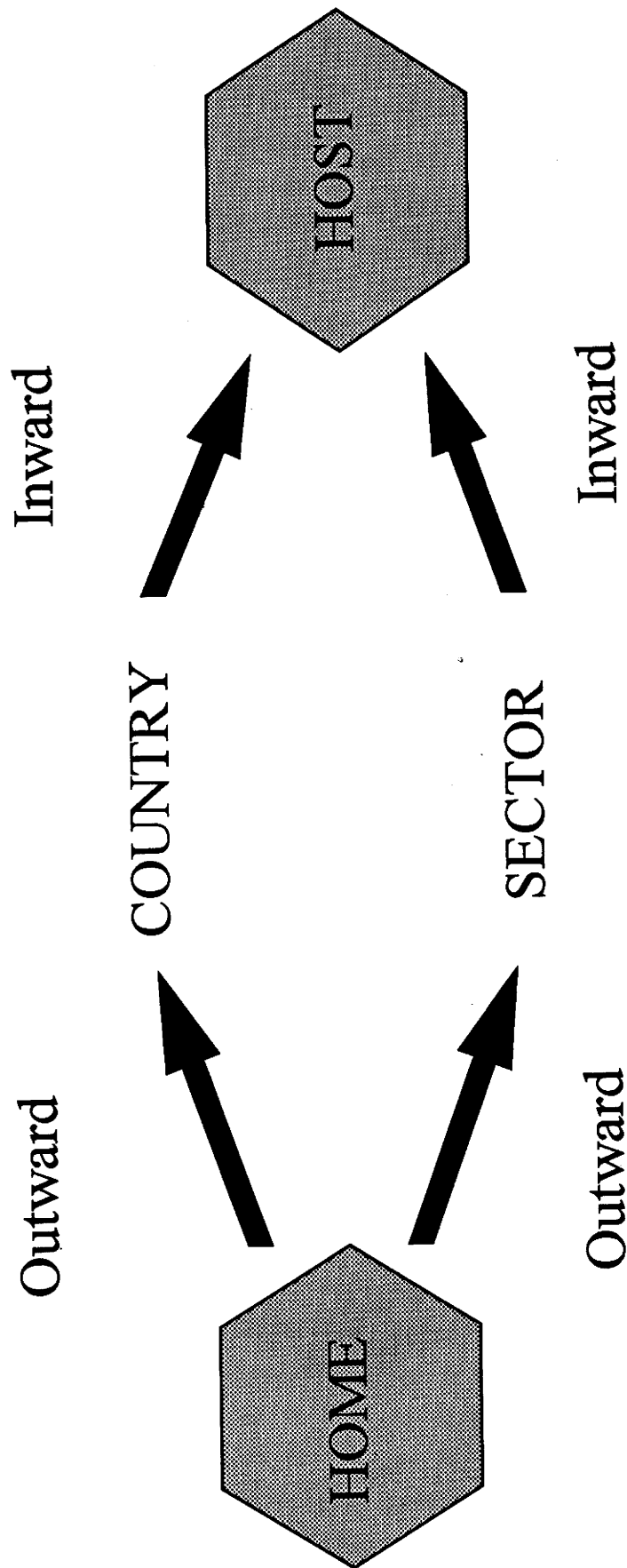
Figure 4.3.   Means of serving EU markets
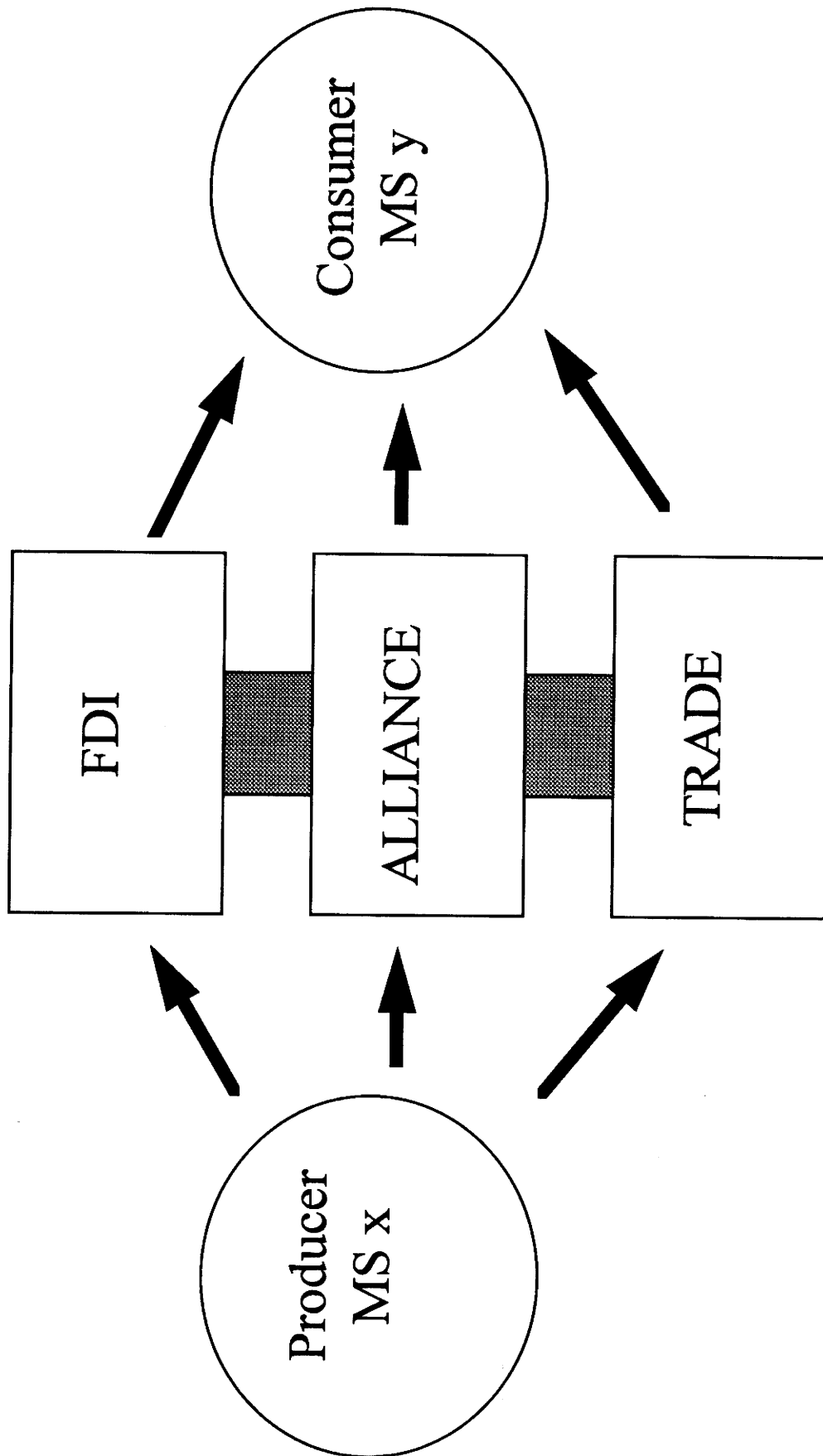
5. The FDI and trade relationship

5.1. Introduction

As we saw earlier, there is an extensive literature on the trade–investment dichotomy as a means of serving overseas markets. The removal of NTBs under the SMP would be expected to increase the mobility of both goods (through trade) and factors (such as capital, through FDI), ultimately leading to an increase in efficiency and welfare in the EU. This would be the result of greater returns to scale, increased competition and a better allocation of resources.

The purpose of this chapter is to begin the empirical investigation by seeking to explore what impact regional integration might have on the relationship between the two. It is already apparent that the literature is far from certain on this point: while one fully expects the removal of NTBs to increase trade, the effects on FDI seem likely to be more particular, depending on sectoral, locational and even firm-specific factors.

With a given set of Ownership advantages and Locational advantages, efficiently integrating their international operations (Internalization advantages) is essential to the long-run competitiveness of MNEs. Under static conditions for any one firm, there will be an optimum combination of cross-border productive activity that will include both sales to final consumer (exports) and intra-firm trade of intermediate good and services. This latter phenomenon is becoming increasingly important in modern systems of integrated international production, and in this equilibrium position no further FDI would be necessary (Gray, 1996).

In one sense this equilibrium position is compatible with the traditional factor proportions model of international trade. In each Schumpeterian industry MNEs combine the locational advantages of the host country with their own ownership advantages to give them the edge over uninational firms. Under the usual assumptions of balanced international payments and full employment, FDI will have brought about an improvement in global productive efficiency along lines similar to the generation of gains from trade (Gray, 1996). This all becomes less clear cut when dynamic variables such as regional integration are taken into consideration, which may in turn require a reorganization of existing assets and the interaction between them.

Our literature review has highlighted a number of studies that explored the dynamic effects of Mark I integration on trade and investment. The studies showed that the impacts were highly conditional on the type of investment or trade being considered, and also on the time frame of the analysis. Thus, while the direct (or 'first order') effect of tariff removal was to reduce defensive import-substituting FDI and to replace it with exports, it also led to the restructuring of existing intra-EC FDI wherever its trade-creating consequences stimulated a geographical concentration of production in those activities in which foreign-owned firms had a competitive advantage.

The indirect (or 'second order') effects of integration, such as increased competitiveness of local firms and higher income levels, were shown to lead to more rationalized/efficiency-seeking FDI and offensive market-seeking FDI, particularly by extra-EC investors. While first order effects are associated with increased levels of trade (particularly intra-EC), the impact of second order effects is far from clear.

By the early 1980s, about one-third of all FDI from EC countries was directed to other Member States. This compares with 35% of US FDI and 15% of Japanese FDI to all countries. The total

share of the inbound FDI stock in the EC originating from other EC countries was generally higher than its share of worldwide FDI (excluding the stock of the investor country. This FDI intensity ratio[36] corresponded closely to the equivalent trade intensity ratios for both intra- and extra-EC transactions, although the former was a little higher (UNCTAD, 1994). Further evidence for this close correlation can be found in Molle and Morsink (1991), who found that over the period 1973–83, trade and FDI were closely associated once the trade intensity ratio had reached a certain level.

An econometric study by Petri (1994) shows that not only are the FDI and trade intensities of ten major industrialized countries closely associated with each other, but a disproportionate share of each country's FDI and trade is conducted intra-regionally. However, although the geographical distribution of FDI and trade are strongly correlated, the former is less locationally bound to the investor's home region than trade. In 1990, the most intense intra-regional ties – notably those in Europe and America – appear to have been trade-driven rather than investment-driven, while FDI becomes more relatively more important in more distant relationships. In the cases of both the UK and Germany, the co-efficients of the trade and FDI intensities are almost identical; although this partly reflects the relatively high propensity of both countries to invest outside their own regions.[37]

Inter alia this suggests that either the regional concentration of FDI is directly associated with regional concentration of trade, or both are driven by common factors. By use of multiple regression equations, Petri concludes that between 30% and 60% of the variation in FDI and trade intensities is explained by historical, political, cultural or other country-specific characteristics.

5.2. Empirical investigation

Data on intra-EC FDI and intra-EC trade, published by Eurostat for the years 1984 to 1992[38] are only available for some two-digit industrial groups. In Table 5.1 we set out a comparison between the changing share of intra-EC FDI flows and intra-EC trade, and in Table 5.2, the changing trade/FDI ratios over this period.

Three particularly interesting features emerge from these tables. The first is the increase in the share of intra-EC FDI flows directed to the less technology-intensive sectors in the 1980s: this is in marked contrast to the industrial pattern of US and Japanese direct investment in the EC suggested by other research (see also Chapter 9). Second, it would seem that the intra-EC exports of Member States are becoming more technology-intensive, as shown by the changing share of trade flows accounted for by these sectors. Since the more technology-intensive sectors are also those which tend to be more integrated across national boundaries, these data suggest that, even by the early 1990s, the European MNEs had still not geared their European operations to meet

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[36] See Appendix A for a more detailed methodology and country breakdown of intensity ratios.

[37] Petri suggests that there may be several possible explanations for this higher propensity. FDI may be less inhibited by transaction costs than trade, or the transaction costs associated with FDI may be less closely linked to distance than those associated with trade. Other factors could also selectively inhibit trade at longer distances, for example, in the case of the EC, trade barriers are systematically higher against extra-regional foreign imports.

[38] Eurostat (1992).

the needs of the single market. However, until a more detailed sectoral breakdown is available for intra-EC FDI flows, this is as much hypothesis as established fact.

Table 5.1.   Comparison between share of intra-EC FDI and trade by broad industrial sector, 1984–92

(percentages)

	1984–86[1]		1987–89		1990–92	
	FDI	**Trade**	**FDI**	**Trade**	**FDI**	**Trade**
More technology-intensive	**73.1**	**59.9**	**47.0**	**61.3**	**50.6**	**62.1**
Chemicals	30.8	18.4	28.4	16.6	9.9	15.9
Non-electrical machinery	15.7	10.6	3.2	11.4	10.1	11.1
Electrical and electronic	18.4	14.8	13.3	15.4	15.3	15.6
Transport equipment	8.1	16.1	2.1	18.0	15.3	19.5
Less technology-intensive	**26.9**	**40.1**	**53.0**	**38.7**	**49.4**	**37.9**
Food products	9.6	12.5	22.7	11.3	27.2	10.8
Metal and metal products	0.7	3.6	6.4	3.8	3.5	4.1
Other industries	16.5	23.9	23.9	23.7	18.8	23.1
All industries	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
ECU (billion)	**1.33**	**319.9**	**6.67**	**·424.2**	**9.02**	**547.2**

[1]   Annual average. Intra-EC FDI is defined as inward investment flows into all Member States of the EC from other Member States of the EC, and intra-EC trade as value of exports between members of the Community.
Source: Eurostat (1994).

Third, as revealed by Table 5.2, the trade/FDI ratios have fallen substantially during the period of the single market to a quarter of their previous levels, although there is no distinct sectoral pattern which emerges. The decline in this ratio was however most marked in the less technology-intensive sectors, and in the early SM implementation period (1987–89) when flows of FDI peaked. Even though FDI flows (and particularly M&As) declined in 1989–90, the trade/FDI ratio stabilized thereafter.

In the light of this uncertainty – and data constraints elsewhere alluded to – we have sought to test this relationship in greater detail for certain sectors. These include some of the 40 'sensitive' industrial sectors thought to be most affected by the single market. One might reasonably attribute significant differences in the relative growth of trade and FDI in these sectors at least in part to the single market, although other sector specific variables would also have to be considered.

The 'sensitive sectors' were identified at NACE three-digit, which as we have already seen, presents enormous difficulties for those seeking comparable, consistent data on FDI. While Eurostat can provide some intra-EU trade data at up to eight digits, scholars of FDI struggle to get comprehensive coverage at the two-digit level. It is much to be hoped that this study can at least highlight this disparity, and given the increasing interest in FDI issues at policy-making

levels, consideration should urgently be given to expanding resources for such data collation beyond the scope of this study.

Table 5.2.   Intra-EC trade/FDI ratios, 1984–92

	1984–86	1987–89	1990–92
More technology-intensive	196.4	82.9	74.4
Chemicals	142.7	37.1	97.2
Non-electrical machinery	160.8	325.5	66.5
Electrical and electronics	192.9	73.8	61.9
Transport equipment	478.1	540.3	77.5
Less technology-intensive	355.6	46.4	46.6
Food products	312.2	31.5	24.1
Metal and metal products	1,047.2	37.7	69.0
Other industries	346.5	62.9	74.6
All industries	239.5	63.5	60.7

Source: Eurostat (1994).

To help overcome this problem, we have chosen to make use of the AMDATA database, which is able to provide data at the SIC three-digit level that closely matches the NACE system. As the name implies, this database is limited to M&A activity, thereby excluding greenfield investments; while, on the other hand, including acquisitions that are financed by locally-raised capital which would not normally appear in the balance of payments, even though the consequent change of ownership would qualify as FDI under the conventional definition.[39]

However, M&As are an increasingly important phenomenon of the globalizing economy, and their rapid growth in the late 1980s coincides with the implementation of the single market. Over the period 1987–93, worldwide cross-border M&As were around two-thirds (66.2%) of FDI inflows into developed countries.[40] It is legitimate therefore to take data on M&As as a reasonable proxy for FDI in this instance.

We have chosen to examine a number of sectors, from both the 'sensitive' list (marked *) and from those not identified as such in order to provide a basis for comparison. The two industrial 'sensitive sectors' we have chosen are telecommunications equipment and pharmaceuticals. In contrast, textiles would not normally be expected to be markedly affected by the SMP, although this sector in particular has undergone a considerable amount of restructuring in recent years. However, we have also included overall figures for the manufacturing as a further control.

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[39] IMF (see Chapter 3).

[40] UNCTAD (1995a). This phenomenon is discussed in more detail in Section 10.4.

The sectors chosen for further analysis were as follows:

Sector	SIC
Telecommunications equipment*	344
Pharmaceutical products*	257
Financial services *	81, 82, 831, 832
Textiles	43
Manufacturing	3.., 4..

Telecommunications equipment and pharmaceuticals were chosen as representative for a number of reasons. They each account for the largest share of value added (4.29% and 2.48% respectively) in groups 1 and 2 of the 'sensitive sector' list, which have slightly different characteristics. Group 1, which also includes office machines and medico-surgical equipment, is defined as 'high technology public procurement'. Even though the NTBs are considered 'high', price dispersion is typically relatively low (8.89%, net of taxes, in the case of telecommunications equipment), and this is partly due to competition from both other Member States and extra-EU suppliers in the US and Japan. The impact of the SM arises from the potential economies of scale to be exploited at Community level, which will allow European firms to raise their productivity and R&D budgets to levels more comparable with their Triad competitors.

Pharmaceuticals is classified under group 2, in spite of its heavy R&D intensity, primarily because of the wide price dispersion (32.65%). These sectors are classified as 'traditional public procurement or regulated markets', and are characterized by limited access to public procurement contracts and idiosyncratic national standards and regulations, leading to low levels of intra-EU trade. Like group 1, NTBs are considered 'high' and their removal, in particular the opening up of public procurement, is likely to have a considerable impact, manifested in major restructuring and the emergence of large-scale production units.

5.3. Public procurement liberalization: impact on trade and FDI

The choice between serving overseas markets through either trade or FDI can be affected by a number of factors in the external strategic environment, such as technological change and globalization. Isolating the effect of the single market is therefore a problematic exercise, but one approach is to focus on a particular aspect of the SM – the liberalization of public procurement – that is expected to affect the telecoms equipment and pharmaceutical sectors in particular. It may then be possible to attribute shifts in the pattern of intra-EU transactions to the SM.

Public procurement is a significant part of total demand in the EU, accounting for around 15% to 20% of total GDP, of which – in the pre-SM period – only 2% to 3% went to suppliers from other Member States.[41] At that time, government purchasing decisions were seen not so much in terms of getting value for money for the taxpayer, but as a tool of industrial policy with profound effects on the industrial structure in certain sectors and countries. Even establishing local subsidiaries did not guarantee equivalent treatment with indigenous 'national champions'. These were firms which had built up a relationship with the purchasing authorities over many years, and were in many cases state-owned.

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[41] Lyons and Sleuwaegen in Davies, S. and Lyons, B. (1996).

Nevertheless, for firms that did have a firm-specific Ownership or O advantage, establishing a local subsidiary was often an essential prerequisite to selling to the Member State governments. Such O advantages are more commonplace among R&D-intensive firms such as those found in the telecoms and pharmaceutical sectors. Under the eclectic paradigm (see Chapter 3), these O advantages need to be matched with the Locational (L) advantages of the overseas market itself, and the Internalization (I) advantage of multinationality, in order for FDI to take place. For the two 'sensitive sectors' under consideration, the L advantages may themselves partly derive from the high NTBs observed, and hence their removal under the SMP could potentially result in a shift away from foreign production in favour of exports, as firms seek to exploit economies of scale. In an extreme case, this could be achieved through a single plant aimed at serving the entire EU market.

5.4. Empirical testing

The foregoing analysis and literature review is perhaps best summarized by the observation of Davies and Lyons (1996) that: '... in these high-tech public procurement industries, we can expect a major increase in intra-EU trade as a result of integration as a single European market, and that there may also be a reduction in intra-EU multinational activity'.[42]

The authors were able to offer some support for their hypothesis in connection with some of the 'sensitive sectors' which is shown below. Table 5.3 takes two measures and calculates their shift over the period 1987–92, as the SM was coming into force. SPEC is a Herfindahl index, and refers to the degree of specialization of production in a few Member States, while TRADE is a measure of intra-EU trade specialization.[43] The table suggests that the increase in intra-EU trade in procurement-intensive sectors has been much faster than any change in the location of production. However, it does not of itself provide evidence of any change in the ownership of firms, and hence in FDI.

Table 5.3.   Trade and production specialization in the sensitive sectors

Sector	SPEC	TRADE
Pharmaceuticals	-.01	+4
Telecommunications equipment	+.02	n.a.
Aerospace	-.02	+33
Medical instruments	+.01	+3
Electrical machinery	+.02	+2
Boilers and containers	+.01	+3
Shipbuilding	+.01	+8
Rail stock	+.01	+16
Source: Adapted from Davies and Lyons (1996).		

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[42] Davies, S. and Lyons, B. (1996), op. cit., p. 360.

[43] See Davies and Lyons (1996) for fuller exposition.

A synthesis of further data from Davies and Lyons (1996) could yet shed further light on this issue. Table 5.4 relates to a number of the sensitive sectors and provides data assembled by the authors at Member State level for Germany, France and Spain. They point to some interesting patterns emerging along the lines of the revealed comparative advantage (RCA) for each Member State as the public procurement bias is removed by the SMP.

Germany, for example, has both advantages (in telecoms equipment and boilers/containers) and disadvantages (in pharmaceuticals and rail equipment) whose differences are accentuated by five years of public procurement liberalization under the SM. The advantaged sectors consequently enjoy low and stable levels of import penetration, while the disadvantaged sectors are faced with higher levels of foreign competition. Spain, by contrast, starts from a lower production base in the high tech sectors, but appears to be strengthening its position over the period 1987–92 in the more traditional public procurement sectors such as boilers/containers and rail equipment. France has exhibited a striking continuity in the RCA for production and exports, although the share of foreign-owned production has edged up slightly.

Using AMDATA we can explore the intra-EU FDI activity more closely. Subsequent tables examine M&A activity in the pharmaceutical sector at the aggregate EUR-12 level, distinguishing between transactions that are entirely within one Member State (domestic or D), those that are cross-border/intra-EU (X-border or X-B), and those where the bidder is outside the EU, but the target is a Member State firm. The pharmaceutical sector is set against the manufacturing sector as a whole to see what trend emerges.

We have presented the results of this analysis in two formats: the first relates the values of the M&As undertaken, while the second is calculated on the basis of the number of transactions. We have done this because a significant number of the transactions on the AMDATA database are not recorded with a value attached to them. This is particularly prevalent where the target is a continental European firm, as the capital markets tend not to be as transparent and many firms are privately owned.

We know that across the EU the pharmaceutical sector (NACE 257) accounts for 2.48% of industrial value added and for only 1.63% of employment. What is immediately striking then is the disproportionate share of manufacturing M&As which are accounted for by pharmaceutical firms in the period 1989–94. In total, 9.36% by value of all manufacturing transactions in the EU had a pharmaceutical target.

Although pharmaceuticals is a sensitive sector, this high level of activity cannot *a priori* be attributed to the single market. It could, for example, be connected with industrial restructuring within the sector due to technological change (such as the high costs of R&D) or competitive strategies (to enhance market power in certain product categories). If this were so, we would expect to see similar proportions for both domestic and cross-border transactions. Measured by either value or number of transactions however, the level of intra-EU activity is significantly higher than uninational transactions, suggesting that regional integration forces are at work. Even more striking, however, is the degree to which extra-European investors have entered the EU market though M&As, suggesting global forces may also be at work.

The high level of observed inward FDI activity (as proxied by M&As) is unlikely to be offensive market-seeking, because pharmaceutical consumption in the EU only rose by 5.14% in current prices for the period 1989–93. Defensive market-seeking also seems unlikely since the SM is

focused on dismantling just such barriers, although one could argue that only from the within the EU can their removal be properly exploited. However, most extra-EU pharmaceutical MNEs already have a significant presence inside the Union, which could be used as a base for wholesale distribution across Europe.

Two other motivations seem more plausible however:

(a)   The observed FDI could be strategic asset acquiring in that it is aimed at building up the firm-specific ownership advantages in the form of, for example, dedicated biotechnology firms or other specialist R&D centres, in a sector where EU firms have built up an impressive record of innovation.

(b)   The M&A activity could be rationalizing or efficiency-seeking FDI as firms restructure their operations so as to better serve the single European market.

For political reasons, few firms will actually take restructuring to the lengths mentioned earlier, but many may well choose to concentrate production of certain products in certain EU Member States. This will require both an initial investment in expanded sites and a subsequent disinvestment (not recorded in AMDATA) as firms sell off surplus sites.

Is the observed pattern special to sensitive sectors? A similar exercise to that already undertaken in pharmaceuticals is shown in Table 5.7 for the textile sector. A very different pattern emerges, however. Although textiles M&As in total account for 1.6% of all manufacturing transactions where the target firm is in the EU, this activity is disproportionately concentrated within Member States. Thus, for textiles, domestic transactions are 4.61% of the total for manufacturing, whereas cross-border activity in the EU accounts for only 1.05% of the equivalent aggregate. In direct contrast to pharmaceuticals, extra-EU investment accounts for an even smaller share of the manufacturing total, further reinforcing the perception that this sector is not being specially targeted by investors as a consequence of the SM. These patterns are confirmed even when the analysis is done by number of transactions as the equivalent table illustrates.

Using data from Eurostat and AMDATA[44] we are also able to make a simple comparison between the pattern of intra-EU trade and investment for the pharmaceutical and telecommunications equipment sectors for the period 1989–94. This exercise is shown in Table 5.9.

As we can see in the case of pharmaceuticals, intra-EU trade grew strongly over the period, while intra-EU M&A activity grew only erratically. The large increase in intra-EU M&As in 1994 is largely due to a single major acquisition of a UK firm, and on its own, offers little evidence of an equivalent surge in intra-EU FDI for this period. Data for earlier periods might have given clues as to the restructuring that has been undertaken in the run-up to the SM, but the overall M&A pattern is also heavily shaped by the cyclical recession. Telecommunications equipment gives a more confusing picture as the trade flows themselves have also been quite erratic, dipping sharply in 1993. It is very difficult to see a real pattern emerging in the M&A activity, as the swings are so volatile.

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[44]   Converted to ECU at prevailing rates.

Table 5.4.   Trade and investment patterns in the 'sensitive sectors'

Pharmaceuticals (NACE 257)

	RCA production		RCA exports		Import penetration intra-EU (%)		Import penetration extra-EU (%)		Export share (%)		Share (%) of foreign-owned production	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
GERMANY	0.76	0.6	0.74	0.71	11	13	9	11	29	32	2	3
SPAIN	0.92	1.3	1.11	0.86	87	65	60	34	16	12	90	84
FRANCE	1.36	1.36	1.23	1.05	6	10	3	6	18	22	45	55

Telecommunications equipment (NACE 344)

	RCA production		RCA exports		Import penetration intra-EU (%)		Import penetration extra-EU (%)		Export share (%)		Share (%) of foreign-owned production	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
GERMANY	1.65	2.44	1.31	1.46	5	5	7	9	22	21	29	37
SPAIN	0.37	0.39	0.27	0.53	23	48	48	62	11	23	77	63
FRANCE	0.58	0.56	1.04	0.99	20	21	13	19	37	42	27	31

Boilers and containers (NACE 315)

	RCA production		RCA exports		Import penetration intra-EU (%)		Import penetration extra-EU (%)		Export share (%)		Share (%) of foreign-owned production	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
GERMANY	1.12	1.25	1.37	1.32	2	5	2	3	16	17	7	3
SPAIN	0.53	0.56	0.52	0.81	26	37	53	22	7	13	n/a	n/a
FRANCE	2.45	2.04	1.31	1.25	3	3	0	0	7	10	3	7

Rail equipment (NACE 362)

	RCA production		RCA exports		Import penetration intra-EU (%)		Import penetration extra-EU (%)		Export share (%)		Share (%) of foreign-owned production	
	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
GERMANY	0.53	0.49	0.98	2.82	10	10	12	11	56	55	n/a	n/a
SPAIN	1.74	2.3	0.43	0.97	58	30	98	21	4	13	26	30
FRANCE	1.03	0.88	5.02	1.2	7	18	9	13	67	56	23	10

Note: RCA is the revealed comparative advantage of production or exports calculated as: (Xjk/Xjeu) / (Xk/Xeu)
where *Xjk* is production or exports of industry *j* from country *k*; *Xk* is total manufacturing output or exports from country *k*.
Import penetration is imports divided by demand - production - exports + imports.
Export share equals exports divided by total production.

Source: Adapted from tables in Davies and Lyons (1996).

Table 5.5. Pharmaceutical M&As by value (UK£ million)

	1989	1990	1991	1992	1993	1994	Total
Manufacturing							
Domestic	9,961	8,342	9,305	8,208	5,912	8,586	50,314
X-border	2,849	6,597	3,457	6,752	2,563	6,659	28,877
Extra-EC	10,423	8,726	2,934	6,159	4,564	5,086	37,892
Total EC	23,233	23,665	15,696	21,119	13,039	20,331	117,083
Pharmaceuticals							
Domestic	387	502	472	160	5	793	2319
X-border	91	9	319	3	43	1321	1787
Extra-EC	4650	320	150	340	142	1246	6847
Total EC	5128	830	942	503	189	3360	10953
D pharmaceuticals	387	502	472	160	5	793	2319
D manufacturing	9,961	8,342	9,305	8,208	5,912	8,586	50,314
Share	3.89%	6.02%	5.08%	1.95%	0.08%	9.23%	4.61%
X-B pharmaceuticals	91	9	319	3	43	1,321	1,787
X-B manufacturing	2,849	6,597	3,457	6,752	2,563	6,659	28,877
Share	3.21%	0.13%	9.24%	0.05%	1.67%	19.84%	6.19%
Ex-EC pharmaceuticals	4650	320	150	340	142	1246	6847
Ex-EC manufacturing	10,423	8,726	2,934	6,159	4,564	5,086	37,892
Share	44.61%	3.66%	5.13%	5.51%	3.11%	24.50%	18.07%
Total pharmaceuticals	5,128	830	942	503	189	3,360	10,953
Total manufacturing	23,233	23,665	15,696	21,119	13,039	20,331	117,083
Share	22.07%	3.51%	6.00%	2.38%	1.45%	16.53%	9.36%

Source: AMDATA.

Table 5.6. Pharmaceutical M&As by number

	1989	1990	1991	1992	1993	1994	Total
Manufacturing							
Domestic	1,549	1,450	1,614	1,478	1,326	1,328	8,745
X-border	415	435	386	306	277	305	2,124
Extra-EC	344	360	330	302	300	337	1,973
Total EC	2,308	2,245	2,330	2,086	1,903	1,970	12,842
Pharmaceuticals							
Domestic	18	21	22	28	13	21	123
X-border	15	17	10	11	18	13	84
Extra-EC	16	17	14	27	11	20	105
Total EC	49	55	46	66	42	54	312
D pharmaceuticals	18	21	22	28	13	21	123
D manufacturing	1,549	1,450	1,614	1,478	1,326	1,328	8,745
Share	1.16%	1.45%	1.36%	1.89%	0.98%	1.58%	1.41%
X-B pharmaceuticals	15	17	10	11	18	13	84
X-B manufacturing	415	435	386	306	277	305	2,124
Share	3.61%	3.91%	2.59%	3.59%	6.50%	4.26%	3.95%
Ex-EC pharmaceuticals	16	17	14	27	11	20	105
Ex-EC manufacturing	344	360	330	302	300	337	1,973
Share	4.65%	4.72%	4.24%	8.94%	3.67%	5.93%	5.32%
Total pharmaceuticals	49	55	46	66	42	54	312
Total manufacturing	2,308	2,245	2,330	2,086	1,903	1,970	12,842
Share	2.12%	2.45%	1.97%	3.16%	2.21%	2.74%	2.43%

Source: AMDATA.

Table 5.7.   Textile M&As by value (UK£ million)

	1989	1990	1991	1992	1993	1994	Total
Manufacturing							
Domestic	9,961	8,342	9,305	8,208	5,912	8,586	50,314
X-border	2,849	6,597	3,457	6,752	2,563	6,659	28,877
Extra-EC	10,423	8,726	2,934	6,159	4,564	5,086	37,892
Total EC	23,233	23,665	15,696	21,119	13,039	20,331	117,083
Textiles							
Domestic	251	191	463	106	83	175	1269
X-border	35	26	88	52	28	73	304
Extra-EC	48	2	170	22	12	46	300
Total EC	334	219	721	180	123	294	1873
D textiles	251	191	463	106	83	175	2319
D manufacturing	9,961	8,342	9,305	8,208	5,912	8,586	50,314
Share	2.52%	2.29%	4.98%	1.29%	1.40%	2.04%	4.61%
X-B textiles	35	26	88	52	28	73	304
X-B manufacturing	2,849	6,597	3,457	6,752	2,563	6,659	28,877
Share	1.24%	0.39%	2.56%	0.77%	1.11%	1.10%	1.05%
Ex-EC textiles	48	2	170	22	12	46	300
Ex-EC manufacturing	10,423	8,726	2,934	6,159	4,564	5,086	37,892
Share	0.46%	0.03%	5.79%	0.36%	0.26%	0.90%	0.79%
Total textiles	334	219	721	180	123	294	1873
Total manufacturing	23,233	23,665	15,696	21,119	13,039	20,331	117,083
Share	1.44%	0.93%	4.60%	0.85%	0.95%	1.45%	1.60%

Source: AMDATA.

Table 5.8.   Textile M&As by number

	1989	1990	1991	1992	1993	1994	Total
Manufacturing							
Domestic	1,549	1,450	1,614	1,478	1,326	1,328	8,745
X-border	415	435	386	306	277	305	2,124
Extra-EC	344	360	330	302	300	337	1,973
Total EC	2,308	2,245	2,330	2,086	1,903	1,970	12,842
Textiles							
Domestic	61	66	68	59	61	42	357
X-border	14	8	18	14	18	5	77
Extra-EC	7	7	6	11	7	4	42
Total EC	82	81	92	84	86	51	476
D textiles	61	66	68	59	61	42	357
D manufacturing	1,549	1,450	1,614	1,478	1,326	1,328	8,745
Share	3.94%	4.55%	4.21%	3.99%	4.60%	3.16%	4.08%
X-B textiles	14	8	18	14	18	5	77
X-B manufacturing	415	435	386	306	277	305	2,124
Share	3.37%	1.84%	4.66%	4.58%	6.50%	1.64%	3.63%
Ex-EC textiles	7	7	6	11	7	4	42
Ex-EC manufacturing	344	360	330	302	300	337	1,973
Share	2.03%	1.94%	1.82%	3.64%	2.33%	1.19%	2.13%
Total textiles	82	81	92	84	86	51	476
Total manufacturing	2,308	2,245	2,330	2,086	1,903	1,970	12,842
Share	3.55%	3.61%	3.95%	4.03%	4.52%	2.59%	3.71%

Source: AMDATA.

Table 5.9. Sales by US affiliates in 'sensitive sectors' for selected regions - indexed growth

Sector	1982-89 (1982=100)			1989-92 (1989=100)			1982-92 (1982=100)		
	All countries	Europe	RoW	All countries	Europe	RoW	All countries	Europe	RoW
High impact									
Beverages	173.9	162.2	183.3	156.9	193.3	131.1	272.9	313.5	240.3
Drugs	182.0	214.8	141.3	159.3	167.6	143.7	289.9	360.1	203.1
Office/computing	324.3	296.4	400.2	123.8	123.9	123.6	401.4	367.1	494.8
Radio, TV communications	80.5		31.3	132.1	101.1	180.6	106.4		56.6
Electronic components	229.5	203.5	244.6	135.4	149.0	128.9	310.9	303.2	315.3
Instruments	195.6	181.2	247.6	130.2	137.4	111.2	254.7	248.9	275.5
Finance, except banking	249.3	457.8	164.6	147.1	188.0	100.8	366.7	860.4	165.9
Insurance	182.4	183.0	182.0	138.0	136.9	138.4	251.7	250.5	252.1
Total high impact	219.9	255.0	187.4	136.3	143.3	127.5	299.7	365.4	239.0
Moderate impact									
Other food products	164.5	218.0	112.8	160.0	161.4	157.3	263.2	351.9	177.5
Other chemical products	145.6	193.6	100.4	107.8	116.8	91.6	157.0	226.1	92.0
Other machinery	127.9	124.2	132.3	84.8	101.8	66.2	108.4	126.4	87.6
Household appliances	321.1	311.5	328.8	113.3	142.9	90.9	363.7	445.0	298.8
Transportation equipment	200.0	218.8	185.1	118.2	135.9	101.5	236.4	297.3	187.9
Textile products and apparel	148.9	140.6	158.7	131.9	154.4	108.4	196.5	217.1	172.1
Rubber products	144.5	237.8	101.9	109.9	110.3	109.4	158.7	262.4	111.4
Glass products	187.0	180.0	200.2	94.1	117.1	55.1	175.9	210.8	110.3
Wholesale trade	179.8	174.5	192.4	118.6	115.3	125.6	213.2	201.2	241.5
Business Services	158.1	152.9	171.4	179.4	193.1	148.1	283.5	295.1	253.8
Total moderate impact	177.2	185.6	165.5	120.9	126.0	112.9	214.3	233.9	186.9
All industries	139.7	157.3	122.1	127.3	133.5	119.4	177.8	209.9	145.8
(minus petroleum)	67.4	78.7	58.9	133.1	135.4	130.9	89.7	106.6	77.1
(minus sensitive sectors)	188.6	201.7	172.3	125.7	131.1	117.9	237.2	264.3	203.2
Total low impact	161.9	168.0	155.8	127.1	140.1	113.1	205.7	235.4	176.1

Source : US Commerce Department, Benchmark Surveys (various).

Figure 5.1.   Intra-EU trade and M&A activity
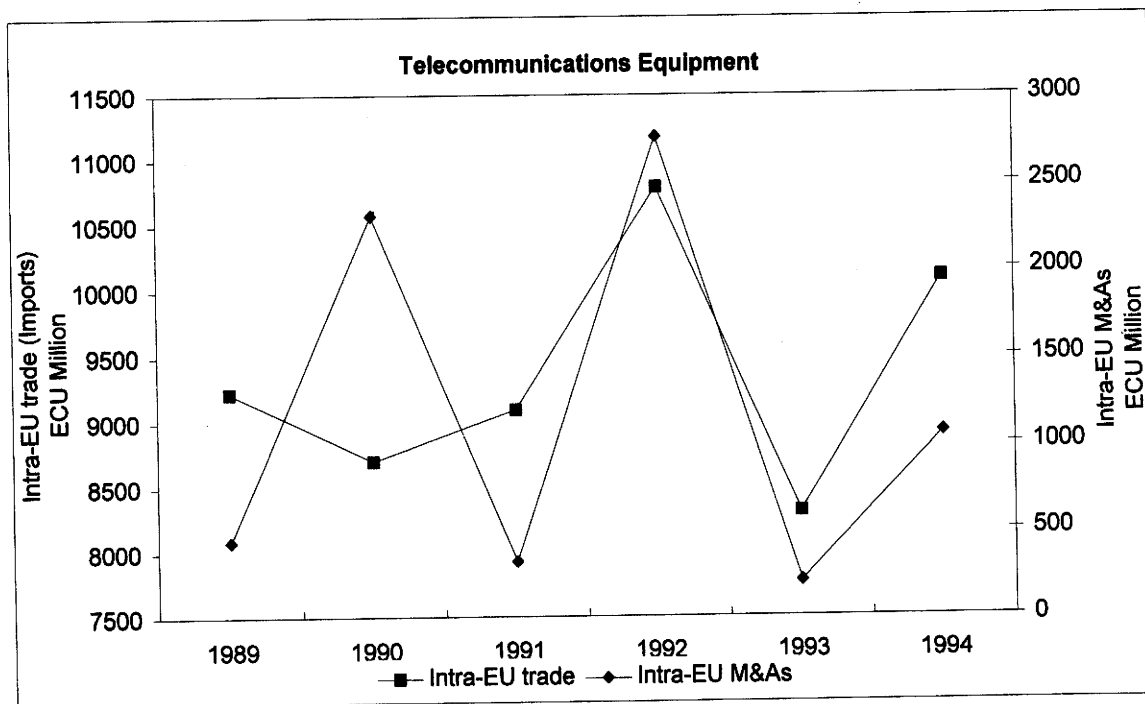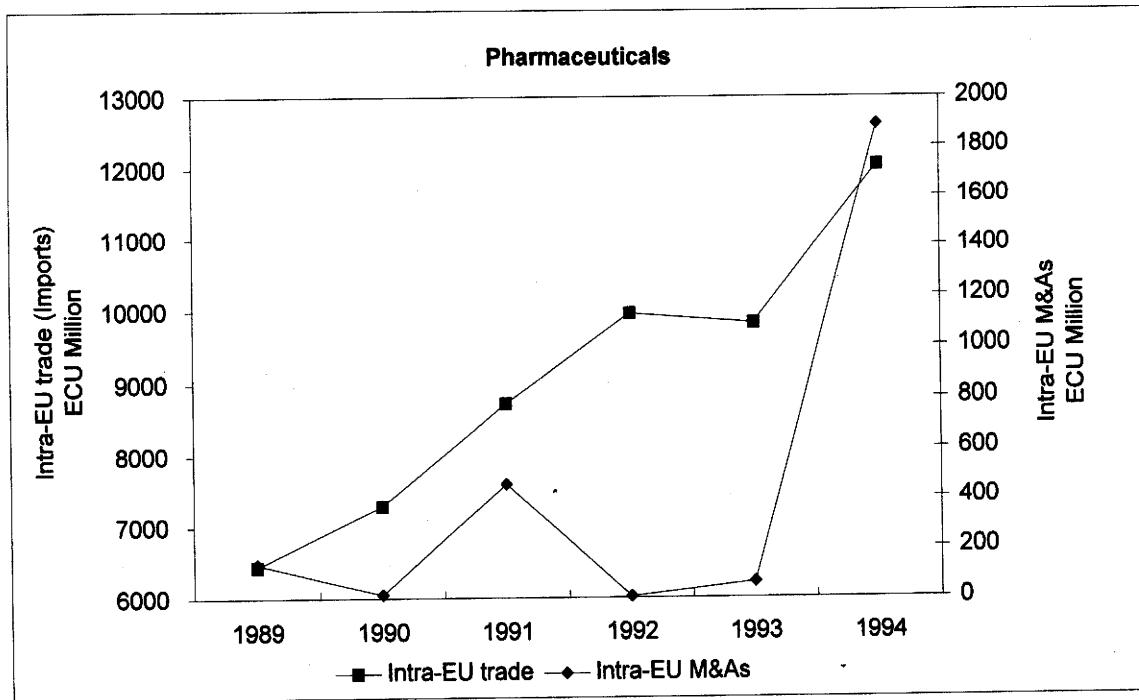
Source: Eurostat and AMDATA.

5.5. Conclusion

It was never intended that this study should duplicate the work undertaken elsewhere on the development of intra-EU trade flows. Nevertheless, some stylized facts from parallel research projects are appropriate at this point. Data assembled by the European Commission (1996) suggest that, in aggregate within the EU, the SM has led to an increase in intra-industry trade among products that are vertically-differentiated (by price). This is suggestive of a regional specialization of labour along the value-chain, with high value-added activities being performed in the core countries and low value assembly work being undertaken in the periphery.

Clearly there are implications in this trend for the Union's stated objective of convergence (to which we return later), but the study does not link this phenomenon with FDI. The dummy variable used to proxy FDI (derived from M&A data) was not found to be significant in the model, and the study found no evidence of agglomeration occurring. FDI (in the form of M&As) was found to be intra-industry trade creating, but at least in the case of Spain there was also support for the proposition that such investment can lead to an upgrading of human capital, technology and other ownership advantages in the receiving firm.

As stated previously, the extant data on FDI does not allow a comparable typology to be developed for the present study. Drawing on Petri's (1994) analysis it would appear that, from a policy perspective, the similarity of trade and FDI clusters suggests that the evaluation of the effects of the SM may be similar whether approached from the perspective of trade or of FDI. If the overlap between trade and investment clusters reflects causal, complementary relationships between these flows, then policy measures that stimulate one or the other will be especially successful.

Indeed, regional integration measures such as the SM, by reducing intra-regional barriers, may enhance the value of FDI as a mechanism for linking together regional blocs in the global economy. Evidence presented in Table 5.9 suggests that the sales of European affiliates of US MNEs in the sensitive sectors have also increased markedly more than the 'low impact' industries over the periods 1982–89 and 1989–92. The inference here is that the SM enabled US MNEs to expand their operations in Europe through the growth of their affiliates rather than by exports from their home country.

Early estimates of the economic impact of the single market suggested that a high proportion of the initial gains would arise from exploitation of economies of scale as a result of industrial restructuring (Cecchini et al., 1988). The reduction in barriers to market entry could be viewed as allowing firms to produce in the lowest cost locations, exploit the economies of scale arising from the existence of firm-specific fixed costs, and serve final markets through trade rather than from local production.

An implication of this is that intra-EU direct investment might be ultimately lower than otherwise as a result of the SMP, although it could be raised during a transitional period if the restructuring process required new cross-border investment to ensure that all stages of production were located in the lowest cost locations. Cantwell (1992a) argues that the scope for 'economies of location' is highest in industries that produce a wide variety of products, such as motor vehicles and electronics. The move towards a vertically-integrated production structure in such industries could be expected to generate additional investment in labour intensive, assembly

activities in sites on the periphery of Europe with relatively lower labour costs. Other, capital-intensive, activities would be located closer to the industrial core of central Europe.

Whilst it is clear that there is scope for restructuring along these lines in some sectors, there are also a number of reasons why the measures introduced in the SMP might be expected to stimulate intra-EU direct investment. First, trade and direct investment are not necessarily substitutes. This is particularly true of 'downstream services' (Baldwin, 1990), with foreign investment in dealer networks and after-sales care and maintenance facilities often required to promote sales in foreign markets. US data supports this point and gives further confirmation to the increasing role of FDI in the EC relative to trade. FDI in wholesale trade may be thought to be trade-supporting, and yet for the period 1982–89, US FDI for this sector in Europe rose by 74.8%, as opposed 92.8% for the rest of the world.

There is also evidence that the initial stimulus to direct investment in service sectors such as banking is provided by the extent of the activities of home country clients in foreign markets. More directly, the data, such as it is, suggests that around one-half of total investment in the distribution service sector and around one-third of investment in financial and other services is undertaken by manufacturing firms (Campayne, 1992).

Generally, it is to be expected that the reduction in non-tariff barriers might raise direct investment levels in non-tradable sectors, with legislation based on the single licence principle facilitating market entry in financial services. Using game theory, Acocella[45] is able to point to strategic motivations that may lie behind firms' FDI decisions, particularly FDI undertaken by means of merger or acquisition, as a means to build market power.

The creation of regional corporate networks is ultimately leading to a recasting in more complex forms of the traditional trade and investment dichotomy, as MNEs integrate their value-added activities (both within and outside the EU) to serve the European marketplace. As John Cantwell has observed '...At least within the EC, direct investment is now more of a complement to than a substitute for trade'.[46] This shift can be at least partly attributed to the particular characteristics of the SMP. Whereas Mark I integration (removal of tariff barriers) focused attention on the **location** of production (with firms producing within one country being favoured relative to those outside), Mark II integration is at least as much concerned with the **ownership** of production (in, for example, the liberalization of public procurement). If fully implemented, this will benefit firms with the most efficient regional production strategies, often with extensive trade in intermediate goods, irrespective of from where the final product is delivered.

There is some evidence pointing to a more traditional relationship in the case of sensitive sectors. On the basis of their data, Davies and Lyons felt able to conclude:

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[45] Acocella, N. in Cantwell, J. (ed.) (1992b).

[46] Cantwell, J. (1992b) p. 9.

Looking in detail at the structure of public procurement industries in 1987, we find that they did have lower levels of import penetration, and high tech industries did compensate by multinational operations. Five years later, when some important parts of the single market programme had been implemented, we could already observe some unwinding of these multinational operations. The geographical specialization of the EU had not yet changed significantly, but there were signs of change in trade and ownership.[47]

As we have seen, the SM could then potentially lead to a shift from 'import substituting' or defensive market-seeking FDI to 'export platform' or efficiency-seeking FDI, which would dramatically shift the balance of power between governments and firms in favour of the latter. Whereas previously firms in these sectors had to court government purchasers by, for example, offering employment through local production, now the emphasis was on governments to offer an attractive location for pan-European production.

If the SM becomes fully operational, the distribution of industrial activity across the EU is therefore likely to increasingly be determined by the factor endowments – both natural and acquired – rather than artificial political considerations. Member states, and the regions within them, will have to offer attractive locations if they are not to lose out in the competition for inward investment. For some parts of the value chain, such as R&D, this could be a highly-educated skill base; for others, such as final assembly, this would simply be a low-cost labour force. Access to efficient transport and communication networks will be critical throughout the vertically-integrated operations of pan-European firms.

Upgrading their locational attractiveness to footloose firms is consequently becoming a major objective for Member States, but there are policy issues at the Union level too, particularly with respect to the aim of convergence prior to Economic and Monetary Union. Is the single market bringing Europe together in an integrated regional economy, or segmenting it into high and low value-added activity? It is to this important subject that our study now turns.

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[47] Davies and Lyons (1996), op. cit., p. 370.

6. FDI and geographic concentration

6.1. Introduction

As the previous chapter highlighted, the single market may not necessarily lead to the desired objective of economic convergence among Member States if industrial agglomeration occurs. The theory behind this phenomenon is described in Chapter 3, but it essentially relates to the observed tendency of firms to congregate in regions where sectoral activity is already high. This is most likely in industries where there are both significant economies of scale and low transport costs. In other words, a concentration of industrial activity in an arbitrary location can occur for reasons that are sector-specific, rather than location-specific.[48]

The new literature on economic geography suggests that the initial stages of a decline in barriers to trade might simply generate increased agglomeration (Krugman and Venables, 1994). Regional differentiation within such models is driven by the interaction between scale economies and transport costs. If trade costs are high, there is little separation between the location of production and consumption, but if the costs to trade are minimal, production is extremely sensitive to differences in factor costs.

However, agglomeration effects may arise under the combination of intermediate levels of trade costs as barriers to market entry are reduced, and increasing returns to-scale, with the need to be near suppliers and customers, resulting in 'clustering'. This may be one factor behind the observed importance of distance in determining the location of direct investment within Europe (Thomsen and Woolcock, 1993), with many firms continuing to locate close to, or within, large markets, rather than in cheaper regions on the periphery of the Union.

If the concentration hypothesis is validated, there are clear implications for Member States that were hoping to attract increased inward investment as a consequence of their locational advantages, such as low-cost labour. The single market might, under this scenario, result in their losing share of such investment, as firms establish pan-EU locations to serve the EU market and exploit economies of scale.

Krugman's analysis suggests that concentration will not necessarily be most pronounced in the high technology sectors, but will be particularly pronounced in the service sector. Casual observation might support this, with many EU financial service firms now choosing to locate in the city of London, even though most transactions are undertaken by telephone and could theoretically be equally well-executed from another (and most probably cheaper) location.

6.2. Empirical investigation

6.2.1. Member State perspective

We begin this section with an overview of the geographical trends for inward FDI flows. Table 6.1 presents data for the share of all inward flows received over the period 1982–93 by the Member States of the EU. Member States are classified as to whether they fall into the 'high

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[48]   Krugman and Venables (1990).

income' group (often described as the core countries) or the 'medium income' group (peripheral countries), and the totals for each of these groups is also given.

Table 6.1. **Share of FDI inflows into the EU from all countries accounted for by individual EU countries (%)**

		1982–87	1988–90	1991–93
High income	Belgium and Luxembourg	6.4	8.5	14.3
	Denmark	0.1	1.2	2.0
	France	14.7	13.4	26.6
	Germany	7.9	8.7	6.8
	Italy	7.2	6.5	4.2
	Netherlands	10.6	10.5	7.8
	United Kingdom	35.1	35.5	22.3
	Total	82	84.3	84.0
Medium income	Greece	2.6	1.1	1.5
	Ireland	0.7	0.1	0.1
	Portugal	1.3	2.2	2.6
	Spain	13.3	12.3	11.8
	Total	18.0	15.7	16.0
European Union	**Total**	**100.0**	**100.0**	**100.0**

Source: Based on UNCTAD (1994) and IMF data.

Within the high income group, there appears to be a marked difference between high growth of France's and Belgium/Luxembourg's share, and the declining share of the United Kingdom since the early 1990s. The position of the United Kingdom as the most important recipient of FDI in and into the European Union has been decreasing in favour of France since the beginning of the 1990s. The other significant gainer, in terms of share of worldwide inflows since the early 1990s, has been Belgium/Luxembourg, apparently well on course to rival the United Kingdom's share. However, the impression that the United Kingdom has been losing ground is partly due to a reflection of the fact that the value of the British pound sterling decreased by 26% against other EU currencies between 1983 and 1992.

Overall, the proportion of inflows into the high and medium income groups has remained remarkably constant over the 11 year period considered here. Although the medium income countries as a group experienced an increasingly important role as hosts of worldwide FDI flows during the 1980s, their share seems to be stagnating, if not declining, in more recent years.

As would be expected, a comparable picture emerges from growth rates in inward FDI stock (Table 6.2), where the second half of the 1980s marked the most dramatic increase in inward stock for the European Union countries.

Table 6.2.   Average annual increase in FDI inward stock for individual EU countries

		1980–85	1985–90	1990–92	1992–93
High income	Belgium and Luxembourg	4.2	62.9	77.9	18.6
	Denmark	-2.8	30.9	14.0	14.6
	France	9.5	31.8	18.9	17.4
	Germany	0.2	44.8	8.4	0.8
	Italy	22.7	41.1	4.1	6.0
	Netherlands	30.8	38.4	7.2	6.7
	United Kingdom	-0.1	45.2	-7.5	7.6
Medium income	Greece	16.7	13.7	8.1	6.0
	Ireland	4.8	1.4	2.0	1.7
	Portugal	7.5	141.0	33.9	15.5
	Spain	14.8	128.3	23.9	7.4
European Union	**Average**	**4.1**	**44.0**	**6.5**	**8.6**

Source: Based on UNCTAD (1994) and IMF data.

All high income countries saw high growth rates during the earlier part of this period, but only Belgium/Luxembourg's highest rate continued during the early 1990s, while those of the others fell significantly against the background of the overall FDI recession. Quite spectacular growth rates for Spain and Portugal for that period must be seen against their very young stock figures, which also makes their much smaller inward stock increases in the early 1990s seem particularly stark in contrast. Given the continuing nature of the SMP, one might infer that the increase in FDI inflows of the later 1980s in the Iberian peninsula was associated more with accession to the EC (Mark I integration) than with Mark II integration of the SMP.

It is possible to measure the changing significance of FDI to a national economy using a variety of measures to accommodate for differing industrial structures and market sizes. Table 6.3 presents the significance ratios of FDI inflows to gross fixed capital formation (GFCF) for Member States, while Table 6.4 presents the equivalent ratio with respect to GDP.

Table 6.3.   **Significance (ratios) of FDI inflows to GFCF for individual EU countries**

		1981–85	1986–90	1991–92
High income	Belgium and Luxembourg	7.3	14.8	17.8
	Denmark	0.9	2.7	5.7
	France	2.0	3.7	7.1
	Germany	1.1	1.6	1.9
	Italy	1.2	2.1	1.3
	Netherlands	6.1	11.6	8.8
	United Kingdom	5.6	13.6	11.1
Medium income	Greece	7.2	7.9	8.4
	Ireland	4.1	1.1	1.3
	Portugal	3.6	9.6	11.1
	Spain	5.5	9.0	7.3
European Union		**2.8**	**5.6**	**5.7**

Source: Based on UNCTAD (1994) and IMF data.

In terms of the significance of inward FDI compared to local investment, the above table suggests that France, Belgium and Denmark have experienced the largest increase in these ratios over the period under review, although the increase in Portugal's ratio is also striking. This table also confirms the fact that the Benelux countries and the UK are the most internationalized of the Member State economies.

In relation to GDP (Table 6.4), inward stock has climbed fairly consistently during the period 1982 to 1992 for all European Union countries, except Ireland, whose ratio with respect to GFCF also declined. This phenomenon can perhaps be attributed to the strong growth rates seen in that country over recent years, and that the FDI flow data may not be capturing the re-invested profits of the many MNEs that have been established in Ireland for many years.

Table 6.4.   Significance of FDI inward stock to GDP for individual EU countries

		1982–87	1988–90	1991	1992
High income	Belgium and Luxembourg	6.3	11.2	19.1	26.1
	Denmark	6.3	6.3	7.0	9.5
	France	3.5	6.5	7.2	9.0
	Germany	4.5	5.9	8.0	7.2
	Italy	2.3	5.3	5.3	5.1
	Netherlands	11.4	20.1	26.2	26.1
	United Kingdom	12.1	13.8	20.9	19.2
Medium income	Greece	12.7	28.5	24.2	24.2
	Ireland	21.1	25.2	11.7	12.0
	Portugal	2.6	3.9	11.2	13.4
	Spain	2.6	5.4	13.5	17.0
European Union		**5.8**	**8.7**	**11.3**	**11.5**

Source: Based on UNCTAD (1994) and IMF data.

6.2.2.   Sectoral perspective

The above survey did not provide evidence of a geographical concentration of FDI at the level of Member States. However, the literature suggests that if agglomeration does occur it will primarily be in those particular sectors with the characteristics discussed at the start of the chapter. Tables 6.1 to 6.4 therefore tell us little about the quality of the investments being made in these countries. However, it is at this point that significant data problems, in terms of cross-referencing sectors and countries, begin to be encountered.

Using the available sectoral split from Eurostat, we focused on developments in FDI inflows for selected countries in the electrical, chemical and financial services sectors concerning the share of total EC inflows accounted for by these Member States. Within these broad two-digit headings, however, there are a number of 'sensitive sectors' identified at the three-digit level. There will also, of course, be many low value-added activities, but we might nevertheless expect to see evidence of some agglomeration occurring.

Three different time periods were considered – 1984–86 (pre-SM), 1987–89 and 1990–92 – and average sectoral inflows for France, Germany, Spain and the UK were analysed. In the case of Spain, data on inflows were taken from alternative sources (as cited) because the Eurostat observations were so limited. Table 6.5 gives the value of such inflows in ECU, broken down into intra- and extra-EU flows. Table 6.6 recalculates these values as a percentage of total EU inward flows in these sectors.

Unfortunately, even when the values have been averaged across three-year time periods, the data constraints (including negative values/disinvestments and missing observations) have tended to give rather ambiguous results, as can be seen in Tables 6.5 and 6.6. The data problem is particularly acute for Germany. Nevertheless, some interesting trends do seem to become

apparent. Figure 6.1 illustrates the development of inward FDI flows for the period 1984–92 with respect to financial services, for example; and it is possible to point to a concentration trend that favours France at the expense of Germany. This is particularly true of intra-EU trends, where Germany's share has fallen from over half to around 17%, while France has increased its share from less than 19% to nearly 30%. Interestingly, the UK's share of such investment hovers consistently around 10%, despite its assumed strengths in this sector.

In electrical sectors however, the UK does seem to have been able to attract increasing shares of FDI inflows, particularly from extra-European investors. Other evidence would support this (see Chapter 9), as Far Eastern companies, particularly Japanese ones, have established a number of sites in UK regions to produce electronic consumer goods for the EU.

A more confused picture of FDI patterns over the period 1984–92 emerges in the case of the chemical sector. Nearly 70% of all inflows into this sector occurred in the period 1987–89, after which there is a dramatic tail-off; indeed, across the EU as a whole for the period 1990–92, there is net disinvestment by extra-EU firms. This is suggestive of a heavy restructuring programme after the announcement of the single market, presumably in an attempt to realize economies of scale, following which excess capacity in other Member States was sold off.

Given the need to compare across and between EU countries, Eurostat is the most suitable primary source for testing this hypothesis as it applies to the Union as a whole. National sources may provide interesting supporting evidence as to the concentration of sectoral activity in individual countries, but it is difficult to distinguish between sectoral pressures for rationalization, and agglomeration relative to the rest of the EU which may be due to the single market, from such data. However, as we have seen, the sectoral breakdown is limited, there are wild fluctuations and lacunae, and the available data tells us little about the quality of such investment.

6.2.3. Technology and concentration

In an integrated regional economy such the EU, multinational firms operating in one sector may choose to locate certain high-tech activities (such as R&D) in one country, and other low-tech activities (such as simple assembly) in another. Such location decisions would be determined by the relative resource endowments of each country, and whether or not such activities formed part of a single, internalized value chain would depend on firm-specific factors.

Technological activity is particularly associated with MNEs, who are now the major vehicle for technological diffusion across countries. In 1990, the world's top 20 MNEs spent over US$ 50 billion on R&D, equivalent to about one-eighth of the worldwide total.[49] Clearly, concern remains as to how far a host country's technology base is enhanced by inward FDI if the technology remains strictly internalized within the MNE. We return to this issue in the conclusions of this chapter.

To explore this issue further we have sought to distinguish between the different characteristics of FDI activity along the value chain through analysis of the automotive sector. We have data on M&A transactions in Europe for the period 1989–94, broken down as shown below. Although

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[49] OECD data. Excludes Central and Eastern Europe, but includes government spending.

the classification is to some extent arbitrary, it is not unreasonable to classify automotive components as high technology manufacturing, with vehicle assembly being considered a mid-level technological process. Examination of which countries have attracted increasing shares of inward investment (as proxied by M&As) in each of these two sectors may shed light on the competing locational advantages of European states.

Sector	SIC
Automotive assembly	3510
Automotive components	3530 plus some of: 3434, 4836, 4812, 4811

Tables 6.7 (assembly) and 6.8 (components) point to some of the dramatic restructuring that has taken place in the automotive sector in the period 1989–94. Each table is broken down into three parts indicating M&As where:

(a)   both parties were of the same Member State (domestic),
(b)   the two parties were from two different Member States (EC cross-border),
(c)   the investor/bidder was from outside the EC (extra-EC investor).

As in Chapter 5, we have included data on both the number and value of transactions, so as to allow for the differing capital market structures in each Member State, since many substantial deals in continental Europe involve privately-owned firms and are of non-disclosed value.

It is worth noting in advance that a few major acquisitions of UK firms have substantially affected the value pattern in automotive assembly. These are clearly apparent in 1989 (extra-EC investor – Ford buys Jaguar) and 1994 (EC cross-border – BMW buys Rover). If we exclude these, or consider the assembly sector in terms of number of transactions, the picture is much more one of consolidation at the national level, with domestic deals (72) far exceeding the other two categories (both 15).

In part, this reflects the pattern in the manufacturing sector as a whole; and a similar picture emerges in the automotive component sector. In both cases, extra-EC investment exceeds EC cross-border investment by value, although not by number of transactions; which is again consistent with the broader pattern in manufacturing. The value and number of domestic transactions in the component sector is significantly higher than for assembly. The number of cross-border and extra-EC investments in components is also much higher; but when considered by value, the two large acquisitions of UK assembly firms reverse this pattern.

An examination of the data offers mixed evidence for the contention that the single market is leading to a geographical concentration. In the case of automotive assembly (Table 6.7) the two major acquisitions at the beginning and end of our period of study point to the UK's strengths in this sector, further underlined by the substantial greenfield investment undertaken in particular by Japanese firms, which does not appear in our tables. Interestingly, three significant acquisitions (totalling nearly UK£ 300 million) of Spanish assembly firms by foreign MNEs suggests that Spain may be becoming a centre for such production, even though its indigenous firms did not engage in any domestic transactions during the period 1989–94.

Moreover, while French and German assembly firms have been actively consolidating through domestic M&As (accounting for almost 40% of all such sectoral transactions over the period), their attractiveness to foreign buyers has seemed very modest by comparison. One French firm was bought by an extra-EC firm in 1990 for over UK£ 600 million, and there were two such buyers in 1994 of German firms for undisclosed values. Recently, Spanish (1) and Italian (4) firms have also been sold to extra-EC investors.

Switching to the more technology-intensive component sector, a rather different picture emerges, with Germany now the pre-eminent host country. Its share of all EC transactions for assembly rises from one-quarter to one-third by number, and 40% by value, for component firm M&As, and dominates all transaction categories according to either measure. The one exception to this picture is the number of French firms bought by other EC firms (25), although the disclosed values are quite small for the period (UK£ 41 million).

The UK component sector has also proved attractive to buyers, both foreign and domestic, although overseas interest has lately tailed off as domestic activity has increased. This may well be indicative of domestic macroeconomic and stockmarket cycles as much as of any regional concentration phenomenon. Booming UK equity prices may help finance share-swap take-overs, even as they make British firms too expensive for overseas buyers.

It is striking, moreover, that there has been no increase in overseas acquisitions after the UK left the Exchange Rate Mechanism in 1992 and the pound was devalued sharply. However, much of the rest of Europe was still in recession, although there is some increase in the number of purchases of UK component firms by extra-EC investors. Italy, whose currency suffered a similar fate, also saw a dramatic increase in investment from extra-EC firms in 1994.

The Spanish automotive component industry was highly rated recently by external analysts,[50] but has not as yet attracted significant buying interest, although EC cross-border transactions in 1994 (three at UK£ 2.46 million) were notable in an otherwise quiet year. As in the assembly sector, Spanish firms are far more likely to be bought by other EC firms than by extra-EC investors, suggesting that EC firms view their acquisitions in terms of a regional production network.

Evidence for the pharmaceutical sector, presented in Table 6.9, gives a similarly mixed picture, with France the principal locus of activity for domestic, cross-border activity, although the UK has experienced one or two major transactions that make trend analysis difficult. Italy was the centre of considerable investment interest from all areas, even though it is not considered a major centre of technological innovation in this sector. However, Italy, like France, does have a number of specialist niche players in the pharmaceutical sector (often SMEs, which accounts for the low reported values), who have found the challenges of marketing their products in the single market insuperable except as part of an MNE.

In the case of financial services (Table 6.10), the anticipated agglomeration in the UK does not seem to be occurring for intra-EU investors; indeed, investment seems to have tailed off in recent years. This AMDATA finding is consistent with the Eurostat data presented for the earlier period in Figure 6.1. Similarly, France and the Netherlands have both attracted more such investment by

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[50] Andersen Consulting, 'Worldwide Manufacturing Competitiveness Study', London (1995).

value, and Italy is also a major locus of intra-EU transactions, reflecting strong domestic activity which has been consistently high over the period.

Only in the case of extra-EU M&As does the UK exert any sort of special attraction, and it has been the target of 57% by value of all such transactions (36.7% by number), spread fairly evenly over the period. One could plausibly argue that European retail banks and other financial services such as insurance are consolidating at the regional level, but that extra-regional firms see a presence in the UK as their 'European' regional office, from which they can serve the whole EU. Interestingly, buyers from the US (30.3%) and Japan (1%) together account for less than one-third of the total extra-EU activity.

6.3. Conclusion

There is, as we have seen from both Eurostat and AMDATA, little evidence of concentration occurring in the EC. In the case of the automotive industry (as an example of a high technology sector), however, sector-specific forces may be at work, resulting in, for example, the recent depressed levels of demand. Our ability to link any observed pattern with the implementation of the SM is restricted by the limited time observations we have, as there is no basis for comparison with an earlier period.

Thomsen and Woolcock (1993) argue that structural and technical barriers to take-overs within much of continental Europe may also act to constrain industrial restructuring undertaken by M&As. The Eurostat data points to a significant level of disinvestment by non-domestic firms, particularly in the chemical sector, but this would not be captured directly in the AMDATA material.

Quite possibly there are important sub-national, regional trends of agglomeration occurring within individual Member States, but these are beyond the scope of this report. The industrialized North Rhine–Westphalia region, for example, is far more likely to attract the high technology investments of a vertically- or horizontally-integrated MNE than is Saxony in the east, even though both would be recorded as investments in Germany. Similar regional extremes of industrial development are to be found in most Member States, even those usually considered to be on the periphery.

There is some evidence that extra-EC FDI may be more geographically concentrated (typically in the UK) than intra-EC FDI, but this may partly be due to more open capital markets, and a tradition of openness to investors which other Member States are now following. However, looking at US MNEs in the chemicals/machinery and electrical sectors reveals that, over the period 1982–91, the gross product of European affiliates in the four largest countries (the UK, France, Italy, Germany) rose by 85.3%, and by 111.2% for the rest of Europe. For all manufacturing, the corresponding figures are 96.6% and 167.3%, further refuting the expectations of agglomeration at the broad sectoral level (US Department of Commerce, various issues).

On a broader scale, it is clear that in many sectors the SMP has not fully created a homogenous single European market. Differences persist in national policies on the environment, health and safety and worker representation, and national consumer preferences often remain distinct. The food industry is another widely cited example (Cantwell, 1992a). In such circumstances, access to the major consumer markets of the EU is still critical; a point supported by Dunning (1994), who notes that transport infrastructure remains a significant concern for many firms, and

consumers are demanding increasingly differentiated products for which geographical proximity is a distinct advantage.

The issue of technology, its dissemination or concentration among Member States, and how the process might be affected by the single market, is also clearly a complex issue. As stated earlier, the level of technological activity associated with any given investment is not necessarily determined by the sector in which it takes place. Furthermore, the degree, if any, of technological transfer that occurs between countries, is also contingent on the structure of MNE operations. There are significant costs associated with the transfer of technology between independent firms, such as through licensing (Teece, 1977) which may be exacerbated across international borders, because of the need to adapt to an existing technological infrastructure. This usually requires the ongoing co-ordination of related innovatory activity by internalizing the process if the MNE is to appropriate the full economic rent on its ownership advantages (Dunning, 1985).

Cantwell (1992) has pointed out the need for local firms in a host country to have their own indigenous technological capacity so as to encourage external technological diffusion from inward investors. In other words, MNE activity alone will not enhance a Member State's technology base if the investor sees no advantage in externalizing some aspects of its production. As one example, he highlights particularly the European affiliates of US MNEs in the pharmaceutical sector, which established a virtuous circle of technological exchange and inter-action with their – already competitive – indigenous counterparts.

A similar pattern is now emerging among the more developed and integrated economies of the northern EC. Cantwell concludes:

> ... in most industries where a relatively strong intra-industry direct investment within the EC can be identified, a system of intra-industry technological activity has grown up to accompany it. The industries in question are chemicals and allied products, metal products, mechanical engineering and electrical equipment. Of these, the scale of activity is greatest in chemicals and electrical equipment. (Cantwell, 1992.)

Intra-industry investment may therefore be partly motivated by MNEs' search for complementary technologies to extend their horizontal product range. However, technological transfer can also occur vertically along the value chain in either direction. An often cited example of backward technological dissemination, from MNE assembly operations to component suppliers, is that of the Japanese carmakers now operating in the UK.

Figure 6.1.   Distribution of inward FDI for the financial services sector

1984-6

Germany	46.48
France	16.2
UK	19.71
Other EU	17.61
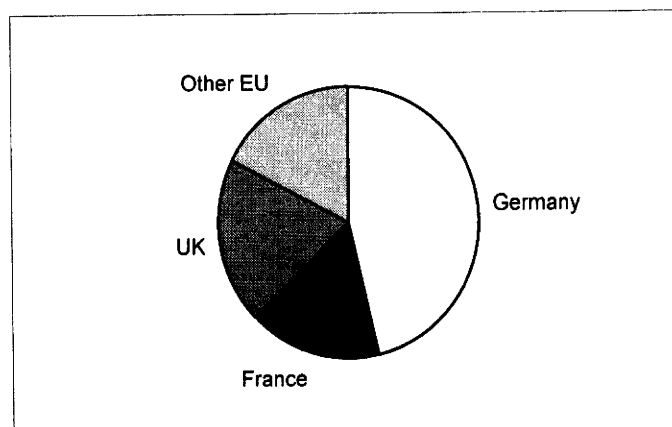
1987-9

Germany	37.79
France	15.72
UK	29.44
Other EU	17.05
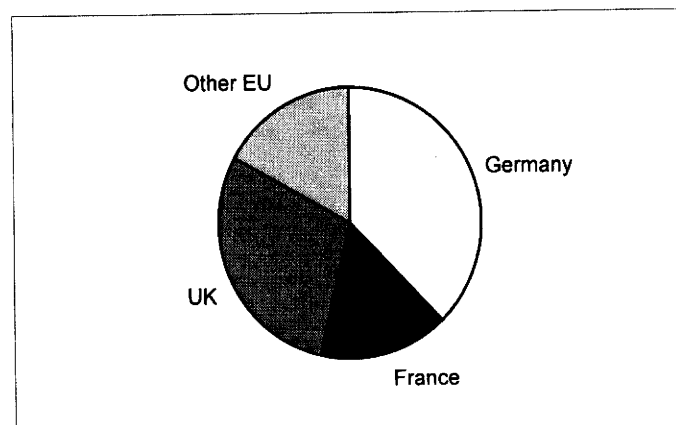
1990-2

Germany	29.24
France	20.69
UK	13.14
Other EU	36.93
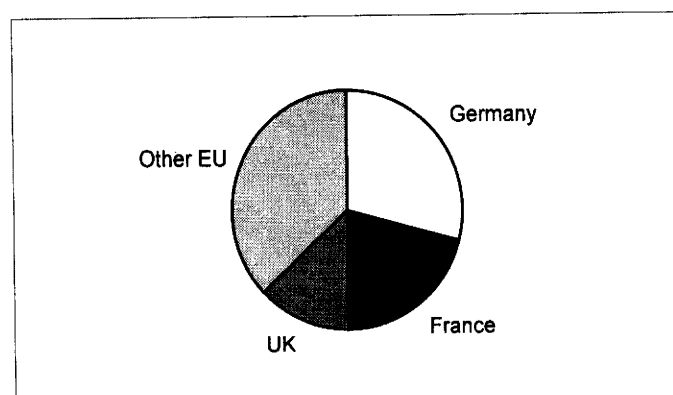
Source : Eurostat.

Table 6.5. FDI flows in the EC, absolute figures

Intra-EU inward FDI flows
broken down by receiving sector
(three-year averages in ECUm)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	246	885	1,629
Chemical	412	1,894	931
Financial	1,938	5,395	8,157

Germany	1984-1986	1987-1989	1990-1992
Electrical	11	-45	-35
Chemical	64	3	-438
Financial	997*	1,000	1,380

France	1984-1986	1987-1989	1990-1992
Electrical	52	120	108
Chemical	98	57	300
Financial	367	1,441	2,393

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	na	na
Chemical	na	na	na
Financial	na	na	na

UK	1984-1986	1987-1989	1990-1992
Electrical	27	199	189
Chemical	26	582	44
Financial	209**	447	756

Extra-EU inward FDI flows
broken down by receiving sector
(three-year averages in ECUm)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	476	1,547	913
Chemical	101	1,290	-54
Financial	1,816	5,884	8,614

Germany	1984-1986	1987-1989	1990-1992
Electrical	31	-41	-296
Chemical	-57	-49	-171
Financial	748*	1,133	1,061

France	1984-1986	1987-1989	1990-1992
Electrical	145	101	382
Chemical	56	149	135
Financial	241	332	1,077

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	na	na
Chemical	na	na	na
Financial	na	na	na

UK	1984-1986	1987-1989	1990-1992
Electrical	135	1,107	717
Chemical	56	419	280
Financial	531**	2,873	1,448

Total EU inward FDI flows
broken down by receiving sector
(three-year averages in ECUm)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	722	2432	2542
Chemical	513	3184	877
Financial	3754	11279	16771

Germany	1984-1986	1987-1989	1990-1992
Electrical	42	-86	-331
Chemical	7	-46	-609
Financial	1745*	2133	2441

France	1984-1986	1987-1989	1990-1992
Electrical	197	221	490
Chemical	154	206	435
Financial	608	1773	3470

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	256	520
Chemical	na	684	1144
Financial	na	1155	1348

UK	1984-1986	1987-1989	1990-1992
Electrical	162	1306	906
Chemical	82	1001	324
Financial	740**	3320	2204

Notes:

na   no percentages calculated due to negative figures.

*   1 observation only

**   2 observations only.

      Spanish data source: DGEI & TE: data available from 1988 onwards; converted from pesetas into ECU.

Source : Eurostat.

Table 6.6. FDI flows in the EC, percentages

Intra-EU inward FDI flows by sector / 3-year averages (country share of total EU)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	246	885	1629
Chemical	412	1894	931
Financial	1938	5395	8157

Germany	1984-1986	1987-1989	1990-1992
Electrical	4.47	na	na
Chemical	15.53	0.16	na
Financial	51.44*	18.54	16.92

France	1984-1986	1987-1989	1990-1992
Electrical	21.14	13.56	6.63
Chemical	23.79	3.01	32.22
Financial	18.94	26.71	29.34

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	na	na
Chemical	na	na	na
Financial	na	na	na

UK	1984-1986	1987-1989	1990-1992
Electrical	10.98	22.49	11.60
Chemical	6.31	30.73	4.73
Financial	10.78**	8.29	9.27

Extra-EU inward FDI flows by sector / 3-year averages (country share of total EU)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	476	1547	913
Chemical	101	1290	-54
Financial	1816	5884	8614

Germany	1984-1986	1987-1989	1990-1992
Electrical	6.51	-41.00	-296.00
Chemical	-11.97	-49.00	-171.00
Financial	41.19*	19.26	12.32

France	1984-1986	1987-1989	1990-1992
Electrical	30.46	6.53	41.84
Chemical	55.45	11.55	-250.00
Financial	13.27	5.64	12.50

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	na	na
Chemical	na	na	na
Financial	na	na	na

UK	1984-1986	1987-1989	1990-1992
Electrical	28.36	71.56	78.53
Chemical	55.45	32.48	-518.52
Financial	29.24**	48.83	16.81

Total EU inward FDI flows by sector / 3-year averages (country share of total EU)

EC-total	1984-1986	1987-1989	1990-1992
Electrical	722	2432	2542
Chemical	513	3184	877
Financial	3754	11279	16771

Germany	1984-1986	1987-1989	1990-1992
Electrical	10.98	na	na
Chemical	51307.00	-48.84	na
Financial	46.48*	37.79	29.24

France	1984-1986	1987-1989	1990-1992
Electrical	27.29	9.09	19.28
Chemical	30.02	6.47	49.60
Financial	16.20	15.72	20.69

Spain	1984-1986	1987-1989	1990-1992
Electrical	na	10.53**	20.46
Chemical	na	21.48**	130.44
Financial	na	10.24**	8.04

UK	1984-1986	1987-1989	1990-1992
Electrical	22.44	53.70	35.64
Chemical	15.98	31.44	36.94
Financial	19.71**	29.44	13.14

Notes:

na   no percentages calculated due to negative figures.
*   1 observation only.
**   2 observations only.
   Spanish data source: DGEI & TE: data available from 1988 onwards; converted from pesetas into ECU.

Source : Eurostat.

Table 6.7. M&A activity in the automotive assembly sector

Values in UK£ million and number of transactions for period 1989-94

Target nationality	1989 Value	No.	1990 Value	No.	1991 Value	No.	1992 Value	No.	1993 Value	No.	1994 Value	No.	Total Value	No.
Domestic														
Belgium	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1
Denmark	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1
France	2.59	4	0.00	1	0.00	3	0.00	3	0.00	1	76.86	3	79.45	15
Germany	0.00	0	0.00	1	83.28	6	0.00	0	3.14	7	62.93	6	149.35	20
Italy	15.06	1	0.00	0	0.00	0	6.15	2	33.44	2	0.00	0	54.65	5
Netherlands	0.00	1	0.00	0	0.00	0	0.00	2	0.00	2	0.00	1	0.00	6
United Kingdom	59.15	6	163.50	2	1.00	4	4.55	5	54.24	5	13.65	2	296.09	24
Total	76.80	12	163.50	5	84.28	14	10.70	12	90.83	17	153.44	12	579.54	72
EC cross border														
Belgium	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	1
France	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1
Germany	0.00	0	0.00	1	0.00	1	0.00	1	0.00	1	0.00	0	0.00	4
Spain	0.00	0	115.28	2	0.00	0	0.00	0	135.80	1	0.00	0	251.08	3
United Kingdom	0.00	0	0.00	1	0.00	1	0.00	1	30.00	1	1700.00	2	1730.00	6
Total	0.00	1	115.28	4	0.00	3	0.00	2	165.80	3	1700.00	2	1981.08	15
Extra-EC investor														
France	0.00	0	606.19	1	0.00	1			0.00	1	0.00	0	606.19	3
Germany	0.00	0	0.00	0	0.00	0			0.00	0	0.00	2	0.00	2
Italy	0.00	0	0.00	0	0.00	0			27.03	2	76.78	2	103.81	4
Netherlands	0.00	0	0.00	0	71.80	2			0.00	0	0.00	0	71.80	2
Spain	0.00	0	0.00	0	0.00	0			45.18	1	0.00	0	45.18	1
United Kingdom	1560.39	2	0.00	0	0.00	0			0.00	0	50.00	1	1610.39	3
Total	1560.39	2	606.19	1	71.80	3			72.20	4	126.78	5	2437.36	15

Source: AMDATA

Table 6.8. M&A activity in the automotive component sector

Values in UK£ million and number of transactions for period 1989-94

Target nationality	1989 Value	1989 No.	1990 Value	1990 No.	1991 Value	1991 No.	1992 Value	1992 No.	1993 Value	1993 No.	1994 Value	1994 No.	TOTAL Value	TOTAL No.
Domestic														
Ireland	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	4.92	1	4.92	1
France	29.36	3	46.16	11	5.17	4	0.00	3	0.00	4	0.00	6	80.70	31
Germany	170.21	7	0.00	6	103.27	24	55.84	12	0.00	5	27.87	9	357.20	63
Italy	3.34	5	0.00	3	0.00	4	0.00	1	85.89	5	15.96	3	105.19	21
Netherlands	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	2
Spain	0.00	1	0.00	1	0.00	2	0.00	1	0.00	0	0.00	3	0.00	8
United Kingdom	25.89	13	29.48	9	0.40	2	3.36	5	59.25	6	90.00	15	208.37	50
Total	228.80	30	75.64	30	108.84	36	59.20	22	145.14	20	138.76	38	756.38	176
EC cross border														
Belgium	0.00	0	0.00	0	0.00	0	0.00	1	0.00	1	0.00	0	0.00	2
France	2.59	7	27.70	5	4.60	2	0.00	3	2.35	5	3.84	3	41.08	25
Germany	0.82	4	68.03	4	5.35	5	103.52	4	0.00	1	0.00	3	177.71	21
Italy	17.28	5	0.00	4	0.00	1	30.03	2	14.06	2	0.00	3	61.37	17
Netherlands	0.00	0	0.00	0	0.00	1	0.00	1	0.00	0	0.00	0	0.00	2
Portugal	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1
Spain	0.00	3	0.00	4	8.43	1	0.00	0	0.00	1	2.46	3	10.89	12
United Kingdom	0.00	2	18.10	3	75.82	7	0.00	1	6.75	2	0.00	1	100.67	16
Total	20.69	21	113.83	21	94.20	17	133.55	12	23.16	12	6.30	13	391.72	96
Extra-EC investor														
Belgium	0.00	0	14.05	1	0.00	0	0.00	0	0.00	0	0.00	0	14.05	1
Denmark	0.00	0	0.00	0	1.77	1	0.00	0	0.00	0	0.00	0	1.77	1
France	0.00	1	51.23	4	0.00	1	85.73	1	15.60	2	0.00	2	152.57	11
Germany	0.00	1	88.02	6	0.00	1	0.00	3	88.23	9	105.73	7	281.98	27
Italy	0.00	2	35.46	2	0.00	1	0.00	0	0.00	1	134.10	6	169.55	12
Netherlands	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	10.53	1	10.53	2
Spain	25.40	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	25.40	2
United Kingdom	126.40	6	66.21	3	42.45	3	0.00	0	0.00	0	19.00	5	254.06	17
Total	151.80	11	254.97	16	44.22	8	85.73	5	103.84	12	269.35	21	909.91	73

Table 6.9. M&A activity in the pharmaceutical sector

Values in UK£ million and number of transactions for period 1989-94

Target nationality	1989 Value	1989 No.	1990 Value	1990 No.	1991 Value	1991 No.	1992 Value	1992 No.	1993 Value	1993 No.	1994 Value	1994 No.	Total Value	Total No.
Domestic														
Belgium	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	2
Denmark	0.00	1	0.00	0	0.00	0	0.00	2	0.00	1	0.00	0	0.00	4
Ireland	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1
France	2.44	6	360.82	5	450.09	6	36.20	9	0.00	3	729.17	7	1578.72	36
Germany	0.00	2	0.00	3	0.00	12	0.00	6	0.00	4	0.00	2	0.00	29
Italy	285.08	3	77.60	2	0.69	1	0.00	1	0.00	0	23.59	2	386.96	9
Netherlands	0.00	0	0.00	3	0.00	0	0.00	2	0.00	0	0.00	1	0.00	6
Spain	0.00	0	0.00	1	13.19	1	0.00	0	0.00	0	0.00	0	13.19	2
United Kingdom	99.78	3	63.50	7	8.40	2	123.82	8	4.75	5	40.12	9	340.37	34
Total	387.30	18	501.93	21	472.37	22	160.02	28	4.75	13	792.88	21	2319.25	123
EC cross border														
Belgium	3.73	1	0.00	1	0.00	0	0.00	2	0.00	2	0.00	0	3.73	6
Denmark	0.00	0	0.00	1	0.00	1	0.00	1	0.00	0	0.00	2	0.00	5
France	24.30	2	3.52	3	308.07	5	0.00	2	0.00	2	481.16	3	817.04	17
Germany	0.00	2	1.98	2	0.00	0	3.40	4	0.00	2	0.00	3	5.38	13
Italy	53.00	4	0.00	4	0.00	1	0.00	1	14.20	6	0.00	2	67.20	18
Netherlands	0.00	1	0.00	2	0.00	2	0.00	0	0.00	0	0.00	0	0.00	5
Portugal	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1
Spain	0.00	2	3.24	3	0.00	0	0.00	0	10.51	3	0.00	2	13.75	10
United Kingdom	10.39	3	0.00	0	11.40	1	0.00	1	18.00	3	840.00	1	879.79	9
Total	91.42	15	8.74	17	319.47	10	3.40	11	42.71	18	1321.16	13	1786.91	84
Extra-EC investor														
Belgium	60.09	1	0.00	1	0.00	0	0.00	0	0.00	1	0.00	1	60.09	4
Denmark	0.00	0	57.64	2	0.00	0	0.00	0	0.00	1	0.00	0	57.64	3
France	0.00	3	2.02	4	66.52	3	14.51	3	132.53	2	216.28	7	431.86	22
Germany	0.00	4	78.01	5	0.00	4	22.30	9	6.29	1	66.29	6	172.89	29
Italy	0.00	1	0.00	1	82.22	3	81.92	4	2.98	6	0.00	2	167.12	17
Netherlands	0.00	0	59.88	1	0.00	0	61.80	1	0.00	0	0.00	0	121.68	2
Spain	63.18	4	0.00	1	1.65	2	17.34	4	0.00	0	0.00	0	82.17	11
United Kingdom	4526.40	3	122.03	2	0.00	2	141.76	6	0.00	0	963.34	4	5753.53	17
Total	4649.67	16	319.58	16	150.38	14	339.64	27	141.80	11	1245.91	20	6846.98	105

Table 6.10. M&A activity in the financial services sector

Value in UK£ million and number of transactions for the period 1989-94

Target nationality	1989 Value	1989 No.	1990 Value	1990 No.	1991 Value	1991 No.	1992 Value	1992 No.	1993 Value	1993 No.	1994 Value	1994 No.	Total Value	Total No.
Domestic														
Belgium	1.69	16	0.00	3	150.08	15	0.63	18	2.48	9	287.58	14	442.46	75
Denmark	27.99	7	370.69	11	83.54	13	325.13	21	2.98	9	227.82	19	1038.14	80
Ireland	0.00	1	4.43	2	50.04	3	0.00	3	1.30	3	281.01	8	336.78	20
France	6935.67	59	1136.44	88	2153.45	65	1614.86	47	5617.24	71	2268.88	34	19726.54	364
Germany	192.85	29	0.00	19	150.17	42	1573.32	40	873.47	30	2049.21	34	4839.02	194
Greece	0.00	0	9.52	1	0.00	0	0.00	0	0.00	2	0.00	1	9.52	4
Italy	3177.75	77	819.07	63	4504.48	62	854.64	63	2456.08	55	4412.23	87	16224.25	407
Netherlands	0.00	24	5045.67	35	36.60	18	93.85	29	533.38	23	45.21	24	5754.70	153
Portugal	0.00	0	0.00	1	143.43	1	127.02	3	113.65	1	837.21	3	1221.30	9
Spain	302.41	6	53.06	9	227.67	16	254.96	21	452.60	16	1515.17	10	2805.87	78
United Kingdom	4356.93	89	2135.35	89	1025.16	69	4233.81	56	1433.57	65	4972.58	86	18157.40	454
Total	14995.29	308	9574.24	321	8524.61	304	9078.22	301	11486.74	284	16896.89	320	70555.99	1838
EC cross border														
Belgium	20.72	11	265.27	13	217.47	8	294.37	8	86.90	11	329.98	8	1214.71	59
Denmark	239.13	2	2.65	1	0.00	1	0.00	4	136.11	3	0.00	0	377.89	11
Ireland	73.84	2	208.48	4	25.12	3	0.00	0	0.00	1	191.51	8	498.94	18
France	937.22	16	642.86	16	271.28	14	121.09	9	164.27	8	1561.51	7	3698.23	70
Germany	950.12	13	0.00	5	152.13	10	960.97	5	128.77	2	104.81	6	2296.80	41
Greece	1.40	2	0.00	1	0.00	1	0.00	0	0.00	1	0.00	0	1.40	5
Italy	508.36	12	326.45	12	47.75	9	110.65	12	355.97	6	553.14	14	1902.33	65
Luxembourg	13.91	3	0.00	3	182.21	8	0.00	4	112.74	4	227.25	6	536.12	28
Netherlands	20.54	6	1369.85	8	0.00	4	235.00	3	1795.40	5	0.00	4	3420.79	30
Portugal	0.00	0	20.45	5	7.72	1	103.32	3	101.33	3	0.00	1	232.82	13
Spain	165.29	10	675.48	17	1138.42	21	72.44	14	397.44	11	46.00	1	2495.06	74
United Kingdom	1586.46	14	445.00	11	279.98	14	43.25	10	329.82	10	345.00	6	3029.51	65
Total	4517.00	91	3956.50	96	2322.08	94	1941.10	72	3608.74	65	3359.20	61	19704.61	479
Extra-EC investor														
Belgium	0.00	0	0.74	1	0.00	3	78.33	1	682.07	6	0.00	3	761.14	14
Denmark	83.36	2	26.87	3	20.44	1	0.00	0	3.73	3	0.00	2	134.39	11
Ireland	0.00	0	0.00	0	0.00	0	20.60	2	25.70	1	99.11	1	145.41	4
France	4.78	8	0.00	4	104.57	9	173.85	9	423.11	2	0.00	2	706.31	34
Germany	0.00	6	0.00	3	41.97	6	0.00	3	16.13	3	842.50	7	900.61	28
Greece	0.00	0	0.00	0	0.00	0	0.00	0	20.71	1	0.00	0	20.71	1
Italy	86.35	8	36.08	6	20.44	4	175.69	3	0.00	2	367.29	7	685.85	30
Luxembourg	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	17.25	3	17.25	4
Netherlands	2.75	1	0.00	1	185.38	5	0.00	5	0.00	7	0.00	4	188.13	23
Portugal	0.00	0	0.00	0	13.24	1	214.86	2	0.00	0	0.00	0	228.10	4
Spain	0.00	0	143.62	5	51.28	3	165.66	7	142.63	4	161.79	7	664.98	26
United Kingdom	1751.65	18	1500.89	18	523.59	13	422.52	19	479.62	19	1233.35	17	5911.63	104
Total	1928.89	44	1708.19	42	960.91	45	1251.51	51	1793.71	48	2721.30	53	10364.50	283
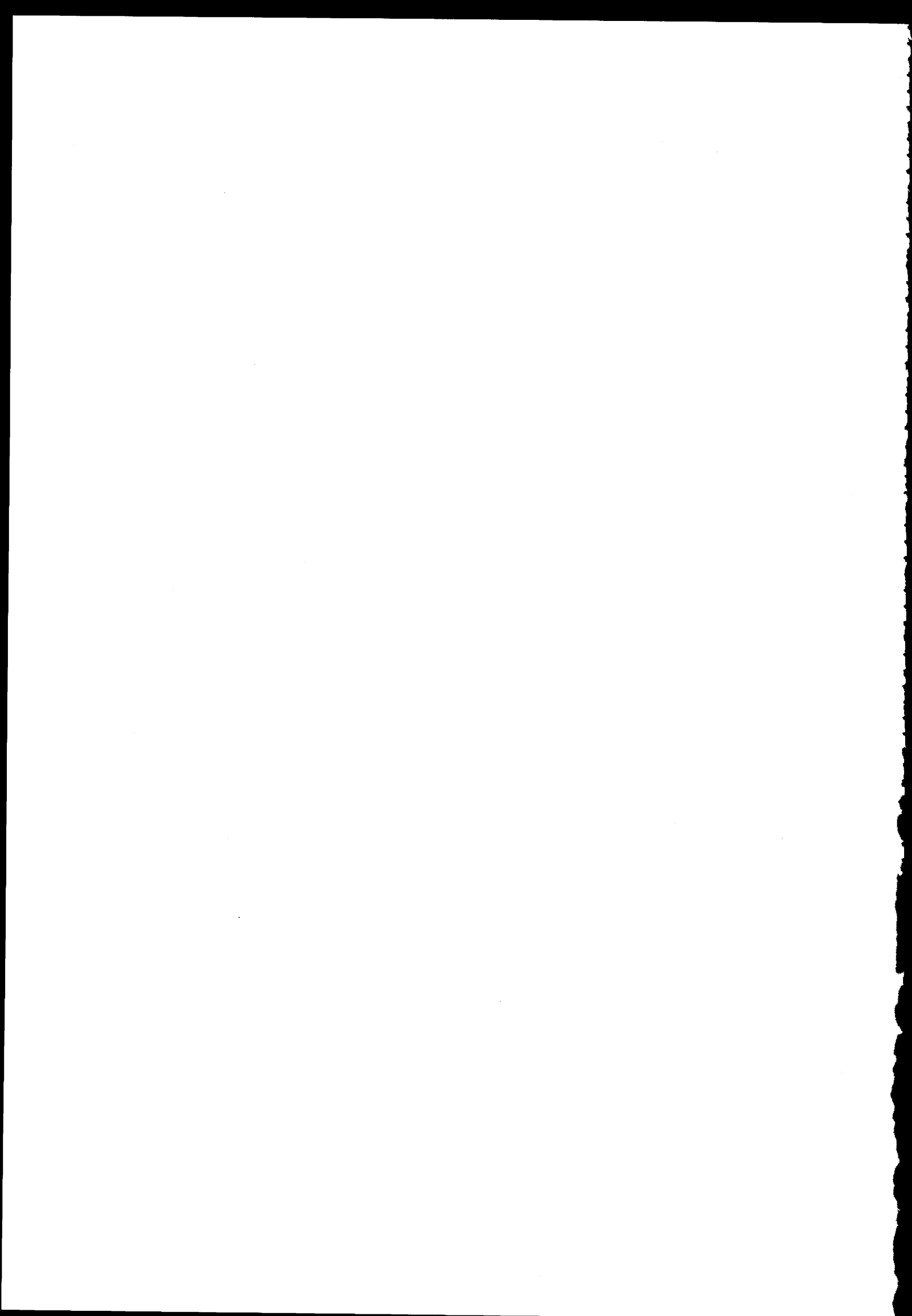
7. Sectoral distribution and FDI

7.1. Introduction

It was always expected that single market measures, such as those to open public procurement and harmonize technical standards, would have differential effects both on EU Member States and on industrial sectors (Buigues et al., 1990). Our attention now shifts to the latter and in this chapter we will seek to explore how and to what extent such differential impacts have occurred.

Our approach also shifts in two other important directions:

(a)   we will switch our perspective to that of the home economy, i.e. the Member State whose firms are making the investments,

(b)   we will be using econometric techniques that will complement and build upon our qualitative analysis of the data.

We have chosen to focus on the investment decisions made by firms from the UK and Germany, the EU's two biggest outward investors, who together account for around 55% of outward EU FDI. Moreover, both countries provide good time series data on their outward stock in roughly comparable sectoral breakdowns.

The econometric methodologies used and the results of the regressions are set out in detail in Appendix B. Inferences drawn on sectoral issues and conclusions specifically relevant to this chapter are set out below.

7.2. Methodology

It is not appropriate simply to test for a change in the level of investment after 1986 by including separate dummy variables for each individual sector, with those dummies taking a value of unity from 1987. This is because the size and significance of these terms will reflect all developments within each sector after 1986 that are otherwise unexplained. Structural changes in the pattern of investment could just as easily arise from the effects of technological change, the introduction of new products or the opening up of Central and Eastern Europe, as from the impact of the SMP. Whilst it is important to test for structural change, we can only use the co-efficients on the separate sector dummies to draw conclusions about the impact of the programme if we have some idea about the relative sensitivity of particular sectors in the first place.

Estimates of the level of non-tariff barriers in particular sectors have already been used in studies of international trade and European integration by Neven and Röller (1991) and Sapir (1995). These studies use an ordinal variable (ranging from one to three) constructed from European Commission estimates of the importance of non-tariff barriers at the industry level. These estimates are summarized in Buigues et al. (1990). Unfortunately, to the best of our knowledge, directly comparable estimates have not been made publicly available for service industries. However, Sapir (1993) provides an informal assessment of the likely impact of the SMP on a number of service sectors. Sectors where the programme is expected to have a high impact are given a ranking of three. Sectors with moderate and little impact are given rankings of two and one respectively.

An alternative strategy is to devise an indicator based on an approach that is readily comparable across both industrial and service sectors. One possibility is to estimate the extent of industrial restructuring using data on cross-border M&As within the European Community. For each sector considered we calculated the growth rate of mergers over the period 1988–91 as compared to the period 1984–87, using data drawn from the *Annual Report on Competition Policy* of the European Commission. Those sectors whose growth rate was above the average growth rate of all sectors were given a ranking of three, sectors whose growth rates were at or just below the average were assigned a ranking of two, and the remaining sectors were given a ranking of one.

One potential objection to the use of M&A data is that it comes close to using data on direct investment to devise an indicator with which to 'explain' direct investment. Whilst it is clear that M&As can sometimes be an important means of undertaking foreign investment, they will not be reflected in the direct investment data unless they are financed in the home country of the acquiring firm. Moreover, at the econometric level, it should be emphasized that the mergers data relate to developments within the whole EU; there is no reason why any indicator based on these data should be of use in explaining investment by either UK firms or German firms, even though they are important individual investors. The indicator is only being used in the context of a wider model, which already includes measures such as output which might account for the reported growth in FDI during the 1980s.

Table 7.1.   Estimates of the impact of the single market by sector

Sectors	Single market sensitivity	
	M&A data	Commission estimates
United Kingdom		
Chemicals	2	2
Mechanical engineering	1	1
Electrical	3	3
Food, drink and tobacco	3	1
Other manufacturing	2	2
Distribution	2	2
Financial and other services	3	3
Germany		
Chemicals	2	2
Machinery	1	1
Electrical	3	3
Transport equipment	3	2
Other manufacturing	3	1
Distribution	2	2
Financial and other services	3	3

Source: Own calculations based on data from the European Commission's *Annual Report on Competition Policy*, various issues, and Buigues et al. (1990).

The two single market proxies are compared in Table 7.1.[51] It turns out that the two alternative measures are broadly similar to one another, with financial services and electrical equipment being shown as particularly sensitive sectors. The two main differences arise for food, drink and

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[51] Note the relatively minor differences in the sector composition for the two countries. In manufacturing, food, drink and tobacco can be separately identified for the UK, but not for Germany, where it is included in the 'other manufacturing' group. See Appendix B for a more detailed account.

tobacco and the 'other manufacturing' sector in Germany. In both cases there was a marked increase in cross-border M&As after 1986, although the Commission estimates suggest that the single market is expected to have had little impact on these sectors. Cantwell (1992a) argues that considerable product differentiation remains in some sectors of the food industry, and also in products such as professional and scientific instruments (included in 'other manufacturing'). In such cases national markets may be seen as distinct, with market entry achieved by direct investment. There are other sectors, notably chemicals, with an intermediate ranking in spite of a high number of cross-border mergers since 1986. However, these sectors also had a relatively high number of mergers prior to 1986, implying that the recently observed restructuring is part of a longer term process of rationalization (Thomsen and Woolcock, 1993).

7.3. Empirical testing

The econometric work in this report uses the single market indicator based on the pattern of M&As. While this offers a consistent estimate for each sector considered, it should be recognized that this measure is essentially arbitrary, although this criticism could equally be made of the alternative measure as well. However, we have carried out a test of whether the available evidence is consistent with the Commission rankings as well as with our own. Further work might usefully seek to investigate whether alternative estimates could be obtained from a detailed analysis of industrial structure in the US and Europe, possibly drawing on information on either scale economies or concentration within sectors prior to the start of the SMP.

It is clear from the figures in Table 7.2 that the overall rate of growth in both total manufacturing and total service sector investment holdings by UK and German companies since 1981 has been remarkably similar, once allowance is made for the impact of currency movements. This is done by conversion into dollars, to allow for the significant fluctuations that have occurred during the period under review. There are, however, some important differences in the overall sectoral pattern of investments. This is particularly true within the services sector, with German investment in financial services helping to raise the overall proportion of investment within the EU, while UK investment in financial services has helped to hold up the proportion of investment in the US. In contrast, both countries have raised the share of their investments in chemicals and distribution within the EU. The size of German financial investments in Europe is partly distorted by the inclusion of Luxembourg, with regulatory factors such as withholding taxes having led to the growth of 'offshore' investments there (Campayne, 1992).

7.4. The sectoral distribution of UK outward FDI stock

The UK figures show that there have been some changes of interest in the geographical split by sector. Investment holdings in the distribution, chemicals and food, drink and tobacco sectors in Europe exceeded those in the US by 1992. A similar switch is apparent in the figures for German investment in the chemicals and 'other manufacturing' sectors. This is suggestive evidence in favour of the expectation that certain sectors, not previously FDI-intensive, have experienced higher growth in intra-EU FDI. This point is explored econometrically below with respect to outward investment from the UK.

Table 7.2.   The sectoral composition of UK and German FDI

(US$ billion)

Sectors	Value					
	1981		1987		1992	
	EU[1]	US	EU	US	EU	US
United Kingdom						
Chemicals	1.79	2.94	3.44	5.66	7.68	5.96
Mechanical engineering	0.41	0.69	0.45	1.19	0.81	1.49
Electrical	0.45	0.87	1.44	2.68	2.57	3.82
Food, drink and tobacco	2.17	3.12	3.99	4.09	6.25	5.65
Other manufacturing[2]	1.10	1.18	2.65	5.43	6.05	6.14
Distribution	1.77	1.75	5.41	5.03	10.83	3.46
Financial and other services	2.26	2.26	8.81	15.44	12.92	29.81
[Total]	[9.95]	[12.81]	[26.19]	[39.52]	[47.11]	[56.33]
Germany						
Chemicals	2.33	3.30	5.63	6.83	9.04	9.19
Machinery	0.49	0.60	1.04	1.18	2.26	1.77
Electrical	0.89	0.83	2.21	2.38	4.46	2.27
Transport equipment	0.77	0.34	1.83	1.42	3.84	1.40
Other manufacturing[3]	1.43	1.53	3.56	2.07	6.78	2.90
Distribution	3.95	2.05	9.79	4.23	16.47	6.43
Financial and other services	3.54	1.91	11.70	5.76	30.31	15.47
[Total]	[13.40]	[10.56]	[35.76]	[23.87]	[73.16]	[39.43]

[1] German figures for investment in eight European countries.
[2] This excludes transport equipment, paper, basic metals and metal products.
[3] This includes all other manufacturing industries not separately identified.
Source: HMSO (1995) and Deutsche Bundesbank.

The results of the regressions set out in Appendix B reveal that, within manufacturing, the effects of the SM on FDI for the electrical goods and chemical sectors are much greater than for either mechanical engineering or for food, drink and tobacco. Again, it is of interest to note that there is little change in either the size or significance of the remaining co-efficients within the equation. The results therefore provide little indication that the single market has led UK companies to reduce outward investment in order to fully exploit economies of scale from domestic production.

Using the methodology set out in Appendix B, we can calculate the monetary value of this 'SM effect' for each industrial and service sector. This is done in Table 7.3, which shows the total across all industries to be around US$ 15 billion at 1990 prices. Financial services alone account for almost one-third of this amount.

In a subsequent equation (1.5), two separate single market indicators were introduced, one for the industrial sectors, denoted SMIND, and one for the service sectors, denoted SMSER. Both were set to zero for the US. Both variables were significant, indicating that the single market has affected UK investment in both these broad sectors. However, the co-efficient on the services measure is nearly twice as big as that on the industry measure, and attempts at imposing equal co-efficients are rejected by the data (Chi-Squared(1)=8.39). This provides evidence in favour of the widely held assumption that the SMP has had a significantly greater impact on the service sector.

Table 7.3.   Impact of the single market on UK FDI in the EU

Sector	1992 stock (US$ billion, 1990)	SM effect (US$ billion, 1990)
Chemicals	8.01	2.12
Mechanical engineering	0.83	0.12
Electrical	2.69	0.99
Food, drink and tobacco	6.36	2.35
Other manufacturing	6.15	1.63
Distribution	11.09	2.94
Financial and other services	13.20	4.88
Total	48.33	15.03

Source: EAG calculations (see Appendix B for detailed methodology).

7.5.   The sectoral distribution of German outward FDI stock

The results of a similar econometric analysis of the sectoral composition of outward FDI for German firms obtain negative co-efficients on chemicals and mechanical engineering, implying that direct investment in these sectors since 1987 has actually been lower than would otherwise have been expected, albeit not significantly so. One possible explanation for this finding is that German companies in these sectors have been able to exploit economies of scale from domestic production as a result of the reduction in barriers to market entry elsewhere. The dummies for the other five sectors all have positive co-efficients, although foreign investment only appears to have been raised significantly in the transport equipment and financial services sectors.

As with the UK, two separate single market dummies were introduced for EU Member States, one for the industrial sectors, denoted SMIND, and one for the service sectors, denoted SMSER (equation 2.5 in Appendix B). Both were set to zero for Austria and the US. The respective co-efficients are as might be expected given the results in equation 2.3, with a much larger co-efficient being obtained for services than for the industrial sectors. As with the corresponding regression for the UK, this provides support for the proposition that the rate of growth of investment within the service sector since 1987 has been greater than within the industrial sector because of the single market. An attempt at imposing equal co-efficients was rejected by the data (Chi-Squared(1)=6.36).

Using the same approach adopted for the UK, we can make estimates of the impact of the single market on German outward investment for each of the sectors identified. The same qualifications apply, and the results are presented in Table 7.4. As of 1992, the SMP is estimated to have raised the constant price stock of German FDI in the EU by some US$ 5 billion, equivalent to 6.5% of the aggregate stock level. Although of a smaller magnitude, the sector results are similar to those for the UK in that they show the largest gains arising in financial services. However, there is little overall gain in distribution, again reflecting the negative effect we have obtained for France. Within manufacturing, the largest gains are for electronics and 'other' manufacturing, with small drops for chemicals and mechanical engineering. In proportionate terms the SMP has had a particularly marked effect in the electrical sector, accounting for some 21% of the outstanding stock of German direct investment in the EU.

Table 7.4.   Impact of the single market on the composition of German FDI in the EU

Sector	1992 stock (US$ billion, 1990)	SM effect (US$ billion, 1990)
Chemicals	9.5	-0.4
Mechanical engineering	2.4	-0.5
Electrical	4.8	1.0
Food, drink and tobacco	4.0	0.4
Other manufacturing	7.1	0.9
Distribution	17.3	0.3
Financial and other services	31.3	3.3
Total	**76.4**	**5.0**

7.6. Conclusions

It is clear that using this econometric methodology the SM has had a significantly differential impact on the sectoral distribution of FDI. Services (and especially financial services) have indeed been the most affected, as would be expected given the high level of NTBs which the SM has sought to remove. This conclusion is contrary to the initial reading of Eurostat data (1995) which indicated that the service sector's share of intra-EU flows fell in the period 1987–89 to 65.46% from an earlier level of 74.62% in 1984–86 (see Appendix A). However, as has been noted, flow data is notoriously unreliable and cannot necessarily capture the other determinants of FDI which this econometric exercise has sought to address.

The relative importance of the SM to existing FDI stocks in each sector is summarized in Table 7.5 below.

Table 7.5.   Significance of SM on industrial sectors

Sectors	Significance of SM effect to total FDI stock (%)	Single market sensitivity	
		M&A data	Commission estimates
United Kingdom			
Chemicals	26.5	2	2
Mechanical engineering	14.5	1	1
Electrical	36.8	3	3
Food, drink and tobacco	36.9	3	1
Other manufacturing	26.5	2	2
Distribution	26.5	2	2
Financial and other services	36.9	3	3
Germany			
Chemicals	-4.2	2	2
Machinery	-20.8	1	1
Electrical	20.8	3	3
Transport equipment	10	3	2
Other manufacturing	12.7	3	1
Distribution	1.7	2	2
Financial and other services	10.5	3	3

Source: See Tables 7.1, 7.3 and 7.4.

8. The single market and levels of intra-EU FDI

8.1. Introduction

Given the well-documented surge in worldwide flows of direct investment, it is important to place developments in the EU in an appropriate global context if we are to discern a 'single market effect', and this is the focus of the next two chapters. Investments made and received by the EU virtually doubled between 1984 and 1988, and although inward investment grew slightly faster than outward investment, the EU remains a net exporter of capital.[52] The motivations behind this latter point cannot be explored in detail in this report, but they form an important background to the empirical investigation.

It is important also to retain a historical perspective on FDI into the EC. The EC's share of inward FDI into OECD countries increased from 38% to 45.8% between the early and late 1980s, but in the 1970s it had claimed more than 60% of such investments. Outward FDI of that period, however, was dominated by US MNEs. As European firms have reached maturity, it is of interest to explore whether they choose to exploit the opportunities of the globalizing economy in general, and the single market in particular, by intra- or extra-EC investment. This is the focus of the present chapter, after which, in Chapter 9, we explore the changing locational advantages of the EU from the perspective of extra-EU firms, particularly those based in the US and Japan.

An analysis of intra-EU FDI can draw either on separate data from countries who are important individual investors, or on aggregate intra-EU statistics. There are few consistent intra-EU statistics available for the 1970s, although Molle and Morsink (1991) have constructed a matrix of intra-EU flows for the period 1975–83. It is possible to obtain a sectoral and geographical breakdown of aggregate intra-EU flows of direct investment from 1984 onwards from Eurostat. These data show a sharp rise in the value of intra-EU flows of direct investment, from US$ 5.14 billion in 1984 (0.15% of EU GDP) to US$ 34.85 billion in 1992 (0.62% of GDP), the main rise in the GDP share having occurred after 1988. At face value, such figures appear to suggest that the SMP has generated a structural change in the pattern of intra-EU investment (Cantwell and Sanna Randaccio, 1992; Hoeller and Louppe, 1994).

By itself, a descriptive analysis of the changing pattern of intra EU flows of direct investment cannot provide a quantitative indication of the influence of the SMP. This requires an econometric model which yields an explicit estimate of the impact of declining non-tariff barriers on cross-border investment, and the extent to which there has been a significant structural change in the pattern of investment since the middle of the 1980s. We use the same model as in Chapter 7, and the detailed discussion of the econometric methodology can again be found in Appendix B.

Given the limitations on the quality of the aggregate EU sectoral data available, we have chosen to undertake two separate studies looking at the determinants of outward FDI from the UK and Germany. These are the two EU countries with the largest level of outward overseas investment, accounting for some 55% of the total stock of FDI by EU Member States as of 1989. Both countries publish detailed statistics on the sectoral and geographical split of their overseas

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[52] Eurostat (1992,1) Rapid Reports: Foreign Trade.

investments in regular publications, and data can be readily obtained from the late 1970s through to 1993.

While it is unlikely that either the UK or the German data are free from error, there is no *a priori* reason why the extent of any errors should vary across host countries, since investments are always measured on the basis adopted by a single country. However, there are some missing observations for investments in particular industries in specific locations, since some data have to be suppressed to maintain confidentiality. Hence it is not always possible to fully allocate total intra-EU investment to individual Member States. This is one of the problems faced by Eurostat, and is particularly true of the UK stock data. In this instance, we use the EU in aggregate as a destination, compared to the US, to explore the shift between intra-EU and extra-EU investment.

8.2. Empirical investigation of intra-EU flows

The geographical pattern of the recorded stocks of UK and German FDI is reported in Table 8.1. The figures for both countries indicate that the proportion of investments held within the EU has risen since 1984, with a decline in the share of investments held within developing countries (included in 'rest of the world') and, to a lesser extent, North America. The EU figures are for the 12 Member States as of 1994; they therefore include data for Greece, Spain and Portugal prior to their accession into the EC. The proportion of investments located in the EFTA countries has declined a little over time. However, there are some interesting contrasts between the two countries, with the rise in the EU share of total investment having largely occurred in the manufacturing sector for the UK, and the non-manufacturing sector for Germany.

Investments by both countries appear to have become more geographically concentrated in broad regional terms over time. The UK has historically held a large number of investments in Commonwealth member states; indeed the share of manufacturing investments in the four other developed countries (although investment in Japan is negligible) exceeded that in the EU until after 1984. The proportion of investments in these countries has since fallen sharply. There has also been a decline in the share of investments located in developing countries, although to a lesser extent in the service sectors, where there has been rising investment in South-East Asia and in tax shelters in the Caribbean.

The German data shows a similar overall picture, but with different patterns in manufacturing than in non-manufacturing. The proportion of manufacturing investments in developing countries, historically high because of investment in Latin America, has increased in recent years as a result of rising investment in Central Europe. The share of manufacturing investment located in the former centrally planned economies, rose from 0.7% in 1990 to 3.75% in 1993.

Table 8.1. **The geographical pattern of UK and German outward FDI (% of total stock)**

	1978	1981	1984	1987	1991	1992	1993
UK manufacturing							
EU	25.7	21.6	17.8	27.3	32.0	33.2	38.7
EFTA	2.2	1.6	2.6	1.8	1.7	1.9	1.0
North America	30.7	39.3	44.6	43.5	46.0	42.8	38.9
Other developed countries[1]	24.0	20.9	20.5	14.8	8.7	9.1	8.6
Rest of the world	17.5	16.5	14.4	12.6	11.5	13.1	12.8
UK all industries[2]							
EU	25.4	20.7	21.1	27.9	26.9	26.1	32.0
EFTA	5.1	2.1	3.4	3.2	3.0	3.0	2.7
North America	26.1	34.6	41.6	41.3	42.7	41.8	39.0
Other developed countries	23.1	20.4	15.4	11.1	10.3	10.0	9.9
Rest of the world	20.2	22.2	18.5	16.6	17.1	19.2	16.4
German manufacturing							
EU	32.2	29.9	28.8	34.5	41.6	39.7	35.5
EFTA	10.0	8.4	7.8	9.1	8.6	9.1	8.9
North America	28.3	32.8	36.4	33.4	29.3	28.5	30.6
Other developed countries	4.3	5.3	5.3	4.8	4.6	4.5	4.7
Rest of the world	25.2	23.6	21.7	18.2	15.9	18.2	20.3
Germany all industries							
EU	38.5	34.0	32.2	39.2	51.0	50.3	48.0
EFTA	12.2	10.1	8.8	10.4	9.5	9.0	9.0
North America	20.3	27.9	33.4	29.9	25.3	25.6	26.4
Other developed countries	3.6	4.4	4.1	4.3	3.9	3.8	4.3
Rest of the world	25.4	23.6	21.4	16.2	10.3	11.3	12.3

[1] South Africa, Australia, New Zealand and Japan.
[2] Excludes energy investments prior to 1984.
Source: HMSO (1995) and Deutsche Bundesbank.

It is important to recognize that the rise in the EU share can be partially accounted for by two factors that have little to do with the single market:

(a)   The reported geographical split can be affected by currency movements if recorded book values have to be translated into domestic currency equivalents. The 1984 numbers were obtained at a time when the dollar was unusually strong; this served to raise the sterling and DM value of dollar-denominated assets.

(b)   There has been a rise in the share of new investments located within the EU over time.

This second factor may also generate a vintage effect. As the stock data are at book values, more recent investments can be expected to be closer to their present market values than older ones. To the extent that such investments tend to be within Europe, this will serve to raise the proportion of total investment held within Europe. In spite of these factors, the stock data is used in the empirical work below. This reflects both the extent to which the theory of direct investment relates to stocks rather than flows, and our interest in estimating the cumulative impact of the SMP on direct investment.

The analysis in this report draws on two separate panel data sets for the UK and Germany. For the UK, we examined the evolution of investment in the EU as a whole and in the US, reflecting the absence of consistent data by sector for a number of EU locations. For Germany, we constructed a panel with eight separate locations, six within the EU, plus the US and Austria. The six EU locations were Belgium and Luxembourg, the UK, France, Italy, the Netherlands and Spain/Portugal. Investments in Denmark and Greece were excluded on grounds of size.

We have also excluded data on investment in Ireland. In part this reflects reported developments since 1990. The German data suggest that the stock of investment in Ireland grew rapidly from DM 6.6 billion in 1990 to DM 14.7 billion in 1992. However, the available sectoral figures (which are incomplete) only account for some DM 1.3 billion of the additional investments, with manufacturing investment only rising by some DM 0.3 billion. While it is obvious that important developments worthy of further study have occurred in recent years, any attempt to include such incomplete figures in the empirical exercise can be expected to generate considerable econometric difficulties. It is far from clear why such large services sector investment should have taken place over such a short period, particularly given the size of the local market.

Although our main focus in the report is intra-EU investments, we consider it essential to include Austria and the US as the comparator groups (subject to the availability of consistent data) in order to test the hypothesis for this chapter. The US has historically been the most important destination, as well as source, of FDI; and provides a means of picking up the underlying upward trend in FDI in the 1980s throughout the developed world. The inclusion of Austria allows us to distinguish between factors that affect European investment inside and outside the EU. We have not included any data on investment in EFTA in our UK panel, as reported investment there is negligible.

8.3.   The impact of the SM on the geographical distribution of UK FDI

It is possible to use the estimated relationships with the SM indicator to calculate the effect of the SMP on the stock of UK FDI in the European Union and the US. Such estimates should be regarded only as providing a lower bound of the overall single market impact, since it is quite possible that the programme will also have affected other variables, such as the growth of output

and (possibly) labour costs and research intensity. Such issues are beyond the scope of this study, although some estimates of the output effect can be expected to emerge from the wider programme of research into the impact of the SMP.

To calculate the FDI effect, we use the regressions of Chapter 7, which are set out in the appendix. For simplicity we use the estimates from equation 1.2, although there are obviously a number of other equations that the calculations could be based upon. The results suggest that the SMP may have raised the constant price stock of UK investment in the EU by some US$ 15 billion as of 1992. This represents around 31% of the aggregate stock level at that date.

The differential impact of the single market on investment within and outside the EU is compared by introducing a separate variable for the US, denoted SMUS. This has the same sectoral pattern as the EU measure denoted SM, and is set to zero for all EU sectors. The results indicate that while investment within the EU by UK firms has grown more rapidly than investment outside the EU as a result of the single market, it does not appear to have been at the expense of investment within the US. However, it is important to remember that this is an average effect; it does not mean that investment has not been diverted in particular sectors. The effect of introducing separate sector dummies for both the EU and the US was explored in Chapter 7. This showed that there was little evidence of any switching of investments from the US to the EC at the sector level, with the notable exception of investment in distribution, and some weak evidence for the chemicals sector.

The results from augmenting equation 1.2 with separate time dummies for the US provide clearer evidence in favour of investment diversion as a result of the SMP. These are reported in Appendix B. These show that the US dummies only have positive co-efficients from 1987–89 and are thereafter negative, although not significantly so. Taken together, there is some evidence that investment within the EU has risen over time, at the expense of investment within the US. This is suggestive of an impact from the single market, although it could also reflect other factors, such as the respective timing of the most recent cyclical downturns in the US and continental Europe.

The difference between the findings from the sector dummies and those from the time dummies is that the sector dummies are reporting an average effect for 1987–92. On balance, they indicate that investment by sector was higher than might have been expected in both the EU and the US over this period. However, the time dummies point to important differences in the timing of these investments, with investment rising consistently until 1992 within the EU, but only during the late 1980s in the US. This suggests that different processes are driving investment in the two regions, and they are therefore not necessarily in direct competition with each other.

8.4. The impact of the SM on the distribution of German FDI

The results of our empirical investigation into German FDI (see Chapter 7) indicated that the overall impact of the SMP on the level of outward investment from Germany had been considerably smaller than for the UK. As of 1992, the programme is estimated to have raised the constant price stock of German FDI by some US$ 5.0 billion, equivalent to 6.5% of the aggregate stock level.

As for the UK, we also compared the differential impact of the SM on investment within and outside the EU by introducing separate variables for Austria and the United States, denoted SMOE and SMUS respectively. These two variables have the same sector pattern as the EU

measure denoted SM, and are set to zero for all EU countries. The results are in marked contrast to those obtained for the UK, as they indicate that investment has, on average across all sectors, been lower than might otherwise have been expected in Austria and the US since 1987. This is consistent with the proposition that the SMP has diverted investment into the EU from other destinations. However, the respective negative co-efficients are not significantly different from zero, either individually or jointly (Chi-Squared(2)=2.59).

Synthesizing the sectoral co-efficients with the national dummies allows us to explore the differential significance of the SM variable across the various panel destination countries. The monetary values of these 'SM effects' are set out in Table 8.2. The results indicate that German investment appears to have risen much more rapidly since 1987 in both the UK and Italy than might have been expected. Investment in the Netherlands and Spain has also risen, although by a smaller amount. In contrast, investment in France and Belgium and Luxembourg has been lower than might have been expected, although in some cases, the implied co-efficients appear very close to zero. An attempt at imposing identical co-efficients on the country dummies in equation 3.1 was rejected by the data (Chi-Squared(5)=14.55), implying that there have been significantly different patterns of direct investment in European countries after 1987.

The findings for France and Spain are of particular interest, given what is known about recent developments within Europe. The negative effects obtained for France possibly reflect the extent to which investment had formerly been diverted into France as a result of relatively stringent non-tariff barriers to market entry. Equally, it might have been expected that the impact of the SMP on German investment in Spain and Portugal would have been more pronounced, given the extent to which the location of investment is influenced by relative labour costs. However, it is possible that some investment has been diverted away from these countries as a result of the opening up of new potential sites in former East Germany and Central Europe in the last few years (Martin and Gual, 1994).

Table 8.2.   Impact of the SM on the location of German FDI in the EU

Country	1992 stock (US$ billion, 1990)	SM effect (US$ billion, 1990)
Belgium and Luxembourg	21.9	-1.2
United Kingdom	12.2	4.3
France	13.7	-1.7
Italy	9.0	1.8
Netherlands	9.5	1.1
Spain and Portugal	10.1	0.7

Source: See Appendix B.

The primary beneficiary appears to have been the UK, where investment is some US$ 4.3 billion higher than otherwise, roughly one-third of the reported stock level. As might be expected, given the national co-efficients reported in Appendix B, Italy, the Netherlands and Spain and Portugal have also gained additional investment. In contrast, the estimates suggest that investment is lower than it might otherwise have been in Belgium and France. France shows the largest single

drop in inward investment, primarily due to the size of German investment in chemicals and distribution there. (Both sectors have a negative effect in the estimated co-efficients.)

Adding separate time dummies for investment in the US and Austria clarifies the extent to which the SM has served to divert German investment into the EU. For both countries all the time dummies attract a negative co-efficient, which implies that investment has been lower than might have been expected in every year. In many cases, however, the differences are insignificant; indeed, the reported test statistics indicate that it is not possible to reject the hypothesis that the co-efficients are jointly zero.

Moreover, there is an interesting contrast between the US and Austrian effects, in that the co-efficients on the US time dummies tend to become more negative over time, while the co-efficients on the Austrian time dummies have become less so. One possible explanation for the latter pattern is that less investment was diverted away from Austria as it became clearer that Austria would join the EU, and hence implement the single market legislation.
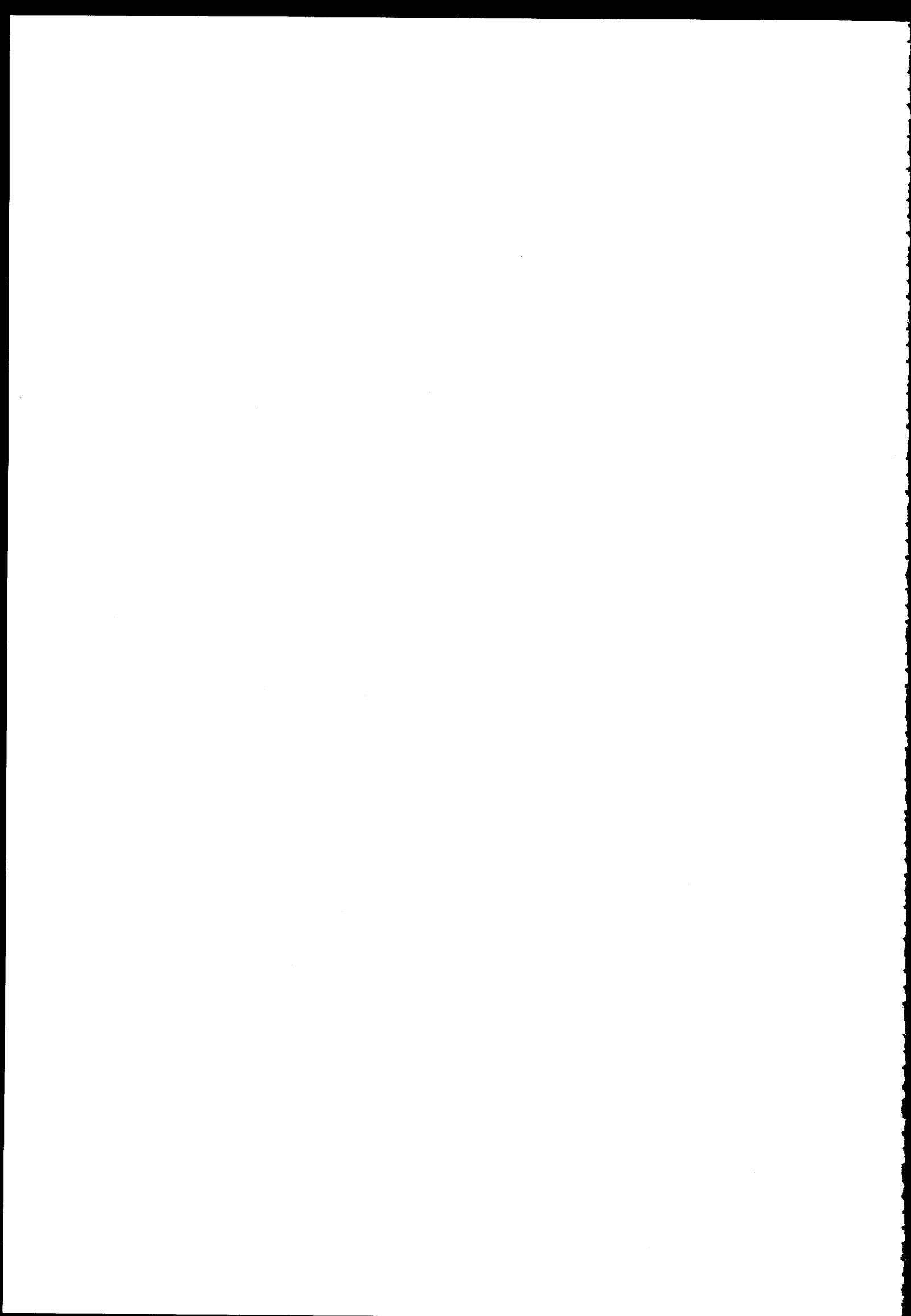
9. The single market and levels of extra-EU FDI

9.1. Introduction

The purpose of this chapter is to consider the impact of the SMP on the level, structure and distribution of FDI made by firms from the major non-European, Triad economies of Japan and the US in the EC. The significance of this chapter, as part of a comprehensive evaluation of the effects of the SM on flows of FDI, arises from a number of reasons.

(a)   The SMP cannot, at this narrative stage of our investigation, be taken in isolation from other major developments in the international economy, which we shall group for the time being under the heading 'globalization'. The corporate strategies of Japanese and US investors, as well as those from the EC, reflect these other variables and consequently need to be identified and explained before we can consider the counterfactual or *antimonde* situation.

(b)   It may be said that since Japanese and US MNEs are not tied to a home economy within the EU, they are able to take a more objective view of the SM; and thus analysis of where, how and why they have sought to exploit the available opportunities may be particularly instructive as to the true impact of the SMP.

(c)   Much of what appears to be intra-EU investment (from one Member State to another) in fact originates from the European affiliates of Japanese or US multinationals. It is difficult to estimate this amount precisely, although *Panorama* (European Commission, 1991) does provide data on the ultimate beneficial parent of inward investment in the UK. Therefore, it is only by understanding the global strategies of Triad corporations that we can identify the reasons for much of the intra-regional flow of FDI.

(d)   Various writers have claimed that the earlier Mark I integration undertaken by the Community disproportionately benefited non-European (primarily US) firms (such as Cantwell, 1992a). This was because their own particular competitive advantages and organizational structures were best adapted to operate transnationally across the continent, and they were better able to restructure their operations to account for lower tariff barriers between Member States.

Thus, some sort of comparative analysis may be an appropriate way to assess whether European firms are taking greater advantage of the new opportunities offered by Mark II integration (as compared to their American and Japanese competitors) to rationalize their operations across Europe, so as to compete more effectively in the global market.

One *ex ante* survey of Europe's 300 largest corporations by *Le Monde* (1988, cited in Rugman, 1991) suggested that European executives were confident of retaining the bulk of the spoils of the SMP for themselves. Only 9% of those managers surveyed thought US firms would gain, while 42% believed US companies would lose their competitive position. A similar spread of opinion was found regarding Japanese firms and other Asian MNEs.

Nevertheless, data assembled by the European Commission and cited in the press (The *Financial Times*, 27.9.1994) suggest that the US and Japan have continued to play a significant part in the EU economy, and that the SM has further stimulated their interest. Between 1986 and 1991 for example, US investment represented 25% of FDI into the EU. Japan was the next largest outside investor, with a 13% share.

It will be obvious that US and Japanese FDI into Europe cannot be taken as a whole, and we therefore seek to disaggregate, where appropriate, by country of origin, country of destination, industrial sector and mode of investment. We shall begin by exploring US and Japanese investment separately, before bringing them together in the concluding part of this section.

Finally, FDI needs to be considered as part of a spectrum of transnational corporate linkages, if it is to be properly understood. In the conclusion we will therefore explore what role non-equity-based relationships, such as strategic alliances, have played in the global economy, and how these elements have been integrated into corporate strategies to maximize the benefits of the SMP.

9.2. Japanese FDI in Europe

The confirmation in the autumn of 1994 that NEC, the largest Japanese manufacturer of semiconductors, would invest US$ 530 million in a European site for an advanced production facility in the face of stiff competition from the US has given encouragement to depressed regions across Europe, far beyond the chosen Scottish site (The *Financial Times*, 27.9.1994).

The decision suggests that the collapse of Japanese overseas FDI activity, which saw outflows fall from US$ 48 billion in 1990 to around US$ 12 billion in 1993 (UNCTAD, 1994), may finally be ending. Although the spectacular slump is primarily attributable to the bursting of the 'bubble economy' in Japan itself, it rather obscures what would otherwise be an impressive surge in European investment activity in the run-up to 1992. There seems little doubt that the SMP was a major incentive for this wave of activity, but to establish its true significance requires some discussion of the internationalization of Japanese companies as their domestic economy has matured, and how the EU fits into their global strategies.

9.2.1. Internationalization of Japanese companies

Compared to the US, Japan is a late arrival on the global direct investment scene. Outward FDI has traditionally been a response to, rather than a factor determining, Japanese economic development. From 1945 to the mid-1980s, Japan exported its products to hard currency markets in order to pay for a strategic restructuring of economic activity towards high-growth, high value-added sectors in which it was developing a comparative advantage (Ozawa, 1989a).

In the course of this upgrading, outward FDI served as an outlet for pressures that inevitably build up within the domestic economy (namely rising wages and labour shortages); an appreciating currency which weakens export competitiveness; the maturation of industries and technologies; and frictions with trading partners whose own goods, if let in freely, would disrupt the systemic growth of Japanese industry. Thus, historically, overseas investment has served as a tool of government policy geared towards domestic economic development (Ozawa, 1989b).

In the late 1960s and early 1970s, for example, outwards FDI was encouraged in light manufacturing, labour-intensive industries and was mostly undertaken by small- and medium-sized Japanese companies. Subsequently, it was directed at securing access to raw materials, upon which Japan is particularly dependent, to fuel the growth of heavy domestic industries. Towards the end of this period, the continuation of the upgrading process (and the failure of Japanese firms to attain sustainable ownership advantages in materials- and energy-intensive industries) demanded a shift up the value-added chain into higher knowledge- and technology-intensive activities (Dunning, 1993b).

Moving into the 1980s, Japanese MNE activity turned towards the developed Western host countries with whom they now felt able to compete. In terms of the OLI paradigm, because of the changing location 'L' advantages of Europe and North America and the much improved ownership 'O' advantages of Japanese companies, the latter showed an increased tendency in the late 1980s to exploit these advantages by foreign production.

Thus, 'globalization' in the case of Japanese firms has taken the form of:

(a)   industrial rationalization and restructuring in the home economy,
(b)   outward FDI geared towards maintaining or advancing markets for Japanese exports in developed countries,
(c)   the relocation of uncompetitive industrial activities to the developing economies.

It is against this historical backdrop that Japanese FDI in the EC must be assessed. Although the surge of outbound MNE activity in the mid- to late-1980s stirred considerable academic and political debate on both sides of the Atlantic, it is worth recalling that even at its peak FDI outflows from Japan accounted for barely 1.5% of domestic GDP (OECD, 1994b). Moreover as late as 1985 Japan was still exporting ten times as much to Europe and the US as its subsidiaries in those countries were actually producing (Dunning, 1993b).

Part of the motivation for recent outward Japanese investment undoubtedly lies with the strength of the Japanese currency. Since the beginning of 1985, the Yen has appreciated 135% against the Bank of England's weighted basket of 20 major currencies. This has had obvious negative implications for the relative price competitiveness of Japanese exports, and, conversely, makes overseas assets increasingly affordable. Over 60% of the Japanese affiliates in Europe who responded in the 1995 JETRO survey claim to have been affected by the rise of the Yen, with nearly one-quarter (24.1%) declaring there had been 'a great impact' on their business. More particularly, some 58% of companies said they had already (36.2%), or were considering (21.9%), increased procurement in the EC, while expanded local production was being considered by 35%, and price increases by 15.8%.

9.2.2. Means and motivation of Japanese investment in Europe

Given this international and domestic economic context, we can consider more clearly the how and why of recent Japanese investments into Europe, and assess the particular role of the SMP. To offer the counter-argument first, Thomsen and Nicolaides (1991) have asserted that the SMP has only affected the timing of Japanese investment in Europe, and not its long-run volume. They contend that the overall globalization strategy of Japanese firms, driven by profit-maximizing objectives, dictates an appropriate level of investment in the EU, which would have been achieved eventually irrespective of the SMP.

Dunning and Cantwell (1991) have also argued that the impact of 1992 will be on the form rather than the amount of foreign involvement in the EC. They believe that the non-1992 growth of the European economies, and the general push towards the internationalization of Japanese firms, will be the key variables affecting the expansion of Japanese participation in EC industry. Thus, FDI, in anticipation of the SM, is

> preparatory, and a once and for all event. Once 1992 arrives, it may be that the new Japanese investment which is a specific consequence of the internal market is much more limited than that which is now occurring. (Dunning and Cantwell, 1991, p. 81)

This view, however, is challenged by David Greenaway, who claims that the long-run level of inward investment in Europe is higher than it would otherwise be:

> partly because the 1992 programme represents a regime change offering additional locational advantages to the EC, (and) partly because the programme will enhance the longer run growth prospects of the European market. (Greenaway, 1992, p. 24)

Like the US FDI that preceded it, Japanese investment in the EC has been primarily market-seeking, with MNEs prompted to invest earlier, perhaps, than they might otherwise have done by tariffs, quotas, anti-dumping suits and 'voluntary' export agreements. In contrast, however, to their American predecessors, who undertook substantial investment in Europe in the 1950s and 1960s, Japanese investors have treated Europe as a single market from the start, and consequently pursued a regionally-integrated product and locational strategy (Dunning, 1993b).

An econometric study by Barrell and Pain (1993, revised 1994) on trade restraints and Japanese FDI flows deserves mention in this respect. Barrell and Pain used pooled, cross-sectional time series data to explain Japanese investment in individual EC countries and the US between 1980 and 1991. The equation expressed direct investment in a particular location as a function of market size, relative labour costs, Japanese exports to the country, and the cost of finance in Japan, as well as two dummy variables designed to test:

(a) whether the accession of Spain and Portugal to the EC in 1986 influenced their choice as a location;
(b) what was the impact of the Exchange Rate Mechanism.

The results of this study suggested that, controlling for market size and relative labour costs, FDI was significantly influenced by the level of export market penetration, trade protection measures, and the cost of finance in Japan. The accession of Spain and Portugal to the EC was found to have had a significant effect on Japanese investment flows into these countries, while the slowdown in Japanese FDI – especially in the US in the early 1990s – was largely attributed to the tightening of Japanese monetary policy.

Of particular interest to our econometric work is Barrell and Pain's discussion in their paper of the impact of the SMP. Noting that the single market may well change both the timing and desired level of inward investment into the EC, they continue:

> It is difficult to undertake an econometric test of this hypothesis since the influence of the 1992 programme is unlikely to have simply arisen from the number of directives implemented at any one time. (Barrell and Pain, 1993, pp.13–14)

However, they do subsequently augment their model with a dummy variable for the period 1988 to 1991, set to unity for EC members and zero for the US. The resulting co-efficients were both individually and jointly insignificant ($F(4,65)=0.60$), suggesting either that the SMP did not have a significant impact on Japanese investment in this period, or that its influence is already reflected in one of the other explanatory variables.

With respect to the modality of investment in Europe, Japanese MNEs have exhibited a clear preference for 'greenfield' sites, often, as we shall see, in depressed areas where grant assistance may be available. As at the beginning of 1994, the establishment of new subsidiaries accounted for over two-thirds (67%) of investments made, whereas European acquisitions were only made 21.1% of the time and capital participation made up only 11.4% of the total (JETRO, 1994).

The establishment of greenfield subsidiaries is often preferred by companies who are already well-established on the global market, and who possess substantial competitive advantages over their foreign rivals. However, since the mid-1980s, M&As have gained in popularity amongst Japanese MNEs, particularly amongst those sectors where Japanese ownership advantages were not so great as their European competitors, such as food processing or beverages (Kumar, 1994).

Table 9.1 shows the number of acquisitions made from 1985 to 1994, and the countries and industrial sectors in which they were particularly prominent as a form of corporate advance. Regrettably, only limited data are available before 1990.

Table 9.1.   Japanese acquisition activity[1] in Europe, 1985–93

Year	Number	Share (%)	Countries	Sectors
1985	8	n.a.		
1986	28	n.a.		
1987	35	n.a.		
1988	52	n.a.		
1989	103	n.a.		
1990	113	15.2	France, Spain	Machinery, materials
1991	89	18.0	France, Spain	Machinery, raw materials
1992	44	20.6	Spain	Machinery, raw materials
1993	24	18.6	Spain	Chemicals, machinery

[1] Showing number of acquisitions, share of overall investments by number, and countries/sectors in which they are particularly prominent.
Source: JETRO (1994) White Paper on FDI, cited in Kumar (1994) and JETRO, various surveys.

The means of investment may have an important bearing on the level of local content achieved by Japanese affiliates in the EU. Firms establishing greenfield investments often import a higher percentage of inputs until such time as their suppliers have relocated to the host country, or indigenous firms have satisfied their criteria on quality and delivery. In contrast, acquired companies tend to have an established network of suppliers. In the 1994 JETRO survey, nearly three-quarters of Japanese affiliates who responded claimed to have achieved more than 50% local content. The proportion varied between Italy (84% of firms), where M&As are heavily favoured, and Ireland (55% of firms), where greenfield investment is most common.

With respect to the motivation behind investment in the EC, access to European markets appears to be the dominant objective of Japanese FDI. According to figures from Shigeki Tejima's 1992 EX-IM annual review, the 'preservation or expansion of marketshare' was cited by 47% of investors as their major reason.

The latest available JETRO data (1995 first release) suggests that 90% of Japanese European affiliates exported their products, and that 94% of those targeted EU markets. Other destinations included EFTA (37.5%), the US (31.3%), Eastern Europe (26.1%) and Asia (24.6%). This

clearly suggest that Japanese affiliates in Europe are geared towards serving the regional markets, and the same survey suggests that they are exploiting post-1992 distribution opportunities, with 60% reporting that 'customs and other government procedures were simplified' as a result of the SMP.

Kume and Totsuke (1991) provide survey evidence which identifies fears of a 'Fortress Europe' – a widespread concern among EU trading partners in the late 1980s – as an important motivation behind Japanese FDI. This defensive market-seeking investment is closely related to rules of origin developed by the EC for the purpose of administering tariffs, quotas and anti-dumping actions (Greenaway, 1992), many of which were targeted at Japanese producers. EX-IM survey figures (Tejima, 1992) suggest that this motivated around 17% of Japanese investors in the EC.

Indeed, Hindley (1990) has argued that Article 13 (10) of the EU anti-dumping regulations is specifically drafted to encourage inward investment and manufacturing in place of imported products. However, this involves a fine balance: at some point the costs of meeting higher local content requirements through FDI exceed those of paying the duties or tariffs on the imports.

This seemingly technical discussion does have a real world significance. In 1990, when the French government set a maximum 3% market share for Japanese cars in its domestic market, the output of Nissan's factory in Sunderland in the UK became a hotly-debated issue. Were the cars British or Japanese? The dispute held up not only the import of such cars to the French market, but also threatened future Japanese investment in Europe – if the output from their EU affiliates was not to be classified as European, a major motivation behind such FDI was nullified (Hindley, 1990).

Among other motives of FDI, 'diversification of production overseas' was cited by 15% of respondents, 'the development of products adapted to the local market' scored 14%, and 'the promotion of specialization within the firm' 8% (Tejima, 1992).

Perhaps a less explicit rationale of Japanese FDI into the West is noted by Ozawa (1989a). Relative to their western competitors in the early 1980s, Japanese MNEs still lagged technologically in a number of sectors, and consequently FDI served as a channel to absorb Western technologies, which could then be reverse-engineered or licensed, enhancing the competitiveness of the Japanese parent. This again highlights the dynamic and symbiotic relationship between the locational advantages of the host economy, and the ownership advantages of the firm.

9.2.3. EC Member State perspectives on Japanese investment

Whereas FDI was once seen as a 'Trojan horse' by host governments who feared losing control over their national assets, foreign-owned MNEs are now more likely to be welcomed as partners in enhancing national competitiveness. This rethinking of governmental approach has been seen right across the world, from Latin America to Africa as well as Europe, and can be attributed to a variety of factors, including the ideological success of liberal economics and the collapse of sovereign borrowing as a source of capital in the wake of the debt crisis.

In Europe, this has led to much greater competition for inward investment from Japan, which in the past had been very narrowly concentrated in a few states, notably the UK. Investors can now bargain with governments for favourable terms, and are likely to evaluate countries not only by

the specific economic incentive package on offer, but also by the overall political environment as it regards overseas investment.

According to Kume and Totsuke (1991) 'Japanese companies seem to have set up relatively many factories in the assisted areas in the UK and in equivalent areas in France where investors are eligible for governmental aid'. The activities of regional bodies, such as the Welsh Development Agency, have been particularly successful in attracting investment, such as Sony's CTV facility in south Wales.

When the JETRO survey was first undertaken in January 1983, the UK hosted only 15 Japanese manufacturing facilities, which was barely 13% of the combined EU/EFTA total. Preliminary data from the 1995 JETRO survey suggest there are 205 plants currently operating in Britain, around 30% of the EU total. Cumulative flows into the UK 1951–93 are valued at around US$ 83.64 billion, with over four-fifths of those investments being made since 1987 (unpublished data from Japanese Ministry of Finance, cited in Kumar, 1994).

Since the Japanese do not have the historical–cultural ties that might be expected to draw US investment into the UK, we must look for other reasons to explain the one-third share of Japanese investment that the UK has consistently been able to attract (JETRO, 1994), despite the fact that its GDP is only 18% of the EU total (Eurostat).

Southern or 'peripheral' states did not, by and large, benefit significantly from the first wave of Japanese investment in the mid-1980s. By the end of that decade, Spain, Ireland, Italy, Greece and Portugal together accounted for only 8.6% of Japanese investment received by the EC. Smaller peripheral countries (Ireland, Greece and Portugal) took only 3% of all EC inflows in 1991 (Thomsen and Woolcock, 1991). Much of the increase in cross-border international production remains with the core countries of Europe – or indeed goes further offshore to other Asian economies, with China, for example, now the most popular destination for future Japanese investment (JETRO, 1993).

However, at a later stage in the evolution of Japanese investment in Europe, it may be that these very same peripheral EC states begin to take on more significance as potential locations for components suppliers to the final assembly plants in the major north European markets. As Ozawa notes (in Buergenmeier and Mucchielli, 1991, p. 151):

> There are large number of small firms in Portugal; more than 90% employ fewer than 50 workers and the wage rate is relatively low. This is a desirable environment on which Japanese car parts industry can capitalize in transplanting an appropriate level of factor intensity out of its multi-layered structure of manufacturing. Labour market conditions in Spain are equally suitable for manufacturing relatively labour-intensive types of parts and components.

However, Thomsen and Nicolaides (1991, p. 32) found more equivocal evidence in the case of Spain:

> More than one half of Japanese companies ... are located in Catalonia which does not offer financial or fiscal incentives to industrial investors, whereas up to 70% of the investment are available in depressed areas'

This supports Thomsen and Woolcock's (1993) conclusion (p. 65):

> Evidence from Japanese FDI in Europe suggests that firms may choose a depressed region in a fairly centrally-located country, but in a peripheral country, proximity to the centre of the EC may matter more.

Yamawaki's econometric analysis (Hughes, 1991) seeks to explain the distribution of Japanese FDI in Europe by both country and manufacturing sectors. Yamawaki's data source is Toyokeizai's 1989 'Directory of Japanese Multinationals' which he describes as comparable to the JETRO data.

The findings of the Yamawaki econometric test suggest that location strategies of Japanese firms broadly reflect the comparative advantage of each host country. Japanese firms tend to prefer those countries with lower wage levels, even though they tend to have a correspondingly lower productivity. This latter variable was not found to be significant in the Yamawaki model in determining levels of Japanese investment. In high-technology sectors, however, they tend to prefer countries with indigenous technological capabilities.

Interestingly, the size of the national market is of enduring importance to locational decisions, EC 92 notwithstanding, suggesting that much of the production of Japanese affiliates is sold locally or to nearby countries. The addition of an export variable indicated that such opportunities may have a marginally positive impact on locational decisions, although statistically it was not significant.

Yamawaki attributes this finding to the belief among Japanese executives that the SMP is an expectation rather than a reality. This underlines the importance of market 'clustering' – a phenomenon found also in Japanese locational decisions in US, where similar considerations of regional market size were found to be quite significant.[53]

9.2.4. Sectoral perspectives on Japanese FDI into the EC

Mitsui's Paris office opened in 1878 (its first in the Western world); a proof of the longstanding commercial presence in Europe of Japanese trading houses, and a reminder that FDI is not exclusive to the manufacturing sector. Indeed, Table 9.2 underlines this point, and highlights the particular pedigree of the Japanese finance and insurance industries, which account for 40% of all Japanese FDI: manufacturing accounts for only 22%.

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[53] See Woodward and Douglas (1992), 'Locational determinants of Japanese manufacturing start-ups in the US', *Southern Economic Journal*, 58, 3.

Table 9.2.   Accumulated Japanese FDI in Europe by sector (1991)

Sector	Share (%)
Finance and insurance	40
Commerce	12
Real estate	12
Services	6
Mining	2
Other non-manufacturing	5
Total non-manufacturing	**77**
Electrical machinery	7
Transport machinery	4
General machinery	3
Chemicals	2
Other manufacturing	6
Total manufacturing	**22**

Source: Encarnation and Mason (1994), from Ministry of Finance figures (1991).

Among manufacturing sectors, the automotive industry is one in which European sensitivities are particularly acute to the strength of Japanese competition. 'Voluntary export restraints' (VERs) were used to limit imports of Japanese-made vehicles to nominal shares of EC markets: 4% in France; 2% in Spain and Italy. Although these national quotas are now being gradually phased out, the EU has a special right of retention for its overall VER on Japanese cars at 17% of the EC market until the end of the century.

Often seen as a specifically British success story, the example of Nissan's achievement in automobile manufacturing nevertheless lends credence to the European identity of their operations. As production increased to 400,000 units a year in 1992, the company created a pan-European sales service, headquarters in the Netherlands, to harmonize its after-sales and warranties across the entire European market (UNCTC, 1990, cited in Kumar, 1994).

Although a comparatively recent investment, Honda's UK£ 370 million plant at Swindon in southern England is another interesting example of the success of Japanese automotive manufacturing in the UK. The company expects to reach its initial planned capacity level of 100,000 units per annum later this year, and is now planning a second tranche of investment – a further UK£ 240 million – to bring capacity up to 150,000 units per annum, and to expand the range of models which the plant can produce. The significance will again extend beyond the Wiltshire borders to both Honda's R&D facilities in Offenbach, Germany, and its European component suppliers, over one-quarter of which are located outside the UK. They can expect to receive over UK£ 750 million of trade when the 150,000 output level is reached. Honda expects to sell 200,000 cars in Europe this year, and to set a target of 300,000 – around 2% of the West European car market – for the end of the decade (The *Financial Times*, May 1995).

In the 1994 JETRO survey, 'transport equipment' and 'transport equipment parts' account for 69 (9.5%) of the 729 total respondents, and the distribution by country is outlined below. Yet it should be remembered that many automotive component suppliers may be classified under other headings such 'electronic components' or 'rubber products'. However, the rise in the number of Japanese transport affiliates manufacturing in Spain is noteworthy, as it underlines the importance of low labour costs, while a recent study by Andersen Consulting (1995) also found that quality levels in Spanish automotive facilities were world class. This suggests a successful fusion between Japanese O-advantages in manufacturing technology and Spanish L-advantages in relative labour costs.

Table 9.3.   Location of Japanese European affiliates in the transport equipment and transport equipment parts sectors, by country, 1994

Number of affiliates in:	EC	UK	F	D	NL	B	E	I	P
transport equipment	18	4	2	1	1	1	5	3	1
transport parts	51	19	6	3	3	2	8	3	3

Source: JETRO (1994).

In the computer industry, Japanese companies have used both M&As and strategic alliances to enhance their competitive position in the single market. They faced intense competition from both established American MNEs (IBM, Apple, Digital) and newly-consolidated European conglomerates (Siemens-Nixdorf, Honeywell-Bull). The strategic response of Japanese companies was to engage in their own series of alliances and acquisitions. Fujitsu took an 80% share in the British computer company ICL, and a substantial share in Amdahl, with whom it has strategic technology and marketing alliances. Hitachi has marketing partnerships with both Comparex and Olivetti, while Mitsubishi has taken over Apricot computers.

Building from its successful laptop business, Toshiba is expanding into printers and other peripherals. It now has a central warehouse in Germany, the same country in which it established the first Japanese greenfield computer manufacturing facility in 1990, from which it operates a pan-European ordering system (Kumar, 1994).

9.2.5. Japanese FDI and high value-added activity in the EC

As relative newcomers to Europe, Japanese manufacturing MNEs were able to observe the emergence of a nascent single market from the mid-1980s. Even as the quantity of Japanese investment into the EC surged, the quality of that investment came increasingly under scrutiny. There were accusations, both from opposition parties in the UK and from other European governments, that the factories being established in the UK represented little more than 'screwdriver' assembly plants, using cheap British labour to bypass the Common External Tariff. *In extremis*, parallels were drawn with the *maquiladora* plants built by US companies on Mexico's northern border to serve the US market.

The types of Japanese industries particularly attracted to Europe are the assembly-based, mass-market oriented industries, notably automobiles and consumer electronics (Dunning, 1993 in Mason and Encarnation, 1994). From the starting point of domestic Japanese industrial restructuring, they highlight the strategic challenge of transplanting entire, vertically-integrated

industrial structures to Europe and North America so as to accord with local content requirements.

> What is at issue is not so much how successful the overseas investment activity of a single individual firm can be, but rather how effectively the multi-nationalization of an entire industry can be accomplished. (Ozawa, 1989b, p. 36)

Interestingly, Ozawa believes the diversity of the European environment to be a more complementary fit than the comparative uniformity of the American model:

> The EC ... is an economic entity more suitable for transplanting Japan's multi-layered system of manufacturing than the US market, since wages and other labour-market conditions are regionally still so diverse and heterogenous that a vertical division of labour through sub-contracting can be more appropriately arranged and implemented. (Ozawa, op. cit. p. 151)

While some of their early operations established in Europe lacked any great deal of sophistication, Japanese MNEs have become increasingly sensitive to the need to establish R&D bases within Europe for both political and economic reasons. In 1990 there were only 70 such facilities in the Community, but by 1994 the figure had risen to 250 (see Table 9.4).

Table 9.4.   Location and country share of Japanese R&D facilities in Europe

(figures in parentheses refer to share of all EC in %)

Country	January 1990	January 1992	January 1994
United Kingdom	24 (34.3)	72 (38.1)	83 (33.2)
France	10 (14.3)	29 (15.3)	34 (13.6)
Germany	14 (20)	38 (20.1)	52 (20.1)
Netherlands	3 (4.3)	6 (3.1)	16 (6.4)
Belgium	4 (5.7)	10 (5.3)	16 (6.4)
Ireland	1 (1.4)	2 (1)	7 (2.8)
Spain	11 (15.7)	23 (12.2)	26 (10.4)
Italy	3 (4.3)	8 (4.2)	14 (5.6)
Denmark		1	1
TOTAL EUR-12	70 (100)	189 (100)	250 (100)

Note: No R&D facilities are recorded for Luxembourg, Greece or Portugal.
Source: JETRO, various dates.

There have been numerous examples of the increasing willingness of Japanese MNEs to relocate high value-added activity offshore. The recent decision by Ricoh to shift design work for advanced cameras to Taiwan was attributed primarily to the high Yen (The *Financial Times*, 6.6.1995), but it also indicates an awareness among Japanese firms that, in some sectors, the most innovative R&D is being done outside their home economy and that they need to participate (through acquisition, alliance, licensing or establishment of an R&D subsidiary to tap into quality research personnel overseas) if they are to retain their competitive edge.

Ricoh's move follows similar relocation exercises undertaken by Sharp, who established a multimedia research facility in the US, and NEC, who have invested in a facility in Bonn in

Germany to develop parallel-processor computers. A survey by the Japanese business daily *Nihon Keizai Shimbun* (5.6.1995) found that 20% of Japanese firms were strengthening their overseas R&D activities, in spite of domestic concerns that this would lead to the 'hollowing out' of the Japanese industrial base.

The EC's continuing ability to attract this high value-added activity depends not only the strength of its science base and the quality of its research output, but also on the dynamism of its single market, as Japanese companies in the same survey acknowledge the importance of responding rapidly to changes in their customer's preferences. As the significance of the EC grows for Japanese MNEs, they will find it increasingly important to develop their new products within the SM.

9.2.6. Evaluation of the role of the single market in Japanese FDI

Isolating the impact of the SM on Japanese investment in Europe, as distinct from other important variables such as the appreciation of the Yen or the collapse of the 'bubble economy', is clearly a problematic exercise. As we have seen, there was a considerable surge of investment from Japanese MNEs into Europe in the latter half of the 1980s, suggesting an *a priori* relationship with the SMP.

Since then, however, EC countries have faced increasingly tough competition in attracting Japanese FDI, due to a combination of 'pull' and 'push' factors. The fast-growing economies of the Pacific Rim are being increasingly targeted by Japanese firms not only as locations for crude assembly plants, but also for more sophisticated manufacturing and R&D operations, which act as 'pull' factors. As regards 'push' factors, the continued recession and credit collapse has severely limited the capital available to finance new FDI.

Sanyo Electric, for example, is to build its next semiconductor plant in the Philippines, having already established operations in Korea, Taiwan, China and Thailand. The Thai government has already announced its intention to secure US$ 8 billion in Japanese investment in the next three years. Low labour costs and fast-growing markets are clearly very attractive to Japanese firms, while the newly industrialized economies (NIEs) of Asia are looking for investment, employment and higher grade technology.

The London Director-General of JETRO, Mr Tokio Katayama, was recently quoted as saying, 'Japanese manufacturers are again investing on a very large scale outside of Japan, but this time Asian markets are the most popular and profitable choice' (The *Financial Times*, 11.7.1995). In 1990, Europe was attracting a quarter of Japanese annual outward FDI, second only to the US and twice as much as Asia. By the first half of 1994, Europe's share had fallen to 17%, while Asia now took 22% (The *Financial Times*, 11.7.1995).

The challenge for Europe is to continue to offer locational advantages that will attract high-grade investment from Japan in spite of the increasing draw of the Asian economies. Clearly, the smooth functioning of the SM will remain central to that objective. As yet, none of the major regional economic groupings (ASEAN, NAFTA and APEC) has been able to offer the same level of sophisticated market integration as the EC, although all have announced intention to do so in the longer (20 years plus) term.

Europe's strength lies primarily in its already established base of Japanese affiliates, who wish to expand both horizontally and vertically. Until now, Japanese FDI, as we have seen, has been

focused in comparatively few sectors, specifically automotive, electronic, chemical and precision instruments. The next wave of FDI may bring manufacturers of food products, cosmetics and toys, now that Japanese firms feel they are familiar with European tastes. Similarly, the domestic supplier firms of Japanese MNEs may soon be in a position to establish their own operations in Europe, as the economic climate of both home and prospective host improves.

The effective transfer of entire *Keiretsu* groupings will raise important policy issues for the EC, of which the effectiveness and indeed continued value, of rules of origin will be only one. In an age of truly globalized production, the ability of countries to enhance national welfare through traditional instruments of international economic policy will be increasingly called into question.

9.3. United States FDI into the EC

9.3.1. Historical patterns of US FDI into the EC

When J.J. Servan-Schreiber first drew attention to 'Le défi américain' (1967), US companies were already well-entrenched in European markets. Thus the recent surge in direct investment into Europe by US companies has tended to be sequential rather than first time investment. In contrast to Japanese investors, US MNEs tend to favour M&As as a means to expansion (instead of greenfield investment), and often prefer to use reinvested profits or locally-raised capital as a source of finance. Coupled with long-standing cultural and historical ties across the Atlantic, US investment in Europe has therefore tended to be more low profile and less controversial than its Japanese counterparts.

It should be recalled that in the 1970s, when the first wave of Japanese investment arrived in Europe, US affiliates were already producing between 12% and 15% of the total manufacturing output of the major European countries (Dunning, 1993b). This investment had been initiated as market-seeking investment, and was primarily due to the worldwide shortage of dollars. Following the removal of tariff barriers between members of the EC (Mark I integration), US MNEs restructured their operations in Europe so as to better exploit economies of scale and scope (Cantwell, 1992a). By 1977, US affiliates were exporting 39% of their European output to countries other than the US (mostly elsewhere in Europe), and 59% of these exports were to sister affiliates (US Department of Commerce, 1981).

Moreover, the bilateral, transatlantic (US–EU) investment relationship is not only the largest by value in the world, but it is also, in distinct contrast to the EC-Japanese investment relationship, remarkably well balanced. In 1992, for example, US FDI stocks in Europe were only 6% smaller than European investments in the US. In recent years US investment in Europe have been growing at an average rate of over 10%, but as Table 9.5 suggests, Europe's share of global US investment stocks has hardly altered.

Table 9.5.   US FDI stock data, over time and by region

(US$ billion)

Year	Worldwide	EUR-12	% growth p.a.	% EC share
1987	314.3	124.0		40
1988	335.9	131.1	5.7	39
1989	381.8	161.0	22.8	42
1990	430.5	180.5	12.0	42
1991	467.8	199.4	10.5	43
1992	499.0	207.2	4.0	42
1993	548.6	224.6	8.2	41

Source: US Department of Commerce, *Survey of Current Business* (1994).

9.3.2. EC Member State perspectives on US FDI

As was the case for the Japanese, the UK is overwhelmingly the favoured destination for US investment and leads in every sector, with the exception of commerce (European Commission, 1991). Its position of pre-eminence (around 40% of total US investment in the EC) has changed little since the UK joined the Community in 1973. Intriguingly, the UK's share of US investment did decline from one-half to one-third in the period from 1957 to 1973, when the UK was outside the Community. After the UK signed the Treaty of Rome, its share stabilized, suggesting, in the obverse, that regional (Mark I) integration does act as a spur to inward extra-regional FDI.

When considered over a longer time period, such as 1977–92, the picture of increasing concentration of US assets in the EC during the implementation period of the SMP becomes more apparent. Even though the EC share fell during the recessionary period of the early 1980s, its subsequent recovery has surpassed levels at the equivalent stage of earlier economic cycles.

Table 9.6.   Value of assets of US-owned foreign affiliates, 1977–92

(US$ million)

Year	Assets in EC	Assets worldwide	Percentage in the EC
1977	130,287	352,357	40.0
1982	206,220	580,260	35.5
1989	520,063	1,080,247	48.1
1991	825,749	1,678,345	49.2
1992*	857,960	1,746,757	49.1

* 1992 figures are preliminary.
Source: US Department of Commerce, *US direct investment abroad*, various issues.

9.3.3. Sectoral perspectives on US FDI into the EC

The sectoral breakdown of US investment is rather different from Japan, with a much stronger manufacturing presence in Europe, amounting to over two-fifths of all American investment stocks in the EC. Within manufacturing, chemicals and allied industries are particularly well represented. The US pharmaceutical industry, for example, has long been present in the EC as a manufacturer, and is increasingly engaged in high value-added R&D as such companies globalize their activities. In just the period 1980 to 1988, Commerce Department data on the pharmaceutical industry (cited in OECD, 1994a) record that US outward FDI stocks located in Europe grew from US$ 5 billion to US$ 13.8 billion, growing as a share of US worldwide stocks in this sector from 56.1% to 62.6%. The most recent data on distribution of pharmaceutical assets of US-owned foreign affiliates suggest that nearly three-quarters (72.5%) is now located in Europe.

Table 9.7.   Distribution of US investment in the EC by sector, 1993

(calculated on historical cost basis)

Industrial sector	Amount (US$ million)	Share (%)
Manufacturing	**91,034**	**40.6**
Food, etc.	8,667	3.9
Chemicals	24,760	11.0
Primary and metals	4,620	2.1
Machinery	16,455	7.3
Electrical	5,819	2.6
Transport	9,392	4.2
Other manufacturing	21,321	9.5
Non-manufacturing sectors	**133,554**	**59.4**
Finance and insurance	66,517	29.6
Petroleum	19,827	8.8
Wholesale trade	21,362	9.5
Banking	8,719	3.9
Services	10,803	4.8
Other	6,326	2.8
Total	**224,588**	**100**

Source: US Department of Commerce *Survey of Current Business*, August 1994.

9.3.4. US FDI and the single market

It might be expected that US investment in Europe would be substantially rationalized in anticipation of the SMP. The evidence for the US, however, very much points to a multi-domestic form of FDI, as the following table, adapted from Thomsen and Woolcock (1993), suggests. The pattern seems to have altered only marginally in anticipation of the EC 92. As the authors themselves comment:

> The main conclusion that emerges from these export patterns is that the behaviour of American firms in Europe is not much different from that of local firms. US MNEs tend to invest in or near their largest markets and sell mostly in those markets ... exports to the Community are on the whole much less important than local sales. (Thomsen and Woolcock, 1993, p. 63)

Indeed, Edward Graham (1990) is scathing on the continued parochialism of US firms: 'many US firms operating in Europe did not seem to have much of a strategy to deal with the single market initiative' (p. 177). However, he later moderates these remarks with the observation that '... while there seems to be no rush of large scale new entry into Europe by US-based enterprises, there is considerable restructuring underway of the affiliates of those enterprises already located in Europe' (p. 183).

Table 9.8.   Local sales by US manufacturing affiliates in EC Member States, and proportion of total sales made within national markets

Host country	1977		1989		1992*	
	US$ million	Percentage	US$ million	Percentage	US$ million	Percentage
Belgium	2,035	29	4,932	30	6,447	43
Denmark	241	51	662	57	**	74
France	10,798	68	23,546	67	30,924	72
Germany	19,042	65	41,060	57	62,660	70
Greece	270	79	430	84	638	92
Ireland	229	20	2,282	25	1,156	21
Italy	5,020	73	17,300	73	20,983	83
Luxembourg	45	11	304	28	**	17
Netherlands	2,842	39	7,431	33	10,907	44
Portugal	314	91	723	57	**	82
Spain	3,334	81	12,533	70	15,347	72
United Kingdom	18,261	69	57,364	72	54,569	70
EUR-12	**62,431**	**62**	**168,567**	**60**	**205,870**	**66**

*   1992 figures are preliminary, therefore percentages given refer to share of total accounted for by local sales by all US affiliates, not just manufacturers.
**   Data has been suppressed to maintain confidentiality.
Source: US Department of Commerce, various years.

These findings are supported by econometric studies, such as those undertaken by Barrell and Pain (1995). They constructed a model based upon data on US outward investment over the last two decades. In their analysis, market size and factor cost are found to be important factors, and instrumental variable estimation reveals that expectations of short-run fluctuations in the dollar exchange rate can affect the timing of investments. There is in this study no specific reference to the single market, or even indeed to Europe as a destination for US FDI. However, both the key variables identified above would be affected by Mark II integration, and consequently the model has some explanatory relevance for our present purposes.

Ongoing econometric work, by Jeremy Clegg (1995) on US FDI into the Community founding Member States (EUR-6) for the period 1951–90, seeks to offer a unified treatment of both the real and financial determinants of such flows. In keeping with earlier work (Culem, 1988), market size and market growth are key factors determining FDI flows. Tariff discrimination, particularly relative to intra-EU transactions, is also shown to be significant, and, by analogy, the dismantling of non-tariff barriers under the SMP would similarly be expected to stimulate investment from the US.

However, the insertion of a dummy variable for EC 92 (set to unity for the period 1987–90) does not quite attain significance for the period 1951–90, and is insignificant (and incorrectly signed) for the period 1973–90. The use of an aggregate dummy would not be expected to pick up the inter-industry variation across sectors which could, in reality, be considerable.

The significance of market size and vitality in attracting US FDI is also reflected in recent statistics available from the US Department of Commerce in the *Survey of current business* (March, 1994). Figures on planned capital expenditure in 1994 by US majority owned foreign affiliates (MOFAs) suggest that the worldwide total will grow by 8% to US$ 69.6 billion. However, this growth is overwhelmingly concentrated in East Asia and the Western hemisphere, reflecting the dynamic economic growth in these regions, while Europe remains virtually constant. If these figures prove to be accurate, 1994 will be the first year since 1986 that Europe accounted for less than half of planned capital expenditure by US MOFAs.

Broken down by country, a rather more mixed picture emerges. Belgium, Germany and the UK are all expecting large increases in capital spending by US affiliates, but these are negated by deep cuts in the expenditure plans for US affiliates in Spain, Ireland and the Netherlands. In Belgium, the chemical sector – and particularly pharmaceuticals – is expected to be a major beneficiary, while in Germany and the UK the increase will mainly be in transportation equipment.

Looked at another way, we can see from these same figures that for the period 1987–93, Europe did account for 53% of total capital expenditure by US affiliates. In the previous six-year time period (1981–86), its share was only 45.6%. Indeed, with the one exception of 1979, US Commerce Department data going back as far as 1957 (*Survey of current business*, September 1994) shows that Europe has never accounted for more than half of capital spending by US-owned foreign affiliates. It is therefore increasingly difficult to deny that the regional economic integration that took place in Europe the run-up to 1992 did cause substantial restructuring among US MNEs (include some disposals or disinvestments) as they positioned themselves to gain from the single market programme.

9.4. Conclusion and comparison of US and Japanese FDI into the EC

In the preceding sections we have attempted to show the evolving pattern of Japanese and US investments in the European Community. The purpose was to show how the major global investors from the Triad states have changed their corporate strategies in response to a variety of technological, economic and political variables. The creation of the single market is only one such variable (though by no means the least important), and must be located in an appropriate political and economic context.

We have empirical, theoretical and anecdotal evidence to suggest that substantial restructuring of European investments did occur in the period up to and beyond 1992 in anticipation of the

SMP, and the weight of this evidence supports the expectation that as a consequence of the SM, investment in the EC by the US and Japan has risen more rapidly than their investment outside the EC.

There are, however, important differences between US and Japanese investors in the weight they attach to production in Europe, as opposed to exports to Europe. In 1990, according to relevant government statistics, four-fifths of US manufactured products sold to European consumers were produced in Europe by American affiliates. The equivalent figure for Japanese products is only one-fifth (Dunning, in Encarnation and Mason, 1994). These variations reflect the different ownership 'O' advantages of MNEs from different countries and sectors and their perceptions of the 'L' advantages to be found through European production.

O advantages are in part derived from the 'intangible assets' of MNEs, whose role in investment decisions is associated with, amongst others, the writings of Hymer (1960). This theory proposes that foreign firms engaging in international production need to possess a set of such assets ('monopolistic advantages' in Hymer's thesis) sufficient to outweigh the specific costs of entering a foreign market though FDI. These costs might include language difficulties, unfamiliarity with institutions, regulations or business customs, and casual observation would suggest they are almost certainly higher for Japanese than for US investors. To some extent at least, these differences explain the greater preference of the former than the latter to supply the European markets via exports rather than FDI (Dunning, in Encarnation and Mason, 1994).

The intangible assets of MNEs can be paired under the rubric of O advantages with governance specific advantages, which at least in part subsume elements of internalization 'I' advantages. These governance specific advantages can be best defined as the ability systemically to organize resources and capabilities under their governance so as to minimize transaction costs. It follows that the country of origin of an MNE may partly explain the system of corporate governance used, and that some forms of governance are better suited to particular industries than others. This, in turn, explains why MNEs from certain countries excel in certain sectors (Dunning, in Encarnation and Mason, 1994).

Thus, by comparing the investments made by US and Japanese MNEs, we may be able to discern their relative strengths in different industrial sectors, and one such exercise is tabulated below. The Japanese Concentration Co-efficient (JCC) is found by dividing the share of the total Japanese stake accounted for by one sector by the corresponding US share. Where this is greater than unity, Japanese affiliate production in Europe for this sector is relatively more concentrated than its American counterpart. While this can be only taken as *prima facie* evidence of comparative strengths, the results are nevertheless consistent with what subjective assessment might tell us.

From Table 9.9 we can see that while both Japanese and US investment in the European manufacturing sector is largely directed to high value-added fabricating and processing industries, producing Schumpeterian-type goods, Japanese investment is, relative to the US, most concentrated in the electrical/electronic equipment and motor vehicle industries.

Table 9.9.   Comparative distribution of US and Japanese FDI in Europe, by industry

(relative concentration indicated by JCC> 1)

Sector	Japan		US		JCC
	US$ million	Percentage	US$ million	Percentage	
Manufacturing					
Food products	573	3.8	9,437	10.6	0.36
Chemicals and allied	1,640	10.9	19,262	21.6	0.50
Metals	693	4.5	4,131	4.6	0.98
Textiles	1,022	6.7	1,042	1.2	5.58
Wood products	94	0.6	313	0.4	1.50
Electric/electronic	4,823	31.7	6,013	6.7	4.73
Non-electrical machinery	2,362	15.5	19,105	21.4	0.72
Transportation	2,618	17.2	9,870	11.1	1.55
Other manufacturing products	1,406	9.2	19,917	22.4	0.41
Total manufacturing	**15,231**	**100**	**89,090**	**100**	**1.00**
Wholesale trade	8,329	15.6	24,875	18.6	0.84
Finance, insurance and RE	35,415	66.3	74,370	55.7	1.19
Other services	5,583	10.5	6,159	4.6	2.28
Other n\c industries	4,079	7.6	28,060	22.1	0.36
Total non-manufacturing	**53,406**	**100**	**133,464**	**100**	**1.00**
Total all industry	**68,637**	**100**	**222,554**	**100**	**1.00**

Note: Based on stocks of investment as at December 1991 (US) and March 1992 (Japan).
Source: Dunning, in Encarnation and Mason (1994).

It might be speculated, therefore, that Japanese managerial strengths appear to lie in structuring idiosyncratic, human-intensive, transnational relations, whether they be organized within or between hierarchies. These are contrasted with US management skills, which are predominantly in administrating formalized, but more technical and standardized transactional relations. It is further argued that certain industries are subject to particular kinds of market failure that are best organized through relatively human-intensive forms of industrial co-operation (as opposed to technical or contractual relationships).

To address and exploit market failure, these industries require the creation and maintenance of a consensus among stakeholders to ensure rigorous quality control over sourcing, production and distribution. Good examples are found in the fabrication sectors, namely machinery, computers, electrical and electronic goods, transport equipment and precision instruments. In the manufacturing sector it is these very areas in which Japanese FDI in Europe has been particularly evident.

Across all industries, the value of the Japanese stake in Europe as at March 1992 was US$ 68 billion, just over a quarter of the equivalent US figure of three months earlier. However, the Japanese stake in European service industries was unusually high – approaching half (46.8%) the value of the American investments.

Table 9.10.   Distribution of Japanese and US exports and FDI

(percentage of each country in EC total)

Country	US		Japan	
	Exports	**FDI**	**Exports**	**FDI**
United Kingdom	23	24	19	36
Netherlands	10	9	12	22
Germany	21	23	32	12
France	18	14	11	11
Spain	6	6	6	9
Belgium-Luxembourg	7	6	7	5
Italy	9	10	7	3
Ireland	3	6	1	1
Denmark	2	0	2	0
Greece	1	0	2	0
Portugal	1	1	1	1

Source: Adapted from Thomsen and Woolcock (1993).
Note: sum of figures may not total 100 due to rounding.

In addition to these sectoral variations, distribution of US and Japanese investments in Europe are uneven with respect to individual countries. Table 9.10 shows an extremely close correlation between the share of US exports to Europe which each Member State consumes, and the share of US FDI in Europe which that country attracts. Of itself, this does not prove causality, but the relationship is much stronger for the US than for Japan, and one might hypothesize that US FDI is more geared towards serving national markets, where Japanese FDI is intended to serve a regional (European) market through integrated cross-border production.

Thomsen and Woolcock (1993) speculate as to possible reasons for this relationship. They suggest that a history of receptiveness to exports can encourage FDI by reducing the information costs of penetrating new markets. If there are not common factors at work, then it may be that exports precede FDI, as implied by Vernon's Product Cycle thesis (1966). This theory suggests that, as part of its development, Japan would first export to countries of similar income levels those goods in which it possessed a comparative advantage. As market prospects improved, it would become increasingly profitable to produce these goods (or part of their value added) in Europe. We may therefore expect the correlation of exports and FDI in the above table to get closer as Japanese investments in Europe mature and become more diverse by both sector and country.

On the other hand, it may be that Japanese MNEs perceive exports and FDI as alternative forms of commercial presence in some European countries, whereas US MNEs view these same methods as complementary. There are certain L advantages in Europe that are specific to companies of particular national origin, and three such variables, which can and do vary by industry as well as by home economy, are summarized below:

(a)   The relative level of productivity of the prospective home state, namely the host economy, or other potential investors will be negatively correlated with the relative tendency to produce in Europe, unless such productivity is firm-specific and transferable across borders.

(b)   The transport costs of the finished product from the home market to the final (European) consumer will be positively correlated with the tendency to produce in Europe in comparison with other MNEs whose costs are not so great.

(c)   The greater the discriminatory trade measures (tariffs, quotas, anti-dumping duties, VERs, etc.) faced by MNEs from specific countries in particular industries, the greater will be the tendency to produce in Europe relative to other MNEs whose home economy/industrial sector are not so targeted.

While Japan and the US are undoubtedly the most significant investors in Europe, both in value terms and for what they tell us about the globalization of the world economy, it is worth recalling that other countries are also taking an increasing interest in the single European market. The EFTA states, many of whom have since joined what is now the European Union (although Switzerland remains separate) are one such group. Offshore tax havens are also significant investors in the EU, and increasingly certain developing or newly-industrialized economies (NIEs) are looking to take a stake in European industry as part of the broader liberalization of their economies.

This trend is illustrated in Tables 9.11 and 9.12, which show the relative significance of all investors in the EU, including intra-EU FDI. What emerges is that the intra-EU transactions have increased in importance from an average of 45.8% in the pre-SM period (1984–85) to a consistently higher level of around 54.5% in the period 1986–90, before increasing again to 61.6% in 1991–93. This is suggestive of the SM having a relatively greater effect on intra-EU FDI flows than on extra-EU FDI.

Of course, part of the reason why intra-EU FDI has increased its share of all inward FDI flows in the EU is the dramatic drop-off in extra-EU FDI, particularly those of Japan and the EFTA countries. These recent declines are mainly the result of domestic economic downturns, but they had a dramatic effect on the participation in the EU economy as proxied by FDI flows.

Table 9.11.   Source of inward FDI flows in the EU (values)

(million ECU)

Year	US	Japan	EFTA	Other	EUR-12	TOTAL
1984	2,951	390	1,663	1,148	4,213	10,365
1985	1,788	719	1,838	1,366	5,949	11,660
1986	2,660	465	3,258	736	10,449	17,568
1987	2,337	1,572	3,833	5,249	12,344	25,335
1988	2,551	2,584	8,509	4,497	22,317	40,458
1989	9,846	4,354	8,351	5,392	34,485	62,428
1990	9,178	5,406	11,284	6,885	39,295	72,048
1991	5,411	1,682	6,883	6,957	34,904	55,837
1992	11,619	1,816	4,036	5,080	38,373	60,924
1993	9,044	1,662	3,634	6,689	30,844	51,873

Source: Eurostat (1995).

Table 9.12.   Source of inward FDI flows in the EU (percentages)

Year	US	Japan	EFTA	Other	EUR-12	TOTAL
1984	28.47	3.76	16.04	11.08	40.65	100
1985	15.33	6.17	15.76	11.72	51.02	100
1986	15.14	2.65	18.55	4.19	59.48	100
1987	9.22	6.20	15.13	20.72	48.73	100
1988	6.31	6.39	21.03	11.12	55.16	100
1989	15.77	6.97	13.38	8.64	55.24	100
1990	12.74	7.50	15.66	9.56	54.54	100
1991	9.69	3.01	12.33	12.46	62.51	100
1992	19.07	2.98	6.62	8.34	62.99	100
1993	17.43	3.20	7.01	12.89	59.47	100

Source: Eurostat (1995).

South Korea, whose economy grew by 8.3% in 1994, and is estimated to be around 7.3% in 1995, is an interesting example of an NIE. The four major *chaebol* (large industrial groupings), are all believed to be considering substantial investments in the EC. Samsung have already announced plans for a UK£ 600 million plant in the north of England, and this is likely to attract inward investment from both Korean suppliers (Young Shin, for example, have announced their intention to build a factory in the same region) and competitors, given the oligopolistic follow-my-leader behaviour of the *chaebol*, that was first observed by Knickerbocker with reference to

US MNEs (1973). Daewoo have said they are committed to raising their investment stake in Europe from US$ 300 million to US$ 1.3 billion (The *Financial Times*, 10.2.1995).

The EC has not, until recently, been a significant factor in South Korea's economic boom. As at November 1994, Europe accounted for less than 10% of their total exports, and barely 13% (US$ 1.3 billion) of their overseas investment stock. Other Asian economies (US$ 4.2 billion) had over three times as much as Europe, and North America (US$ 3 billion) well over twice as much. Those proportions could alter dramatically if the planned investments listed in Table 9.13 come to fruition (The *Financial Times*, 10.2.1995).

Behind this rush into Europe lies a variety of motivations. Like the Japanese, Korean MNEs are finding it increasingly expensive to produce at home because of rising land and labour costs. One Daewoo electronics executive recently went on record saying that the average monthly wage in their South Korean plant at Kumi was US$ 1,300, while their equivalent facility in Antrim, Northern Ireland, paid only US$ 1,200. Korean MNEs are also often seeking to acquire technology by investing in Europe. This explains Samsung's interest in the German camera manufacturer, Rollei, and the Swiss clock company, Nouvelle Picquerez.

On the negative side, concern over the rising number of anti-dumping investigations being targeted at Korean producers has provided a powerful incentive for investment, as it did for Japanese MNEs a few years earlier. Hyundai's US$ 15 million excavator plant in Geel, Belgium, was rapidly brought on stream when it became apparent that European manufacturers were considering such a complaint.

While the UK has attracted many of the most recent high profile projects, Germany has proven to be the most attractive EC destination, attracting 20% of the total; followed by the UK with 16% and France with 14%. Eastern Europe is also proving to be an attractive site for the *chaebol*.

Table 9.13.   Selected Korean investment projects in Europe

Value (US$ million)	Investor	Sector	Location
700	Samsung	Consumer electronics	Wynard, UK
120	Samsung	CTV tubes .	Berlin, Germany
759	Daewoo	Automobiles	Craiora, Romania
150	Daewoo	CTV tubes	Longwy, France
138	Daewoo	Cathode ray tubes	Lorraine, France

Source: The *Financial Times*, 10.2.95, from Bank of Korea.
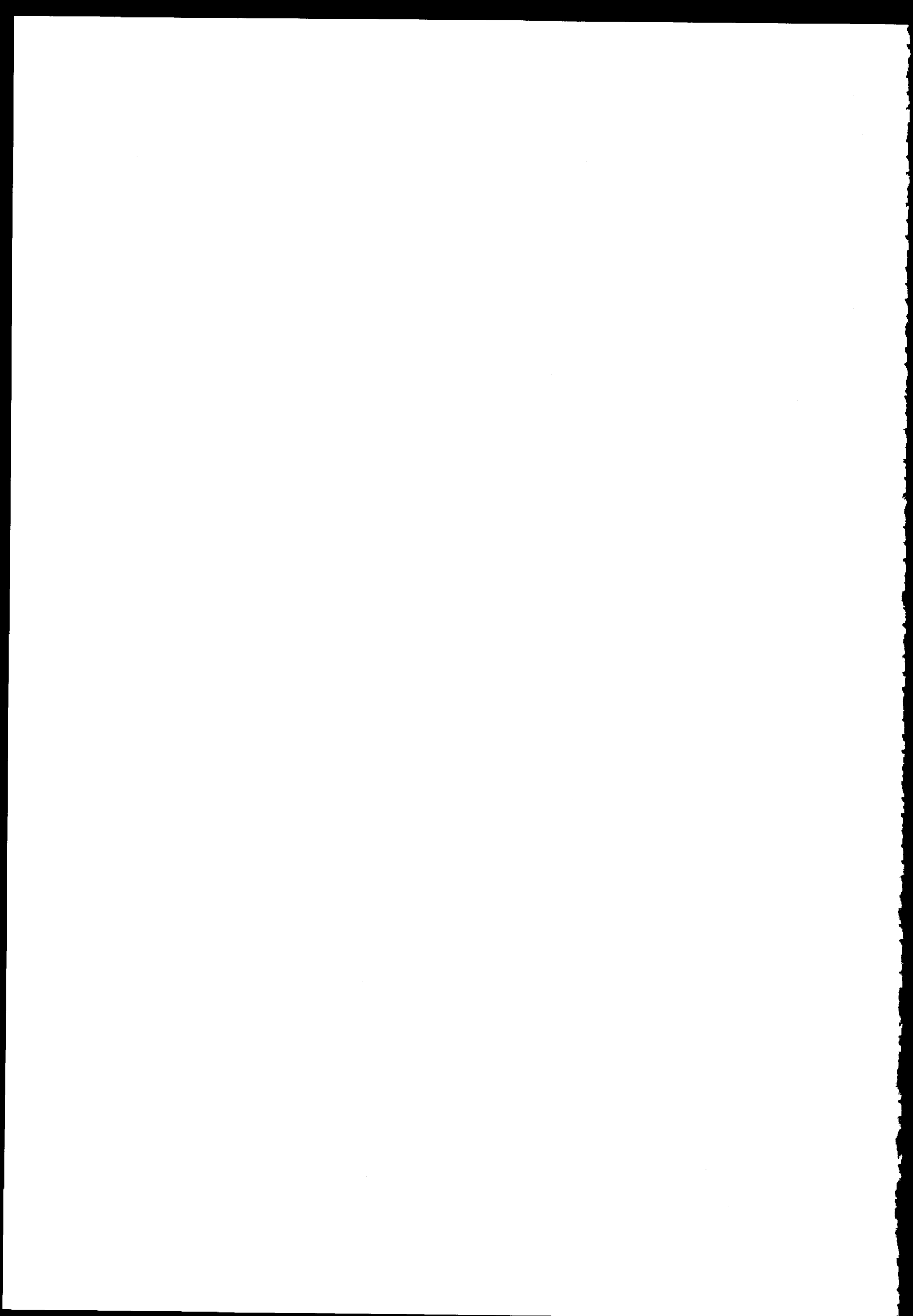
10. Corporate strategy and the single market

10.1. Introduction

In the light of recent developments in FDI flows inside the EU – specifically the steep increase in cross-border M&As – the strategic behaviour of firms must also be considered as a major factor in the rise in European direct investment. As noted in Chapter 3, considerations of corporate strategy have often been neglected in analysis of MNE operations.[54] In part, this can be seen as reflecting a narrow focus on efficiency considerations when considering the choice between FDI and trade, which typically disregards the likely reaction of competitors and the resulting market structure (Acocella, 1992). Increasingly, MNEs compete with global strategies in which trade and FDI are integrated, and both must be employed together in the expansion of successful firms (Porter, 1990; Blomstrom and Lipsey, 1988).

In this chapter, international production is analysed as an instant of microeconomic strategy and as a consequence of competitive positioning of firms within their industries. At one level, our concern is with the MNE as the central decision-making unit in international production, rather than with FDI as such (the major means by which international production is undertaken). As first recognized by Hymer (1960), FDI is essentially a means to extend control for reasons of corporate strategy,[55] rather than as a channel for shifting resources from one country to another. At the mesoeconomic level of explanation, we are concerned with the impact of the activity of one firm on that of another and the interrelated development of the firm and its industry.

In the sections which follow, we first briefly assess alternative multinational strategies from an economic and competitive perspective, and then explore how the single market and other factors shaping the external environment of firms lead to FDI decisions via their strategic reaction to such external forces. A framework for our approach is set out in Figure 10.1. Third, we evaluate the available empirical evidence on corporate strategic reactions to the SM, using both the Commission's own survey of firms and data on M&As.

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[54] Dunning (1993a) has recently introduced strategy as a 'dynamised add-on variable' in his eclectic theory of international production.

[55] Thus, FDI may be an aggressive strategy by firms to advance their market power. Structural market imperfections give rise to oligopoly rents, as a result of entry barriers firms may erect or increase by various means, including the acquisition of competitors (which is itself a form of internalization). Their presence helps the MNE to close markets and thereby increase its market power. This is particularly the case when FDI finances M&As, which can raise the market power of the group in question. 'First-mover-advantages' can be gained by a firm which acquires another firm before its rivals do, making market access more difficult for them in turn. A quick acquisition, instead of investment in a distribution network to increase exports, can enable the investor to enlarge its market share in the host country overnight. Rhône-Poulenc reduced its dependence on the French market for health product sales from 75% to 33% in one year through foreign acquisitions (Thomsen and Woolcock, 1993).

Figure 10.1.   Strategic determinants of foreign direct investment

DRIVERS OF FOREIGN DIRECT INVESTMENT				
Technological change	Liberalization & deregulation (other than SM)	SINGLE MARKET	Globalization	Macroeconomic environment

PRIMARY STRATEGIC REACTION OF FIRMS

Cost reduction (S)
Scale, scope & increasing technical efficiency

Product diversification (P)
Vertical/backward/forward integration
Horizontal/widening product range

SECONDARY STRATEGIC REACTION OF FRIMS

Location shifting	Cost reduction	Competitive orientation	Industry consolidation	Sourcing & trade

FOREIGN DIRECT INVESTMENT

Type of investment

Location of investment

Greenfield	M&As

Intra-EU/ Extra-EU (Home countries)	North/ South EU (Host countries)

10.2. The impact of the single market on the strategic behaviour of firms

In this section we will explore how EC 92 is likely to affect the strategic behaviour of firms as manifested in FDI. In doing so, we would like to make particular reference to Michael Porter's (1980) original framework of generic competitive strategies, i.e. the primary strategic reactions of firms in the form of their cost reduction (S) and differentiation (P) strategies.

The following analysis sets out to examine what has been the impact of the SMP on the secondary strategic reactions of firms, in terms of competitive orientation, cost reduction, industry consolidation, location shifting and sourcing and trade. Along similar lines, Buigues and Jacquemin have put forward a number of hypotheses, according to which firms achieve advantages of scale and scope within one firm or through a network of related firms (S-advantages); or through product differentiation (P-advantages). Combining these two to various degrees gives rise to particular firm strategies (focus, global differentiation, take, and volume) and industry structures (fragmentation and concentration). These possibilities are represented in Figure 10.2.

Figure 10.2. The competitive strategy impact of 1992

		S-advantages	
		Weak	**Strong**
P-advantages	**I** high	**FOCUS** - specialized goods & services (e.g. musical instruments, software) - many protected national firms (e.g. Telecom) 1992: new competition looking for a European position in case of unused scale & scope; aiming for market expansion	**GLOBAL DIFFERENTIATION** - multinational firms (e.g. car, manufacturing, pharmaceuticals) - advantages of scale and scope - growth restrictions because of fragmented markets 1992: increased growth and efficiency thanks to improved distribution, marketing potential and fewer national adjustment requirements **III**
	II low	**TAKE** - widespread technology - especially small or medium-sized firms (e.g. woodwork) 1992: few major changes in the offing	**VOLUME** - significant advantages of scale and experience - hefty price competition (e.g. steel, semi-conductors) **IV** 1992: increased efficiency and export opportunities. A lot depends on the EC's external trade policy
		Fragmented	Concentrated
		Sectoral structure	

Source: After Buigues and Jacquemin (1992) in Sleuwaegen (1995).

In turn, each of these strategies have implications for other areas of strategic decision-taking, e.g. innovation, sourcing, location of industry, M&As, and the propensity to engage in strategic alliances. At the same time, the SM has implications for the strategies of firms via the effects it may have on the economic and political environment of the participating countries, most noticeably the macroeconomic and macro-organizational role played by governments.

As argued earlier, the received literature on intra-industry direct investment and strategic interaction between MNEs has focused on competition in markets for final products, and has generally treated FDIs as if they were import-substituting. Although this can be justified to some extent when discussing investment flows between the Triad members, within the EU direct investment is now more of a complement to, rather than a substitute for, trade.

In the intra-EU case, intra-industry direct investment and strategic interaction between MNEs are increasingly bound up with the restructuring of affiliate networks and the refinement of the intra-firm division of labour.

> Each affiliate becomes specialized in accordance with local production conditions and not simply (or not at all) as a result of the requirements of local markets. An exchange of investments between major rivals within the EU is not so much a matter of trading market shares as of geographically dispersing the production of each company to strengthen their overall European operations. (Cantwell and Sanna Randaccio, 1992, p. 73)

It is further observed by G. Yannopoulos (1992, p. 340) that:

> ...especially since 1985, the European (MNEs) pursued simultaneously strategies of 'regionalization' aiming at the rationalization of their production operations inside the (EU) and strategies of building-up integrated networks of affiliates worldwide in an effort to reach the critical mass required for effective global competition. It would appear that both strategies are mutually reinforcing and that (EU MNEs) view both moves as complementary strategies in global competition.

Cantwell (1992b) has argued, however, that integration within most MNEs is increasingly intra-regional (intra-EU) at the expense of inter-regional integration.

Growing corporate integration across EC countries is reflected in the increasing importance of intra-EC FDI. A dramatic increase in the intra-EC stock, from US$ 45 billion in 1980 to US$ 241 billion at the end of 1991, is indicative of this heightened tendency towards corporate integration (Kumar, 1995).

In order to cope with the challenges presented by the single market, European firms have used M&As, joint ventures, and strategic alliances to consolidate and restructure their operations. Typically, reorganization strategies have involved initial consolidation at the national level followed by cross-border mergers. In such scenarios, 'national champions' have integrated themselves through successive cross-border M&As, evolving into large pan-European enterprises. The Dutch ING Group was born in 1991 from the merger of the largest Dutch insurance company and a major Dutch bank, itself the product of a merger of two smaller Dutch banks. ING Group's takeover of Belgium's second biggest commercial bank, Banque Bruxelles Lambert (BBL), at the end of 1992, established ING as Europe's leading integrated banking and insurance concern.

BBL's then chairman commented just before the acquisition by ING that, with the downfall of national business barriers as a result of the SMP, both ING's and BBL's home markets are too small for them to compete successfully with the big international banks. The only viable solution for ING and BBL, he argued, is to join forces as a 'super-regional' bank and become a leader in a home market spanning the Netherlands, Belgium and Luxembourg. The deal was the first of its kind and magnitude in the increasingly border-free financial market that is emerging from the SMP, and follows several failed cross-border banking combinations (*Wall Street Journal*, 11.9.1992).

Up until the formal completion of the SM, the greatest cross-border activity in Europe had been in the chemicals, pharmaceuticals and electronics industries. Food, drink and tobacco companies had also been involved considerably in M&As (*The Economist*, 4.7.1992). As will be seen later in this chapter, M&As peaked in 1990, well before the formal completion date of the SM, reaching 622 deals, 257 of which resulted in conglomerates with a turnover of ECU 5 billion (Kumar, 1995). After some sluggish years in the early 1990s, the recent recovery in cross-border acquisitions in the EU, with the number of deals growing in 1994, for the first time in three years, to more than 1,500, seems to be a symptom of more than just the cyclical economic recovery.

One reason is the increasing realization of uncompetitiveness (particularly among manufacturers) in the face of rival US and Asian firms. The biggest merger of 1994 between Dutch Akzo and Sweden's Nobel, two chemical firms, in a deal worth ECU 1.7 billion provides a good example. Furthermore, privatization and the evolution of the SM are exposing firms to more competition and preventing governments from interfering in deals. German BMW's acquisition of Britain's once state-owned Rover Group is a case in point. The privatization of industrial holding companies in Spain and Italy opens the way for more massive restructuring (*The Economist*, 21.1.1995).

With only 'national champions' remaining in certain industries, cross-border mergers are often the only way to advance market power. In the stagnant and highly competitive European food market, M&As may be the only way for a firm to gain market share short of engaging in costly price wars.[56] In the past decade, Nestlé and Unilever have between them spent US$ 22 billion on acquisitions. In 1992, Nestlé snatched France's Source Perrier from the grasp of Italy's Agnelli family in a heated US$ 2.3 billion bid battle (a price representing roughly 40 times Perrier's historic earnings).

The number of cross-border European food deals has recently fallen in a sluggish market. Now that the pressure to cut costs and to innovate is taxing even the largest companies, strategic alliances are seen increasingly as a solution to their problems. One example is the joint venture between BSN and Unilever set up in January 1993, which will make and sell frozen snacks combining ice cream (Unilever's speciality) with yoghurt (BSN's) (*The Economist*, 4.12.1993).

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[56] M&As are also an easy way to acquire strong brands and to strengthen weak ones in a market where, in the words of Antoine Ribaud, the head of BSN, 'the number one makes a lot of money, the number two can make a decent living and the number three just suffers' (*The Economist*, 4.12.1993).

It is therefore apparent that the restructuring of EU firms is characterized by a high degree of intra-EU corporate integration, pan-European rationalization and relocation of production within and outside the single market. The degree to which corporate integration is achieved by EU enterprises varies across sectors, due to a number of industry-specific and firm-specific factors. Industry characteristics which tend to encourage integration are:

(a)   economies of scale, experience and location;
(b)   product differentiation;
(c)   research intensity;
(d)   concentration of distribution channels;
(e)   deregulation of public procurement policies;
(f)   technological opportunities;
(g)   low transportation and communication costs.

The firm-specific factor is market share: a firm with a large market share is seen as more likely to integrate.

Earlier research for the UNCTC (EAG, 1993) suggested the greatest impact of the SMP will come from the harmonization of industrial norms and technical standards and could represent a threat to smaller firms. The SM will intensify competition in Europe, which most firms plan to address by pursuing strategies of differentiation rather than low cost in order to achieve competitive advantage. The SM is inducing only a small percentage of MNEs to seek competitive advantage solely via low cost. Most, however, do plan to extensively exploit scale and scope economies and rationalize supplier, manufacturing and distribution systems, all within rather than outside the EC. A wave of corporate restructuring is underway, but has involved very little backward integration. Fewer, larger and tougher European enterprises are likely to result from the SMP. In the light of the recent recovery of cross-border M&A activity, it is not evident that the impact of the SM on the level of direct investment has weakened considerably.

Following our brief survey of the literature we can begin to explore the issue of business strategy empirically. The strategy literature was treated as distinct from the earlier literature review because its drivers are distinct from those traditionally associated with FDI. However, we believe them to be of critical importance in the context of the SMP and the parallel processes of globalization. In this chapter we explore the nature of the corporate response to the SM and seek to establish whether the *ex ante* predictions of the literature and the *ex post* findings of previous research can be supported. Our analysis synthesizes the subjective perspectives of business executives on the SM with objective data on M&A activity in the EU.

10.3. Business surveys

This section reviews the Commission's own business opinion survey work on the impact of the SM undertaken as part of the comprehensive review of its operation.[57] It included both of the following elements:

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[57] Published as *The Single Market Review: Results of the business survey*, Office for Official Publications of the EC, Luxembourg and Kogan Page, London, 1997.

(a) interviews with European trade associations, covering some 200 industrial and service sectors;
(b) questionnaire survey of over 20,000 companies inside the EU, to which there was a response rate of over 65%.

10.3.1. The trade association survey[58]

Generally speaking, the perception is that the SMP has had a positive effect on the economy, though much remains to be done. Trade associations in the manufacturing sector felt that progress towards the SM resulted as much from improvements in the implementation of measures adopted before 1986 as any enacted after that date. In the case of services, the expectations of future benefits were positive, but many associations indicated that as yet there has been little effect of the SM on these industries.

Many associations stressed the importance of other developments that had occurred simultaneously with the SMP but have also re-shaped the business environment. These included globalization, the GATT trade liberalization, the opening up of Eastern Europe and the downturn in the business cycle of the early 1990s. Nevertheless, most associations did see a direct link between the SMP and an increase in competitive pressures.

With respect to the specific issue of FDI and the location of plants, many associations remarked upon the increase in M&A activities in the years that followed the launch of the SM, but tended to attribute this to general patterns of globalization in their respective industrial sectors. To some extent however, the SM was perceived to have facilitated this consolidation process (rather than having actually caused it) by allowing easier cross-border operations through a variety of modalities (alliances, joint ventures, mergers, co-operation agreements).

The liberalization of public procurement and the harmonization of standards was seen as particularly significant in affecting FDI activity by the electrical engineering, consumer electronics and automotive sectors. Harmonizing standards was also seen as critical by the food, drink and tobacco sector in shaping the growth of M&A activity. 'Increased facility of cross-border operations' as a consequence of the SM was also reported by the aerospace sector. However, the nature of the corporate response in terms of FDI (greenfield vs M&A, diversification vs focus, forward vs backward integration) seems to be determined by highly-sector specific variables.

In conclusion, the survey states:

> the overall influence of the SMP on the location of production facilities within and outside the EU has remained limited, although regional policy has to some extent influenced industry location. One exception is the transport equipment sector, where the SMP has induced an opening of the market which had a considerable impact on the location of plants, with a major increase in the geographical spread of production facilities (particularly in the automotive sector) to enable firms to serve a larger market.[59]

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[58] DRI (1995), 'Survey of the Trade Associations' perceptions of the effects of the single market'.

[59] DRI (1995).

10.3.2. The survey of EU businesses

As with the trade associations, the views of EU businesses are very much a subjective response, and will be coloured by, for example, any wish to 'send signals' as to how they would like to see future developments with regard to the SM. Nevertheless, as data have recently become available (with some important lacunae however[60]) we have integrated the results into our study as a macro-level complement.

Although there were no specific questions in the survey relating to levels of FDI, there are a number of other relevant questions that shed light on the issue. For example, nearly one-third of EU manufacturing businesses (31.4% when weighted by turnover) felt that the liberalization of capital movements had a positive impact on their business. This was particularly true among the peripheral countries of the Union, where the positive figure could be as high as 79% (Greece), 60.1% (Portugal) or 56.0% (Spain). This result would have been expected, given the previously high level of regulation that had existed in these countries, and intuitively one might also have expected to see increased levels of FDI as a consequence.

While the share of manufacturing firms claiming to have suffered a negative impact due to the liberalization of capital movements was negligible (under 2%), the majority stated that it had no effect. This apparent indifference is reflected in the section of the questionnaire that relates to corporate strategy, the relevant results of which are reproduced in Tables 10.1 and 10.2 for both the manufacturing and the services industries. In all cases we use the data on manufacturing firms as weighted by turnover, although no weightings are available for the services sector. In respect of the services sectors we are also obliged to exclude Germany, as complete data are not available.

Table 10.1. Single market impact on strategy: survey of manufacturing firms in the EUR-12

(%)

	Very important	Quite important	Not important	Don't know
Establishment of plants in other EU states	4.1	13.5	53.2	29.3
Penetration of markets in other EU states	11.9	25.9	46.5	15.8
(Direct) investment in other companies	4.5	10.9	51.4	33.1
(Direct) investment from other companies	2.0	6.2	55.1	36.6

Note: Results weighted by turnover.
Source: Eurostat (1996).

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[60] Data are not available on the German services industry with the one exception of the distributive sector. In this chapter we therefore exclude Germany (EUR-11) when considering the services sector.

Table 10.2   Single market impact on strategy: survey of service firms in the EUR-11

(%)

	Very important	Quite important	Not important	Don't know
Establishment of operations in other EU states	4.8	9.5	39.1	46.5
(Direct) investment in other companies	2.2	7.2	38.1	52.5
(Direct) investment from other companies	2.3	7.3	34.9	55.5

Note: Results weighted by enterprise. (1996).   *Source:* Eurostat

The picture that emerges in the case of manufacturing suggests that the SM had only a modest effect on corporate strategy where it affects FDI. With respect to greenfield FDI, the question was put as to how important the SMP had been in the establishment of production plants in other EU states. Only 17.6% responded that it had been 'very important' or 'quite important', with over half stating the programme was of 'no importance' to their strategy in this area, and the balance responding 'don't know'.

Detailed scrutiny of the data for country and sectoral variations reveals that the SM was viewed as particularly unimportant by UK firms, of whom only 6.8% characterized it as either 'very important' or 'quite important', and the equivalent numbers for Spain (10.4%) and Portugal (10.1%) were also low. However, firms from some other Member States, especially Luxembourg (27.4%), Denmark (19.8%) and Ireland (24.6%), saw the programme as much more significant. The same question drew little variation when results are analysed by industrial sector with the exception of the motor vehicle sector, where 30.6% of respondents considered the SMP as important to some extent. This is consistent with the findings of the trade association survey discussed in Section 10.3.1.

With respect to M&A transactions the question was put as to how important the SM had been regarding strategy for investment in other companies. Again there was little suggestion that the SM had played a pivotal role, as only 15.4% of manufacturing respondents (weighted by turnover) believed it to be 'very important' or 'quite important'. Over half thought the programme was of no importance, and a further third did not know or found the question not applicable to their business. In the UK, the proportion considering the SM important to any degree on this issue was only 7.1%, and in Spain, only 7.6%. It was much higher in the smaller countries such as Greece and Luxembourg, where the figure was over 30%, and also for firms in the motor vehicle sector, where 24.2% believed the programme to be 'very important' or 'quite important'. Looked at from the perspective of inflows of FDI through M&As, there was even less suggestion that the SM was significant in shaping corporate strategy, as only 8.2% of respondents across the EU found it to be important to any degree.

Taken together, these findings suggest that the impact of the SMP on corporate strategy as it pertains to FDI in the manufacturing sector has been limited. By way of contrast, we also include data from the same survey on the SM was perceived to have shaped strategy in respect

of the penetration of markets in other EU states. Here the findings are much more positive, with 37.8% of the (weighted) respondents perceiving the programme to have been 'very important' or 'quite important'. In the absence of a strong FDI effect through either M&A or greenfield, the inference must be that these markets are being served by some other modality, such as exports or strategic alliance/co-operation agreement.

The Eurostat questionnaire survey also asked about strategy with respect to co-operation agreements and the SM. Only 17.9% of respondents believed the SM was 'very important' or 'quite important' to their strategy in this area, which by default suggests that trade has been the principle beneficiary of the SMP in terms of serving overseas markets in the EU. This seems the only logical explanation of the 30.5% of respondents who believe that the SM has had a positive effect on their sales to other EU countries.

In the case of services the data are less complete, but some inferences can still be drawn. Regrettably, Germany is omitted, which means the data is skewed in favour of the UK (40.6% of respondents), and there is also a bias towards 'other business activities' (NACE 74) that covers 46.8% of respondents. It should also be recalled that the data is not weighted by either turnover or employment, which necessarily weakens any conclusion.

Perhaps surprisingly, because of the high NTBs that existed, aspects of the SMP that relate to FDI do not seem to have been viewed very positively by services firms. For example, only 14.7% viewed the liberalization of capital movements as being positive for their firm, which is less than half the proportion of manufacturing firms that took this view. Moreover, only 10.1% believed that SM measures to facilitate physical establishment in other Member States were positive for their firm, with over three-quarters (78.2%) believing it had no effect. In both of these examples however, British firms take a much less favourable view of the SM than their continental counterparts, and their high share of sceptical responses outweighs other Member States. The establishment of the SM in other Member States was viewed positively by 46.8% of Danish services firms, 29.1% of Greek services firms and 20.9% of Spanish services firms.

Moving on to the strategy survey, Table 10.2 shows that EU service firms feel their business environment to be less affected by the SM than their manufacturing counterparts. This is contrary to the findings of Chapter 7, where FDI in the services sector was shown to be significantly more heavily influenced by the SM, but is consistent with the findings of the trade associations survey discussed at the start of this chapter. In the Eurostat (1996) survey only 14.3% of respondents in the service sector believed the SM to have been 'very important' or 'quite important' in determining their strategy for the establishment of operations in other Member States.

Regarding the parallel questions on M&As, less than 10% of services firms thought the SM had affected their strategy on investment in (9.4%) or from (9.6%) other companies. As with manufacturing, there is evidence that exports have been more affected by the programme than FDI. 17.3% of firms responded that the SM had been important in increasing their cross-border provision of services to other Member States, which, taken in conjunction with the preceding data on FDI, points to an increasing tradeability of services inside the EU.

10.4. The role of M&As

This section considers the changing volume, role and sectoral spread M&As in the period under review. M&As grew enormously in volume and value in the later 1980s, and while this is no doubt due to a variety of factors, we can also link this phenomenon to the emerging single market as objective evidence of MNEs strategic response to the changed business environment.

Studies on M&A activity have typically been concerned with domestic M&As rather than cross-border activity. One notable exception is a study by the London Business School (1990), which is mainly qualitative and concerned with the general boom in M&As during the 1980s. The authors, Geroski and Vlassopoulos, observe that merger activity within the EC grew very rapidly in the 1980s. Their calculation that the largest 1,000 European firms were involved in three times as many mergers in 1987 as in 1983, suggests the possible importance of the single market effect in explaining such increased FDI activity.

It should be remembered however, that this boom reflects a growth in all mergers: domestic as well as transnational ones. Kay (1990) notes that 'two-thirds of all mergers took place within a single country' (p. 9), and that a very high proportion of mergers took place within the UK: 85% of 2,000 mergers in 1988 involved a UK firm, which led him to conclude: 'the most common type of merger within the EC – possibly accounting for a majority of all mergers within the EC – is a transaction in which one UK firm acquires another UK firm'.

The important role of US firms in overall European merger activity should not be overlooked either. Anglo-Saxon financial markets and institutions have historically been more attuned to the particular needs of this form of transaction. Indeed, the intra-US merger boom of the late 1980s was the fourth this century, following previous surges in 1898–1904, the 1920s and the 1960s.

Until 1988, much of the new US investment in Europe took the form of reinvested earnings, but since then US MNEs have trebled their rate of acquisition of European companies. However, many US firms have also found that the establishment of the SM has given them the opportunity to rationalize their European operations and dispose of duplicative subsidiaries in different Member States. Within the pharmaceutical sector alone, the number of US subsidiaries in the EC has dropped from 336 to 163 in the period from 1982 to 1992 (Stopford, 1982, 1992). Many of these subsidiaries will have been merged into pan-European subsidiaries to serve the whole EC.

Smith and Walter (1994) have explored the M&A phenomenon in some detail through a database compiled from figures published by the Securities Data Corporation in the US, and their important findings are summarized in Tables 10.3 and 10.4.

Table 10.3.   Average annual levels of M&As

(values in US$ million)

	1985–87	1988–90	1991–93
Intra-European	29.0	114.6	89.4
Extra-European	28.5	75.6	43.3
European total	**57.5**	**190.2**	**132.7**
US domestic	199.0	222.7	109.6
US cross-border	35.1	78.8	36.3
US total	**234.1**	**301.5**	**145.9**
All other	1.0	11.3	31.3
Global total	**292.6**	**503.0**	**309.9**

Source: Based on Smith and Walter (1994).

Table 10.4.   Share of worldwide M&As

(percentage of total value)

	1985–87	1988–90	1991–93
Intra-European	9.9	22.8	28.8
Extra-European	9.7	15.0	14.0
European total	**19.6**	**37.8**	**42.8**
US domestic	68.0	44.3	35.4
US cross-border	12.0	15.7	11.7
US total	**80.0**	**60.0**	**47.1**
All other	0.4	2.2	10.1
Global total	**100.0**	**100.0**	**100.0**

Source: Based on Smith and Walter (1994).

Walter attributes this dramatic growth in European M&A activity to five main factors:

(a)   an overdue need for industrial restructuring in Europe, similar to that which occurred in the US earlier,
(b)   the 'special motivations' associated with the SMP,
(c)   the new availability of adequate financial resources,
(d)   the increasing liberalization of European capital markets,
(e)   the transfer of financial expertise from the US to Europe.

As Walter notes, the SMP is only one factor behind the growth in European M&A activity. The dramatic increase is also no doubt due to the liberalization of the capital markets that took place at this time (independently of the SM), most famously in London's 'Big Bang' deregulation programme of 1986, which was soon imitated in other European financial

centres. This freed up capital flows across the EC and attracted the interest of outside (particularly US) investors and financial experts.

Indeed, by 1990–91, intra-European merger transactions were of near equal value to intra-US transactions; although this is no doubt in part due to the US economic slowdown, and the collapse of Wall Street share values. It should be noted that Walter's definition of 'European' firms is not limited to the EC.

Taking the six-year period as a whole, Walter found that French and Italian companies have increased their intra-European transactions the most in this period. M&A activity by French companies has surged both domestically and to a lesser (but still considerable) extent internationally. Pharmaceutical firms Rhône-Poulenc and Sanofi have both made significant acquisitions in the last few years to consolidate their position within that industry. In absolute terms however, the UK remains the dominant player, with 58% of all intra-European M&As involving at least one British firm.

Despite its large GNP and industrial base, German firms have not been nearly so active in the growth of mergers either as buyers, and even less so as sellers. German firms (like those in France, Switzerland and the Netherlands) have considerable powers to resist hostile takeovers, and in general the business culture is more amenable to long-run, organic growth built upon enduring relationships with the major domestic banks, who often themselves have sizeable shareholdings.

The national breakdown of intra-European M&As is summarized in the tables below, first in value terms (Table 10.5), and then by share (Table 10.6) of all intra-European transactions.

An alternative perspective is provided by Directorate-General IV of the European Commission in its *Annual Report on Competition Policy* (European Commission, various dates), which includes in its annex some descriptive data about trends in M&A activity. As of 1993, the report has switched from using the in-house DOME database to outside sources, primarily the AMDATA database.

Although the Commission figures do not provide any values for their record of M&A activity, they do distinguish between EC and non-EC firms, allowing for clearer analysis of the potential impact of the single market. The Commission figures confirm the broad trends highlighted by Walter, namely an M&A boom, which included but was not exclusive to the EC, peaked in 1989–90 and declined dramatically thereafter, although most recent figures suggest that the trend may be upwards once more. The five geographical categories of transaction are listed below and the main findings summarized in Table 10.7:

(a)   national (domestic transaction within one Member State) – category I,
(b)   intra-EC (cross-border transaction within the EC) – category II,
(c)   EC-international (EC-buyer of extra-EC firm) – category III,
(d)   international-EC (extra-EC buyer of EC firm) – category IV,
(e)   extra-EC (no involvement of EC firms) – category V.

Table 10.5. Intra-European M&As, annual average volumes, by country

(values in US$ million)

Country of buyer company	Period	Country of seller company					
		France	Germany	Italy	UK	Other Europe	Total buyers
France	1985–87	1,085	0	288	107	11	1,491
	1988–90	12,090	952	1,549	4,044	3,412	22,047
	1991–93	11,116	2,703	774	290	2,615	17,519
Germany	1985–87	138	777	296	197	148	1,556
	1988–90	499	2,423	319	1,312	949	5,502
	1991–93	159	8,085	131	536	1,517	10,311
Italy	1985–87	7	43	3,134	6	350	3,540
	1988–90	467	461	8,595	25	468	10,016
	1991–93	923	368	3,847	27	316	5,481
UK	1985–87	109	114	42	18,497	223	18,985
	1988–90	1,677	653	276	42,079	2,834	47,519
	1991–93	2,361	543	163	22,825	4,435	30,327
Other Europe	1985–87	63	80	9	554	2,734	3,440
	1988–90	2,118	1232	898	5,620	19,630	29,498
	1991–93	1,711	392	919	1,783	20,978	25,783
Total sellers	1985–87	1,402	1,014	3,769	19,361	3,466	29,012
	1988–90	16,851	5,721	11,637	53,080	27,293	114,582
	1991–93	16,270	12,091	5,834	25,461	29,861	89,517

Source: Based on Smith and Walter (1994).
Note: differences in totals are due to rounding.

Table 10.6.   Shares of intra-European M&As, by country

(proportion of total M&As in percentages)

Country of buyer company	Period	Country of seller company					
		France	Germany	Italy	UK	Other Europe	Total buyers
France	1985–87	3.7	0.0	1.0	0.4	0.0	5.1
	1988–90	10.6	0.8	1.4	3.5	3.0	19.2
	1991–93	12.4	3.0	0.9	0.3	2.9	19.6
Germany	1985–87	0.5	2.7	1.0	0.7	0.5	5.4
	1988–90	0.4	2.1	0.3	1.1	0.8	4.8
	1991–93	0.2	9.0	0.0	0.6	1.7	11.5
Italy	1985–87	0.0	0.1	10.8	0.0	1.2	12.2
	1988–90	0.4	0.4	7.5	0.0	0.4	8.7
	1991–93	1.0	0.4	4.3	0.0	0.4	6.1
UK	1985–87	0.4	0.4	0.1	63.7	0.8	65.4
	1988–90	1.5	0.6	0.2	36.7	2.5	41.5
	1991–93	2.6	0.6	0.2	25.5	5.0	33.9
Other Europe	1985–87	0.2	0.3	0.0	1.9	9.4	11.9
	1988–90	1.8	1.1	0.8	4.9	17.1	25.7
	1991–93	1.9	0.4	1.0	2.0	23.5	28.8
Total sellers	1985–87	4.8	3.5	13.0	66.7	11.9	100.0
	1988–90	14.7	5.0	10.2	46.3	23.8	100.0
	1991–93	18.2	13.5	6.4	28.7	33.4	100.0

Source: Based on Smith and Walter (1994).
Note: Differences in totals are due to rounding.

Table 10.7.   Number of M&As over time, by geographical category

Period	National	Intra-EC	EC-international	International-EC	Extra-EC	Total
1987/88	2,110	252	499	160	114	3,135
1988/89	3,187	761	659	447	310	5,364
1989/90	3,853	1,122	655	768	356	6,754
1990/91	3,638	947	550	729	376	6,240
1991/92	3,720	760	497	605	326	5,908
1992/93	3,004	634	537	656	381	5,212

Source: European Commission (1993) based on AMDATA.
Note: Differences in totals are due to rounding.

Table 10.8.   Distribution of M&As over time, by geographical category

(figures are percentages of total)

Period	National	Intra-EC	EC-international	International-EC	Extra-EC	Total
1987/88	67.3	8.0	15.9	5.1	3.6	100
1988/89	59.4	14.2	12.3	8.3	5.8	100
1989/90	57.0	16.6	9.7	11.4	5.3	100
1990/91	58.3	15.2	8.8	11.7	6.0	100
1991/92	63.0	12.9	8.4	10.2	5.5	100
1992/93	57.6	12.2	10.3	12.6	7.3	100

Source: European Commission (1993) based on AMDATA.
Note: Differences in totals are due to rounding.

When the above figures are presented as percentages, an interesting picture emerges (see Table 10.8). Of most interest to our present enquiry is the dramatic doubling of intra-EC M&As, from only 8% of the total in 1987/88 to a peak of 16.6% only two years later. This level of growth has been matched only by the boom in non-EC firms' acquisitions of EC enterprises, which rose from 5.1% to 11.4% over the same two-year time period, and has consistently remained above 10%.

The evidence here clearly points to heightened locational advantages for the EC, as the share of all M&As accounted for by cross-border acquisitions of EC firms (category II plus category IV) rose from 13.1% to 24.8%. In contrast, this evidence suggests that the implementation of the SM does not seem to have enhanced the ownership advantages of EC firms relative to their non-EC competitors. In absolute terms, the number of extra-EC firms acquired by EC-based

firms (category III) has increased by only 38 transactions in this six-year period, while its share of all M&As fell from 15.9% to only 10.3%.

Sectoral analysis could suggest that some of the 'sensitive sectors' identified earlier did experience even more dramatic growth in intra-EC and extra-EC M&A activity in the run-up to 1992. Again, however, we have the familiar problem of insufficient sectoral disaggregation, with data only available at the one-digit SIC code level. This makes it difficult to correlate the figures from AMDATA with the NACE three-digit sensitive sectors identified in *European Economy* (Buigues, Ilkovitz and Jacquemin, 1990). Nevertheless, we have attempted one such exercise below for the metals/engineering/cars sector, focusing on intra-EC transactions and international acquisitions of EC firms.

Table 10.9.   Distribution of M&As over time, by geographical category, for the metals/engineering/cars sector

Period	Intra-EC		International-EC		Total
	Number	% of total	Number	% of total	(All M&As)
1987/88	50	8.0	37	5.9	624
1988/89	160	15.1	102	9.6	1,058
1989/90	178	13.3	208	15.5	1,338
1990/91	182	14.9	178	14.5	1,225
1991/92	169	13.8	176	14.4	1,223
1992/93	123	11.8	136	13.0	1,043

Source: European Commission, *Annual Report on Competition Policy*, 1993 (based on AMDATA).

Table 10.9 suggests that even this crudely-defined sector was involved in more M&A activity with an EC dimension than the all-industry average presented in Table 10.8. This appears to support the proposition that these sectors are 'sensitive' to the effects of the single market programme and have responded by consolidating and restructuring.

Nagesh Kumar (1994) identifies a two-stage process in response to the SMP. First, consolidation tends to take place at the national level to create what he calls 'champions' that can compete across the whole EC. Examples here include the merger of Montedison with Ferruzi Agricola Finanziaria to create one of Italy's largest conglomerates, and the Siemens-Nixdorf merger in the German computer industry.

The second stage is the emergence of pan-European enterprises that are globally competitive with their Triad MNE rivals. The Anglo-French power equipment firm GEC-Alsthom now operates worldwide, as does Carnaud-MetalBox in the packaging sector, whose holdings now include 28 subsidiaries from Germany, France, Spain and Italy. Allied Lyons of the UK and Carlsberg of Denmark have merged their operations, as have (more controversially) Britain's Rover Group and Germany's BMW.

Corporate mergers and restructuring are not limited to the manufacturing sector. Germany's Deutsche Bank has built up a pan-European financial services group that includes Banco

Commercial (Italy), Transatlántico (Spain), Antoni Hacker (Austria) and Morgan Grenfell (UK). Other European banks, including Crédit Lyonnais of France, the Netherlands' ABN-AMRO and the UK's National Westminster, are following the same trend.

Tables 10.10 and 10.11 were prepared by Kumar from the European Commission's *Annual Report on Competition Policy* (1991), and provide an indication of incidence of corporate integration across different broad industries and services through various means, including M&As of majority holdings, acquisitions of minority holdings and the formation of joint ventures. Table 10.10 gives the absolute numbers of such transactions, while Table 10.11 indicates the share in percentage terms accounted for by each industrial sector.

From analysis of the tables, Kumar concludes that chemicals, food and beverages, electrical and electronic engineering, paper and wood products, construction, mechanical engineering and machine tools are the industries that have undergone the most restructuring in the period mid-1987 to mid-1991. These are all 'sensitive' sectors, and the Kumar evidence therefore provides a convincing link between the implementation of the SM and growth of M&A activity as one aspect of the shift in FDI flows.

Table 10.10. Sectoral distribution (by number of transactions) of M&As and joint ventures formed in the EC, 1987/88 to 1990/91

		M&As of majority holdings	Acquisitions of minority holdings	Joint ventures formed	Total
Industries	Food and drink	300	88	40	428
	Chemicals, fibres, glass, rubber	440	72	117	629
	Electrical and electronic office equipment	179	94	99	372
	Mechanical engineering, and machine tools	170	36	33	239
	Computer and data processing equipment	16	6	14	36
	Metals and metal products	186	64	51	301
	Vehicles and transport equipment	82	43	52	177
	Paper and wood products	223	93	42	358
	Extractive industries	63	41	11	115
	Textiles, clothing and footwear	59	27	11	97
	Construction	158	80	25	263
	Other manufacturing industries	76	18	28	122
	Total	**1,952**	**662**	**523**	**3,137**
Services	Distribution	205	79	43	327
	Banking	349	296	100	745
	Insurance	147	122	57	326
	Total	**701**	**497**	**200**	**1,398**
TOTAL		**2,653**	**1,159**	**723**	**4,535**

Source: Kumar (1994), European Commission (1991).

Table 10.11. Sectoral distribution (by percentage share) of M&As and joint ventures formed in the EC, 1987/88 to 1990/91

		M&As of majority holdings	Acquisitions of minority holdings	Joint ventures formed	Total
Industries	Food and drink	11.3	7.6	5.5	9.4
	Chemicals, fibres, glass, rubber	16.6	6.2	16.2	13.7
	Electrical and electronic office equipment	6.7	8.1	13.7	8.2
	Mechanical engineering, and machine tools	6.4	3.1	4.6	5.3
	Computer and data processing equipment	0.6	0.5	1.9	0.8
	Metals and metal products	7.0	5.5	7.1	6.6
	Vehicles and transport equipment	3.1	3.7	7.2	3.9
	Paper and wood products	8.4	8.0	5.8	7.9
	Extractive industries	2.4	3.5	1.5	2.5
	Textiles, clothing and footwear	2.2	2.3	1.5	2.1
	Construction	9.7	6.9	3.5	5.8
	Other manufacturing industries	2.9	1.6	3.9	2.7
	Total	**73.6**	**57.1**	**72.4**	**69.2**
Services	Distribution	7.7	6.8	5.9	7.2
	Banking	13.2	25.5	13.8	16.4
	Insurance	5.5	10.5	7.9	7.2
	Total	**26.4**	**42.9**	**27.6**	**30.8**
TOTAL		**100.0**	**100.0**	**100.0**	**100.0**
(Numbers)		2,653	1,159	723	4,535

Source: Based on Kumar (1994), European Commission (1991).

There seems to be a general consensus in the literature that European economic integration tends to increase FDI within and into the area (and, with a lag, it increases outward FDI from the region as well). As discussed earlier, the effects of the single market on both trade and investment creation and diversion will be highly country- and industry-specific.

In some instances, MNEs are likely to be affected differently to indigenous firms. The extent to which intra-regional MNE activity will increase as a result of integration will depend on the competitiveness of MNEs *vis-à-vis* uninational firms (Dunning, 1994). The extent to which FDI in the EU – and in individual EU countries – is increasing *vis-à-vis* domestic investment is determined by the relative competitiveness of the two groups of investment. Given that the cross-border transaction costs associated with NTBs are relatively higher than those associated with tariff barriers, MNEs may have an advantage over non-MNEs because they are better able to integrated and co-ordinate complementary activities. As a consequence, they might be expected to be affected more by the SMP than by Mark I integration. In other words, FDI is one of the main vehicles through which pan-EC firms gain from the completion of the single market.

Theory and empirical evidence both suggest that an important strategic response to trade liberalization is to increase FDI generally, and in the form of M&As in particular (Eaton, Lipsey and Safarian, 1994a). It is important to recall that although the growth in M&As is a worldwide phenomenon which reached its most recent peak in the late 1980s, the SMP has nevertheless provided an additional stimulus, as firms across the EC attempt to improve or maintain their market positions in preparation for the stronger competition they are likely to experience in their own domestic market.

According to Yannopoulos (1992, p.337), in sectors where presence near the customer and knowledge of the local conditions is vital to compete effectively, alliances with local firms, mergers or the building of equity stakes will be the best strategic move to exploit the new opportunities rather than greenfield investment. Yannopoulos goes on to assert that the rising proportion of M&As, in comparison to greenfield, raises important policy questions regarding the strength of competition in the single European market. These concerns are, however, mitigated, insofar as competition among firms in the integrating countries switches from being national to regional, or even global.
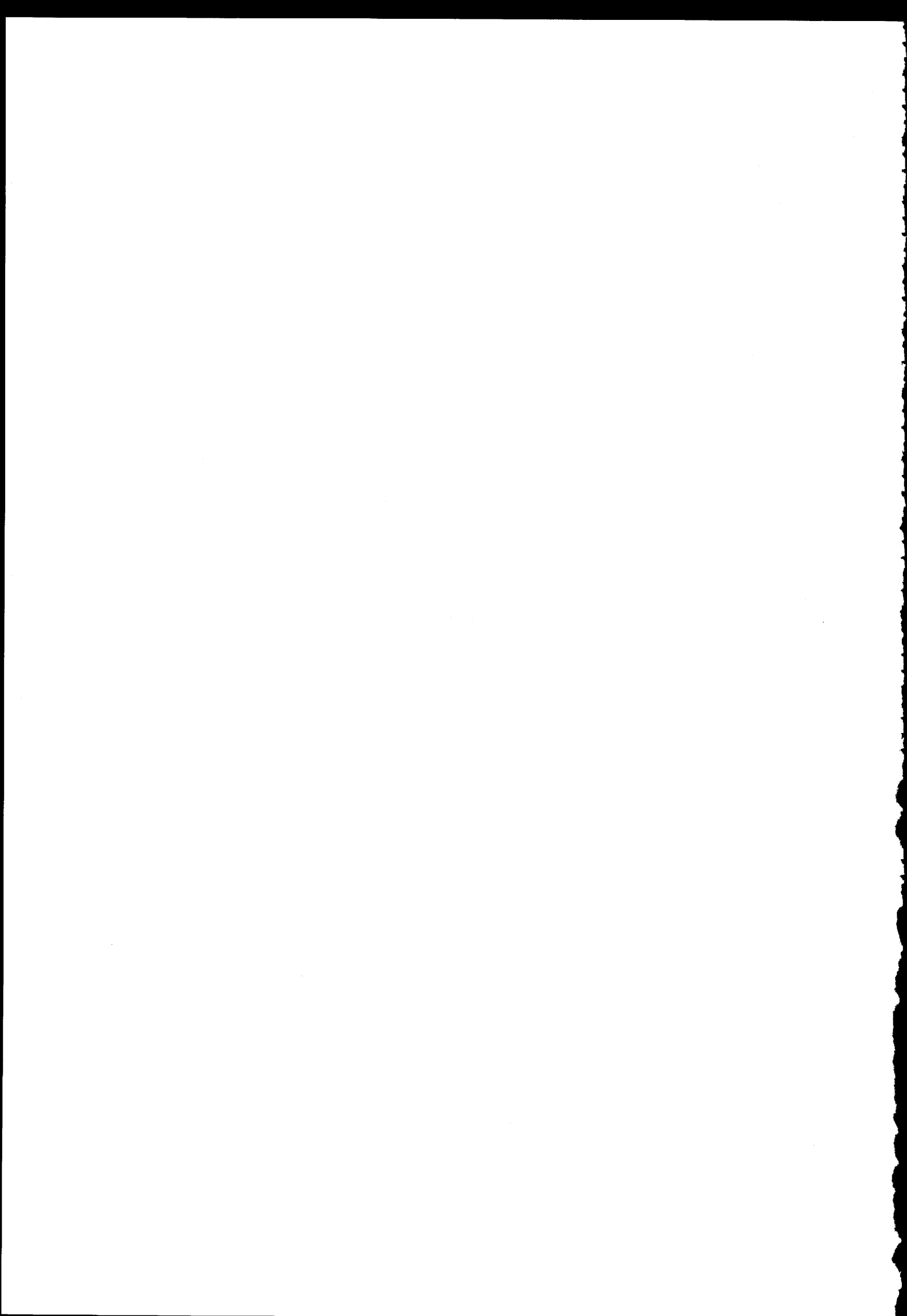
11. Conclusions

11.1. Preface

The main purpose of this report has been to identify and evaluate the impact of the provisions of the single market on FDI in the EU – and more especially intra-EU FDI flows.

Any rigorous assessment of the effects of regional integration (i.e. a liberalization of intra-regional markets) needs to draw upon three interrelated strands of economic theory, together with some appreciation of the industrial organization and business strategy issues involved. These three strands comprise:

(a)   the theory of regional integration,
(b)   the contemporary theory of international trade which embraces both neo-classical and post-1950 theories of trade,
(c)   the theory of FDI.

Each of the main strands of economic theory predicts broadly similar outcomes following from the liberalization of intra-EU markets, although only FDI theory explicitly claims that different types of FDI will be differently affected by the SM.[61] Since the data available do not normally permit us to identify these different types, the results of our analysis – and particularly the econometric analysis – are ambivalent. Moreover, the sectoral breakdown of the data all too rarely allow us to make precise quantitative assessments of the effects of the SM, which, for the most part are sector-specific, as predicted by Buigues et al. (1990).

In the course of our research, it was therefore decided to use a range of approaches to evaluate the significance of the SM on FDI. These were:

(a)   An *ex post* analysis of empirical evidence, by which the pattern of FDI in the EU or in particular countries since the announcement of the SMP could be compared with some alternative situation, e.g. that which existed prior to the programme, or that existing in non-EU countries. Also, since the SMP impacts are likely to be quite industry-specific, it is relevant to compare the changing sectoral distribution of FDI (and/or trade) in the EU or particular EU countries, with the extent to which such sectors are likely to be affected by the SM.
(b)   Formal econometric testing, in which the significance of a number of explanatory variables, affecting FDI (as identified in the literature plus an SM variable) were evaluated by a variety of modelling exercises.[62] It was then anticipated that the *antimonde* situation would be captured by the significance (or otherwise) of the SM variable.
(c)   A review of the business literature and the undertaking of a number of case studies of particular MNEs, to gain more qualitative evidence of the strategic reactions of firms to the liberalization of intra-EU markets.

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[61] See Chapter 3 for more details.

[62] Described in Appendix B.

While regional integration and globalization are distinct spatial concepts, it is difficult to perceive how globalization could have had the consequences it has in Europe if the SMP (or something like it) had not come about. This is particularly the case in sectors which are most integrated in their international operations, although it is worth recalling that even the most globally-oriented MNEs tend to practice regional, rather than global, production strategies (UNCTAD, 1993b).

Almost all studies point to the fact that the main dynamic impact of the SM on FDI flows is through its effects on other variables affecting FDI – and noticeably market size, income levels, the structure of economic activity and agglomeration economies. *Inter alia*, this makes it very difficult – and indeed of questionable value – to consider the SM (or a proxy for the same) as an independent variable – except, perhaps, in the years immediately following 1985, when FDI was more influenced by expectations of the programme's outcome, i.e. prior to dynamic effects coming on stream. But, even considering the SMP as an independent variable, and the difficulties associated with its measurement, it is generally clear that it has stimulated both extra- and intra-EU FDI.

11.2. *Ex post* analytical examination

Chapter 5 showed that across all industries, FDI has risen faster than trade in the period after the announcement of the SM. However, analysing AMDATA data on M&As as a proxy for FDI showed that an increase in intra-EU trade relative to that of intra-EU foreign-owned production had occurred in some of the 'sensitive sectors'. The AMDATA data also suggest that M&A activity in low technology sectors (such as textiles) is more likely to be concentrated in domestic transactions, whereas high technology sectors such as pharmaceuticals have a greater share of cross-border or extra-EU transactions.

Other data on US FDI in, and exports to, Europe shown in Chapter 5 suggest that the sales of US affiliates in most of the sectors predicted to be affected by the SM have increased more rapidly than have sales by affiliates in non-sensitive sectors. Yet liberalization of intra-EU markets did not come at the expense of lost extra-EU investment – quite the contrary: overall, over the period 1982 to 1992, while US manufacturing exports to US affiliates in Europe rose by 127%, US sales of manufacturing subsidiaries in Europe rose by 153%. What of trade-supporting FDI, e.g. FDI in wholesale trade and warehousing activities? If the SM leads to an increase in trade relative to FDI, one might expect that the rate of growth of FDI in wholesaling activities would increase at a faster rate than FDI in all sectors. This it did by 140% for wholesaling, as opposed to 94.2% for all industries over the period 1982–91.[63]

However, the fastest rate of growth in FDI relative to that of exports from the parent country has been from Japan. Chapter 9 also noted that this investment was initially heavily focused on the UK in particular, but that it seems to be broadening out as Japanese affiliates matured and developed European networks. By contrast, the location of US FDI already closely matched its distribution of exports, and affiliates tended to supply local rather than European markets.

A final set of data on trade, domestic production and foreign ownership in the leading public procurement sensitive sectors in Chapter 5 showed that the intra-EU trade intensity has risen

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[63] Provisional figure based on gross product of US affiliates in the EUR-12.

faster than the extent of foreign participation[64] in these sectors. There is also some suggestion that the Spanish economy has most notably improved its related comparative trading advantage in the more traditional (low-technology) procurement-intensive sectors, compared to the French and German economies, which have performed better in one or other of the high technology sectors.

Eurostat data, supported by national sources on FDI flows, permit only very tentative conclusions to be drawn as to whether the SM has led to a greater geographical concentration (agglomeration of FDI activity) of high-technology sectors in the EU. In the case of financial services there would appear to have been a switch in the direction of the concentration of FDI from Germany to France, and in the motor vehicle sector there has been a more dramatic reversal of the UK's ability to attract inward FDI – both from outside, and more recently from inside, the EU (Chapter 6). Spain has attracted more than its average share of FDI in the auto-assembling sector. In the electrical sector, there is some evidence that the higher value part of the value chain has become increasingly concentrated in Germany – and, more lately, France.

Concerning inbound direct investment from the US, US Department of Commerce data show fairly clearly that the fastest rate of growth in FDI stock has occurred in the 'sensitive' sectors. FDI in these sectors has continued to be concentrated in the four 'core' EU countries (in 1991 these countries accounted for 93.9% of the US FDI stock compared with 76.2% in 1982). However, the most impressive rise in the share of FDI directed to the SM 'sensitive' sectors has occurred in Spain, from 4.8% in 1982 to 6.2% in 1991, although its share of all industry US FDI has remained the same.

It is a moot point whether the incoming FDI is bringing high value-added employment and technology to the EU, or low-level, tariff-jumping assembly work. A useful measure (albeit imperfect) of the quality of FDI in the EU is the patenting activity of EU-based affiliates of MNEs. There has been a significant increase in the share of patenting by EU based subsidiaries of EU MNEs between 1969–72 (27.8%) and 1987–90 (34.3%). Expressing the data rather differently, the share of EU-based MNEs in all foreign-owned (i.e. non-domestic) patenting activity in the EU rose from 32.0% in 1969–72 to 39.3% in 1987–90. The increase in the share of patents registered by foreign affiliates in the EU was particularly noticeable in the electrical equipment and computer sectors.[65]

Finally our analysis has suggested that the SM has had an ambivalent impact on the formation and regional distribution of inter-firm non-equity agreements. Since the announcement of the SMP the share of cross-border intra-EU alliances has fallen from 44.0% of all cross-border alliances (between 1980 and 1986) to 41.7% (between 1987 and 1993), but the concentration of strategic partnering among the core EU countries and the Netherlands[66] (whose firms, between them, accounted for 85% of all co-operative agreements) has risen. Other evidence suggests that EU-based MNEs have shown an increasing preference for FDI-related alliances since the mid-1980s, while partnerships involving non-EU firms have shown a decreasing

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64 As assessed by the percentage of output accounted for by foreign affiliates.

65 See interim report (Section 5.2) for fuller exposition.

66 Since strategic alliances (especially in high-technology sectors) tend to be concluded between large firms which are mostly based in these countries, which are home countries.

since the mid-1980s, while partnerships involving non-EU firms have shown a decreasing preference for equity alliances. These findings are consistent with the assumption that lowering monitoring costs across intra-EU borders would reduce the need for hierarchical control of core assets among EU firms, but not between EU and non-EU firms.

11.3. Econometric analysis

The results of our econometric analyses indicate that there is some evidence that UK and German FDI in the EU since 1987 has risen more rapidly than it might have been expected to do in the absence of the SM (Chapter 8). This conclusion takes account of the sectoral distribution of UK and German FDI in the EU. By contrast, a longitudinal study of US FDI in the six original member countries of the EU, which is not disaggregated by sector, shows a negative (though insignificant) relationship between a dummy EU variable and FDI flows (Chapter 9).

FDI within the EU (i.e. intra-EU FDI) has risen more rapidly than investment outside the EU as a result of the SM. For Germany, there is evidence that investment has been diverted from both the US and Austria into the EU since 1987. For the UK, there is evidence that FDI has been diverted from the US since 1990, but not over the period 1987–92.

For both countries, there is clear evidence that the SM has had a significantly greater impact on intra EU-FDI in services – particularly in financial services – than in manufacturing (Chapter 7). There is some weak statistical evidence that German FDI in the EU chemicals and mechanical engineering sectors may have been lower that might have been expected since 1987, perhaps as German firms rationalize production in their home economy so as to exploit economies of scale. We hesitate, however, to draw this conclusion, given the oft-cited willingness of German firms to relocate overseas to lower production costs.[67]

Our statistical analysis on the intra-EU regional distribution of FDI leads to inconclusive results. There is some suggestion that German FDI has been lower in France and Belgium than might have been expected, while it has been higher in Spain and Portugal than expected. To this extent, the evidence for investment dispersion seems stronger than that for investment concentration or agglomeration[68] (Chapter 6). On the other hand, the largest beneficiaries of the SM appear to be Italy and the UK. While parts of both the UK and Italy are close to the geographical core of the EU, both contain areas at the periphery – in which real unit labour costs are below the average for the SM as a whole. Without a further sub-national analysis of the FDI data, which is beyond the scope of this study, the statistical findings on the dispersion/concentration debate are best regarded as inconclusive.

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[67] A survey of 10,000 German firms by Deutsche Industrie-und Handelstag (DIHT) reported in the *Financial Times*, 24.11.1995, found that of German firms already investing overseas, 39% intended to increase outlays in 1996, as opposed to only 17% planning a reduction. The same survey found that outward German FDI more than doubled over the first six months of 1995 to DM 28 billion and was more than four times the level of inward FDI over the same period (DM 6.4 billion).

[68] Other research, e.g. that of Braunerhjelm and Svenson (1995), suggests that agglomeration (as measured by the share of the employment in particular industrial sectors in Sweden to that of all manufacturing activity) significantly affects the sectoral distribution of Swedish FDI.

Econometric analysis undertaken for this project has also refuted the notion that the SM would simply leave a 'blip' in intra-EU flows of FDI. Indeed, over the period from 1987 to 1992, when the SMP was first announced, the significance of the SM variable in our regressions seems to have steadily increased. The impact of the single market on the level of intra-EU FDI appears, therefore, to have strengthened over time, with no evidence to suggest it has since diminished.

11.4. Strategic analysis

The results of our strategy-related studies indicate that the responses of firms to the SM – which have directly and indirectly affected the level, concentration and location of FDI within the EU – vary according to industry, country of origin and firm-specific characteristics, and according to the particular elements of the SMP. However, a review of the empirical literature on the effects of the SM on strategy (including a study of 51 large MNEs conducted by EAG in 1993), the Commission's own survey of EU businesses and detailed analysis of M&A data permit some observations.

We considered two generic strategies, namely a cost reducing and a product diversification strategy,[69] as identified by Porter, and Buigues and Jacquemin. We then examined a variety of more specific actions which firms might take in pursuit of these strategies, and how in time these might affect FDI, and more specifically the extent to which firms perceived the SM had affected these strategies. From our research we were able to draw the following conclusions, evidence for which is contained in Chapter 10.

(a)   The main impetus of the SM with regard to the strategy of MNEs in EU countries has been via increased cross-border competition.

(b)   This has led firms to increase the co-ordination of the value-added activities among their EU subsidiaries, which has been done primarily through engaging in more intra-EU FDI rationalization (which is leading to more intra-industry and intra-firm trade). In turn, such rationalization has led to a greater exploitation of scale and scope economies, and the relocation of production according to:
   (i)   technological capability (in the case of high-technology sectors), and
   (ii)   differential factor costs (in the case of resource-intensive sectors) within the EU.

(c)   It would appear that the SM is inducing only a relatively small amount of FDI restructuring to lower production costs, except where there is evidence of a location shifting strategy on the part of MNEs.

(d)   It would appear that intra-EU FDI intended to promote vertical integration has not been substantially affected by the SM. However, the SM appears to have induced a growth in strategic alliances and partnerships (possibly as an alternative to FDI). By contrast, the SM does not as yet appear to have led to any substantial divestment of EU operations.

(e)   There is fairly strong evidence that the SM has been a powerful influence in encouraging cross-border M&As and strategic alliances.

It would therefore appear that the SM has become an increasingly important influence on the intra-EU FDI strategies of firms since the mid-1980s. However, the Commission's own survey

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[69]   Which coincidentally goes alongside more specialization of value added activities within the EU.

found a much higher level of indifference, when FDI was not seen as being greatly affected by the SM. Of the other factors influencing company strategies, the general movement towards liberalization and deregulation of international markets, and the changing real costs of producing both within the EU and as between different countries in the EU, were two variables consistently perceived to be significant or very significant.

11.5. Summary

We have used most of the statistical evidence at our disposal to examine changes in the extent and pattern of extra- and intra-FDI in the EU since the early 1980s. It is reasonably clear that FDI in the EU has risen faster than in most other parts of the world (save parts of East Asia), but there is little reason to suppose that this has been at the expense of non-EU FDI.

Within the EU, there have been some discernible changes, both in industrial structure and in the geographical distribution of economic activity. Of the former, the relative growth of FDI in technology- and information-intensive (especially in service-related activities) is perhaps the most significant trend – although this is by no means confined to Europe. Of the latter, the accession of Greece, Portugal and Spain – particularly Spain – has led to a modest decentralization of all except the most technology- and information- intensive activities from the six core EU countries.

Our research also confirms that the growth of intra-EU and Japanese FDI has outpaced that of the US over the last decade or more, but, of course, both had much less FDI in the EU in 1980 than did their US counterparts. However, whereas the proportion of goods exported from US subsidiaries in the EU has remained about the same since 1982, other forms of intra-EU trade have risen quite rapidly. When trying to isolate the significance of the SM, our conclusions must be tentative.

It is clear that the effects of SM are industry-specific, and there is some evidence that, as hypothesized by trade and FDI theory, extra-EU FDI has increased more in sensitive than in non-sensitive sectors since the early 1980s – and equally important – more in these sectors than elsewhere in the developed world. Our study also reveals that, without the SM, both UK and German FDI elsewhere in the EU would have been less – and particularly so in some of the more sensitive sectors, e.g. financial services.

Our research has examined the validity of several propositions which emerge from trade and FDI theory. We have suggested that there is only limited evidence that the geographical concentration of economic activity has increased, even in the sectors which benefit from the economies of agglomeration and substantial plant economies of scale.

We have found that there is a complementarity between FDI and trade in most of (but not all) industrial sectors, and that the SMP has done nothing to lessen this complementarity. However, the FDI/trade relationship has been seen to be more oriented towards trade in the technology-intensive sectors than in the less technology-intensive sectors.

A substantial proportion of the extra- and intra-EU FDI over recent years has taken the form of M&As, and part of the rationale for this has been to acquire strategic assets to advance the regional and/or global competitiveness of the acquiring firm. Although such M&As are essentially a global phenomenon, those involving EU firms as sellers have undoubtedly been facilitated by the SM. The result of these M&As on the intra-EU location (as distinct from the

ownership) of economic activity is ambiguous, but, in the majority of cases, there has been some restructuring of activity of the acquired firm, and this, as well as the distinctive sourcing and exporting policies of the acquiring firms, may well affect both intra- and extra-EU trade.

A final observation is that, while for some sectors (e.g. financial services) and some foreign investors (e.g. US MNEs) the effects of the SMP on their FDI in the EU have already become apparent, for a significant number of other sectors and countries, the full effects of the SM have yet to manifest themselves. As Europe emerges from recession, the full potential of the SM, in terms of creating pan-EU companies capable of competing globally, may still be realized.

The following best encapsulate the key findings of our study:

(a)   Flows of FDI in the late 1980s soared worldwide. This phenomenon is associated with the globalization of business, technological advance and general government liberalization, of which the SM was a significant part in the European context.

(b)   The MNE has emerged as the dominant actor in the global economy, engaging in the cross-border production of goods and services to serve markets worldwide. It achieves this through an integrated strategy of exports and local sales by affiliates established or expanded by FDI. The rapid growth of intra-firm trade between affiliates underlines this complementarity between trade and investment.

(c)   The SM responds to and facilitates this process. Within the expanded marketplace there are increased opportunities and threats for firms based both inside and outside the EU. The appropriate strategic response (and how this manifests itself in FDI) is contingent upon highly sector-specific, country-specific and even firm-specific variables.

(d)   The EU's share of worldwide FDI inflows grew to more than half during the implementation of the SM. The US and Japan were significant in the early stages, but intra-EU flows (from one Member State to another) are now accounting for the majority of FDI into Member States. The SM has contributed positively to the intra-EU FDI of UK and German MNEs, who are the major EU investors. EFTA countries have declined in importance, but some of the dynamic Asian economies (such as South Korea) are set to become major investors.

(e)   It appears that concerns that the SM would lead to a concentration of economic activity in the 'core' countries of the EU are not being fulfilled. An implication of this is that firms may not be fully exploiting potential economies of scale in the expanded marketplace. Similarly, there has been only limited dispersion to the 'peripheral' countries which enjoy certain cost advantages.

(f)   FDI is strongly cyclical in nature and, after slowing in the early 1990s, is now recovering strongly as Europe comes out of recession. If the SM has contributed to this recovery (and thereby increased incomes) it will also have had an indirect impact on FDI flows.

APPENDIX A

FDI trends in the EU

For our purposes EU countries are classified into two groups based on the average GNP per capita for the EU in 1992 (US$ 17,438). Group I, the 'high income' group, consists of EU countries with an above-average GNP per capita, namely Belgium/Luxembourg (US$ 20,880), Denmark (US$ 26,000), France (US$ 22,600), Germany (23,030), Italy (US$ 20,460), the Netherlands (US$ 20,480), and the UK (US$ 17,990); group II consists of the 'medium income' countries with below-average GNP per capita, namely Greece (US$ 7,290), Ireland (US$ 12,210), Portugal (US$ 7,450), and Spain (US$ 13,970). This classification would seem appropriate also in the light of the distribution of GDP.

Table A.1.   European Union country features

	GNP per capita 1992 (US$) (EU average: US$ 17,438)	Distribution of GDP (%)			Population	
		Agriculture	Industry/ manufacturing	Services etc.	Population density (inhab./sq.km)	Urban population (as % of total)
Belgium/ Luxembourg	20,880	2	30(20)	68	323	96
Denmark	26,000	4	27(17)	69	121	85
France	22,600	3	29(19)	68	104	73
Germany	23,030	2	39(26)	60	226	86
Italy	20,460	3	32(20)	65	192	70
Netherlands	20,480	4	29(17)	67	441	89
UK	17,990	2	37(20)	62	236	89
Greece	7,290	17	27(14)	56	78	64
Ireland	12,210	10	10(4)	80	50	58
Portugal	7,450	9	37(n.a)	54	107	35
Spain	13,970	5	9(18)	86	77	79
European Union	17,438					

Note: Figures are for 1992, except for distribution of GDP figures in the case of the UK (1989), Greece (1991), Portugal (1989) and Spain (1989).

Source: *World Development Report* (World Bank), 1994, 1993, 1992, 1990, 1986, 1983, 1982.

Table A.2.   Shares of outward FDI stock of selected investors by host country/region, 1980–90

Investor country	Year	Host country/region						
		EU	OWE	US	Canada	Japan	RoW	Total
European Union								
Belgium/ Luxembourg	1980	58	8	-5	1	2	36	100
	1988	57	10	-1	1	1	32	100
Denmark	1982	46	14	23	0	0	17	100
	1991	57	20	8	3	2	10	100
France	1982	37	8	34	-2	1	22	100
	1991	59	7	17	2	0	15	100
Germany	1980	39	10	22	3	1	26	100
	1992	52	11	22	2	2	11	100
Italy	1980	43	15	9	0	0	33	100
	1992	62	11	8	1	1	17	100
Netherlands	1984	30	6	42	4	1	16	100
	1992	45	9	30	na	1	15	100
UK	1981	21	2	28	7	1	42	100
	1992	26	3	37	5	1	28	100
Portugal	1985	39	0	18	0	0	43	100
	1988	55	0	11	0	0	33	100
Spain	1984	na	na	na	na	na	na	na
	1992	56	4	9	0	0	31	100
Other								
US	1980	37	7	-	20	3	31	100
	1990	41	7	-	16	5	30	100
Canada	1980	16	2	62	-	0	19	100
	1990	20	2	61	-	1	17	100
Japan	1980	11	1	24	3	-	61	100
	1990	18	1	42	2	-	37	100

OWE = Other Western Europe, na = not available.

Source: Based on UNCTAD (1994), Banque de France (1994), Deutsche Bundesbank (1994), Denmarks National Bank (1994), De Nederlandsche Bank (1995), and OECD figures.

Table A.3.   Shares of outward FDI stock of selected investors by EU host country/region, 1980–90

Investor country	Year	Host country/region											
		B/L	DK	F	D	I	NL	UK	GR	IRL	P	E	EU
European Union													
Belgium/ Luxembourg	1980	-	0	33	15	3	3	2	0	0	0	1	58
	1988	-	0	23	6	2	12	12	0	1	0	1	57
Denmark	1982	7	-	8	5	1	7	13	2	0	0	2	46
	1991	0	-	5	8	1	5	26	0	2	1	2	57
France	1982	6	0	-	6	6	2	6	0	0	1	8	37
	1992	10	0	-	7	5	20	9	0	1	1	7	59
Germany	1980	10	1	10	-	3	6	4	1	0	0	4	39
	1992	12	1	8	-	4	8	8	0	5	1	4	52
Italy	1980	na	na	na	na	-	na	na	na	na	na	na	na
	1992	19	0	10	6	-	13	7	0	0	1	6	62
Netherlands	1984	7	0	5	8	1	-	5	0	1	0	2	30
	1992	12	1	8	9	1	-	9	0	1	1	3	44
UK	1981	2	1	4	5	1	4	-	0	3	0	1	21
	1992	3	1	5	3	2	8	-	0	2	1	2	26
Portugal	1985	4	0	24	1	0	0	8	0	0	-	1	39
	1988	6	0	35	1	1	0	7	2	0	-	4	55
Spain	1984	na	na	na	na	na	na	na	na	na	na	-	na
	1992	6	0	7	2	6	13	10	0	1	10	-	56
Other													
US	1980	3	1	4	7	2	4	13	0	1	0	1	37
	1990	3	0	4	7	3	5	15	0	2	0	2	41
Canada	1980	0	0	1	1	0	1	11	0	1	0	1	16
	1990	1	0	2	1	0	2	na	0	1	0	0	20
Japan	1980	1	0	1	1	0	1	na	0	0	0	0	11
	1990	2	0	1	2	0	4	7	0	0	0	1	18

na = not available.
Note: Totals may not be exact due to rounding.
Source: Based on UNCTAD (1994), Banque de France (1994), Deutsche Bundesbank (1994), Denmarks National Bank (1994), De Nederlandsche Bank (1995), and OECD figures.

Table A.4.   Shares of intra-EU outward FDI stock of EU investors by EU host country/region, 1980–92

Investor country	Year	Host country/region											
		B/L	DK	F	D	I	NL	UK	GR	IRL	P	E	EU
European Union													
Belgium/ Luxembourg	1980	-	0	57	26	5	5	4	0	0	0	2	100
	1988	-	1	40	11	3	22	21	0	1	0	1	100
Denmark	1982	15	-	18	11	3	16	29	3	0	0	5	100
	1991	0	-	10	14	1	9	46	0	4	2	4	100
France	1982	17	0	-	17	18	7	16	1	1	2	22	100
	1992	17	0	-	11	8	33	15	0	1	2	12	100
Germany	1980	25	2	27	-	8	14	10	1	1	1	10	100
	1992	24	1	15	-	8	16	15	1	10	1	9	100
Italy	1980	na	na	na	na	-	na	na	na	na	na	na	na
	1992	30	0	16	10	-	21	11	0	0	1	9	100
Netherlands	1984	23	1	18	27	4	-	18	0	3	0	6	100
	1992	27	2	17	21	3	-	20	0	2	2	7	100
UK	1981	9	2	18	26	7	19	-	0	12	2	5	100
	1992	10	2	21	10	6	30	-	1	9	3	9	100
Portugal	1985	9	0	62	3	1	0	20	1	0	-	3	100
	1988	11	0	63	1	1	0	13	3	0	-	8	100
Spain	1984	19	1	9	4	6	2	28	0	2	30	-	100
	1992	11	0	13	4	11	23	18	0	1	18	-	100
Other													
US	1980	9	2	12	19	7	10	35	0	3	0	3	100
	1990	6	1	10	16	8	13	38	0	4	0	4	100
Canada	1980	2	2	7	6	3	7	65	1	6	1	2	100
	1990	2	0	9	5	2	9	66	1	5	1	2	100
Japan	1980	10	0	10	13	0	8	51	0	4	0	4	100
	1990	13	0	8	8	2	23	41	0	1	0	3	100

na = not available.
Note: Totals may not be exact due to rounding.
Source: Based on UNCTAD (1994), Banque de France (1994), Deutsche Bundesbank (1994), Denmarks National Bank (1994), De Nederlandsche Bank (1995), and OECD figures.

As a host for FDI from other European Union countries, Belgium/Luxembourg features prominently, receiving major shares from the larger investor countries. The UK's role as a

host for other European Union FDI is small compared with its appeal to non-EU-owned investors. The importance of Benelux can be slightly exaggerated as a result of the presence of holding companies or financial affiliates of firms from other European Union countries. Italian FDI, seeking to circumvent domestic capital controls and the attraction of Luxembourg for the European investments of German (and Japanese) banks, are prime examples (Thomsen and Woolcock, 1993).

The important role of geographical and cultural proximity in intra-European direct investment patterns also emerges from the intensity ratios as presented in Table A.5. Intensity ratios provide us with a more adequate basis for assessing FDI links between individual countries (and/or regions). The ratios compare host counties' shares of FDI; they, furthermore, permit the comparison between the host country's (or region's) importance as a site for FDI from another Member State with its global significance. In the case of Member States, their most intense outward FDI links are with countries they share a common border or cultural or historical ties with. The links of individual EU countries with the European Union as a whole have become more intense since the early 1980s.

Table A.5.   **Intra-EU intensity ratios of selected investors by EU host country/region, 1980–92**

Inv. ctry	Yr	Host country/region											
		B/L	DK	F	D	I	NL	UK	GR	IRL	P	E	EU
B/L	80	-	-0.21	5.07	3.13	1.19	0.55	0.13	0.06	0.16	*	0.91	1.65
	88	-	na	na	na	na	na	na	na	na	na	na	na
DK	82	4.23	-	8.69	0.60	0.59	1.69	0.94	1.51	*	*	2.02	1.31
	91	0.03	-	0.66	0.61	0.18	0.87	2.20	0.10	0.31	1.51	0.33	1.42
F	82	4.33	0.11	-	0.82	3.60	0.64	0.47	0.32	0.52	6.40	7.62	1.00
	92	2.04	0.12	-	0.58	0.87	1.60	0.60	0.15	1.53	1.32	0.82	1.37
D	80	6.16	0.94	1.99	-	1.59	1.36	0.29	0.57	0.61	2.91	3.52	1.06
	92	2.79	0.68	0.84	-	0.80	1.30	0.57	0.31	13.25	0.91	0.58	1.19
I	80	na	na	na	na	-	na	na	na	na	na	na	na
	92	4.10	0.07	1.04	0.62	-	0.96	0.50	0.21	0.38	0.91	0.74	1.52
NL	84	5.72	0.39	1.21	1.65	0.49	-	0.63	0.13	1.26	1.13	1.51	0.89
	92	3.35	1.03	1.04	1.14	0.28	-	0.82	*	2.19	1.33	0.54	1.03
UK	81	1.53	0.74	1.00	0.87	0.92	1.22	-	0.13	4.15	3.47	1.33	0.50
	92	1.08	1.20	1.09	0.48	0.62	2.20	-	0.28	10.49	1.75	0.56	0.58
P	85	2.79	*	5.03	0.22	0.10	*	0.89	0.41	*	-	1.02	1.23
	88	na	na	na	na	na	na	na	na	na	-	na	na
E	84	na	na	na	na	na	na	na	na	na	na	-	na
	92	1.54	0.09	0.87	0.28	1.45	2.25	0.87	0.05	1.62	14.18	-	1.39

na = not available, * = ratios have not been calculated because of negligible values.
Note: Totals may not be exact due to rounding.
Source: Based on UNCTAD (1994), UN World Investment Report (1994), Banque de France (1994), Deutsche Bundesbank (1994), Denmarks National Bank (1994), De Nederlandsche Bank (1995), and OECD figures.

Table A.6   Intensity ratios of selected investors by host region, 1980–92 (based on outward FDI stock)

Investor country	Year	Host country/region						
		European Union	Other Western Europe	North America	US	Canada	Japan	ROW
European Union								
Belgium/ Luxembourg	1980	1.65	2.18	-0.14	-0.31	0.09	0.29	1.26
	1988	na	na	na	na	na	na	na
Denmark	1982	1.31	3.68	0.86	0.86	n.a.	0.01	0.62
	1991	1.42	5.45	0.38	0.36	0.45	0.77	0.40
France	1982	1.00	1.88	1.15	1.99	-0.21	0.11	0.79
	1991	1.37	1.63	0.62	0.72	0.30	0.16	0.49
Germany	1980	1.02	2.44	0.84	1.21	0.25	0.17	0.84
	1992	1.19	2.60	0.79	0.91	0.27	0.84	0.38
Italy	1980	na	na	na	na	na	na	na
	1992	1.52	2.84	0.31	0.37	0.12	0.41	0.59
Netherlands	1984	0.89	1.65	1.19	1.44	0.43	0.15	0.44
	1992	1.03	2.27	0.99	n.a.	n.a.	0.48	0.52
UK	1981	0.50	0.52	1.09	1.43	0.55	0.09	1.25
	1992	0.58	0.80	1.32	1.52	0.65	0.61	0.89
Portugal	1985	1.23	0.04	0.49	0.65	0.01	*	1.27
	1988	na	na	na	na	na	na	na
Spain	1984	na	na	na	na	na	na	na
	1989	1.39	1.02	0.31	0.39	0.06	0.18	1.13
North America								
US	1980	0.60	1.05	0.47	-	1.14	0.26	0.63
	1990	0.73	1.34	0.41	-	1.80	1.74	0.73
Canada	1980	0.45	0.45	2.24	3.63	-	0.06	0.66
	1990	0.45	0.38	1.91	2.44	-	0.40	0.62
Japan	1980	0.30	0.26	0.98	1.44	0.24	-	2.13
	1990	0.38	0.24	1.26	1.54	0.24	-	1.28

na = not available, * = ratios have not been calculated because of negligible values.

Note: Totals may not be exact due to rounding.
Source: Based on UN World Investment Directory (1994), UN World Investment Report (1994), Banque de France (1994), Deutsche Bundesbank (1994), Denmarks National Bank (1994), De Nederlandsche Bank (1995), and OECD figures.

Table A.7.   Inward intra-EU sectoral flows, annual averages and changes, 1984/86–1990/92

		Annual averages			Change (1984/86 = 100)		
		1984–86	1987–89	1990–92	1984–86	1987–89	1990–92
Energy		671	2,216	650	100	330	97
Industries	Agriculture and food	128	1,518	2,456	100	1,186	1,919
	Metallic	11	425	318 (a)	100	3,864	2,891
	Machinery	210	216	914 (a)	100	103	435
	Transport equipment	108	141	1373	100	131	1271
	Electrical, electronics	246	885	1,334	100	360	542
	Chemical industries	412	1,894	931	100	460	226
	Other industries	221	1,596	798	100	722	361
	Total	1,337	6,676	8,908	100	500	608
Building and construction		148	515	186	100	348	126
Services	Finance, banking and insurance	1,977	6,638	12,297	100	336	622
	Trade, hotels, catering	976	1,980	3,314	100	203	340
	Transport and communication	65	224	286	100	345	440
	Real estate	1,321	2,748	2,290	100	208	173
	Other services	26	2,036	3,659	100	7,831	14,073
	Total	4,382	13,625	21,866	100	312	500
TOTAL		19,639	70,019	96,633	100	356	492

Source: Based on Eurostat (1994) figures.

Table A.8. **Changes in the EU's industrial distribution of inward intra-EU FDI flows, 1984–86/1987–92 (annual averages), sensitivity ranking and rank correlation co-efficient**

		Inward flows – million ECU (annual averages)		Change in average. annual flows, 1984–86/1987–92 (%)	Ranking	SMP sensitivity ranking[1]
		1984–86	1987–92			
Industries	Agriculture and food	128	1,987	1,452.3	2	7
	Metallic	11	372	3,281.8	1	10
	Machinery	210	565	169.0	10	4
	Transport equipment	108	757	600.9	3	6
	Electrical, electronics	246	1,110	351.2	6	2
	Chemical industries	412	1,413	243.0	8	3
	Other industries	221	1,197	441.6	4	9
Building and construction		148	351	137.2	11	8
Services	Finance/banking/ insurance	1,977	9,468	378.9	5	1
	Trade, hotels, catering	976	2,647	171.2	9	12
	Transport and communications	65	255	292.3	7	5
	Real estate	1,321	2,519	90.7	12	11

Rank correlation co-efficient = 0.10

[1] Adjusted to match available sectoral classification.

Source: Based on Eurostat (1994) figures.

Table A.9.   Sectoral shares of total inward intra-EU flows (%)

		1984-86	1987-89	1990-92
Industries	Agriculture, and food	2.18	7.29	7.93
	Metallic	0.19	2.04	1.03
	Machinery	3.59	1.04	2.95
	Transport equipment	1.85	0.68	4.44
	Electrical, electronics	4.21	4.25	4.31
	Chemical industries	7.04	9.10	3.01
	Other industries	3.78	7.67	2.58
	Total	22.84	32.07	28.83
Building and construction		2.53	2.47	0.60
Services	Finance, banking and insurance	33.79	31.89	39.72
	Trade, hotels, catering	16.68	9.51	10.71
	Transport and communication	1.11	1.08	0.92
	Real estate	22.58	13.20	7.40
	Other services	0.44	9.78	11.82
	Total	74.60	65.46	70.57
TOTAL		100.00	100.00	100.00

Note: Excluding Energy and 'not-allocated' category.
          Sum of figures may not always total 100 due to rounding.
Source: Based on Eurostat (1994) figures.

Table A.10. Inward extra-EU sectoral flows, annual averages and changes, 1984/86– 1990/92

		Annual averages			Change (1984/86 = 100)		
		1984–86	1987–89	1990–92	1984–86	1987–89	1990–92
Energy		684	-453	1,891	100	-66	276
Industries	Agriculture and food	343	4,053	279	100	1,182	81
	Metallic	-38	123	-139 (a)	100	-324	366
	Machinery	268	128	512	100	48	191
	Transport equipment	392	887	2,141	100	226	546
	Electrical, electronics	476	1,548	913	100	325	192
	Chemical industries	101	1,290	-54	100	1,277	-53
	Other industries	57	2,296	2,690 (a)	100	4,028	4,719
	Total	1,599	10,325	6,342	100	646	397
Building and construction		103	–89	-133	100	–86	-129
Services	Finance, banking and insurance	1,770	6,902	7,003	100	390	396
	Trade, hotels, catering	984	1,818	4643	100	185	255
	Transport and communication	165	471	461	100	285	279
	Real estate	912	1,976	2,123	100	217	233
	Other services	38	1,263	1,768	100	3,324	4,653
	Total	3,869	12,430	15,998	100	321	413
TOTAL		6,255	22,213	24,098	100	355	385

Source: Based on Eurostat (1994) figures.

Table A.11.   Changes in the EU's industrial distribution of inward extra-EU FDI flows, 1984–86/1987–92 (annual averages), sensitivity ranking and rank correlation co-efficient

		Inward flows (annual averages – million ECU)		Change in average annual flows, 1984–86/1987–92 (%)	Ranking	SMP sensitivity ranking[1]
		1984–86	1987–92			
Industries	Agriculture and food	343	2,166	531.5	2	7
	Metallic	-38	-16	137.5	9	10
	Machinery	268	320	19.4	11	4
	Transport equipment	392	1,514	286.2	5	6
	Electrical, electronics	476	1,231	158.6	8	2
	Chemical industries	101	618	511.9	3	3
	Other industries	57	2,493	427.4	1	9
Building and construction		103	-111	-207.8	12	8
Services	Finance/banking/ insurance	1,770	6,953	292.8	4	1
	Trade, hotels, catering	984	3,231	228.4	6	12
	Transport/comm.	165	466	182.4	7	5
	Real estate	912	2,050	124.8	10	11

Rank correlation co-efficient = 0.15

[1] Adjusted to match available sectoral classification.

Source: Based on Eurostat (1994) figures.

Table A.12. Changes in Germany's industrial distribution of inward FDI stock

Sector and industry		Inward stock (million DM)		Change in stock, 1980/1990 (%)	Ranking	SMP sensitivity ranking[1]
		1980	1990			
Primary sector	Agriculture	61	152	+49.2	9	19
	Mining, etc.	76	11	–85.5	19	18
Secondary sector	Food, beverage and tobacco	3,460	3,988	+15.3	13	8
	Textiles, leather and clothing	487	709	+45.6	12	7
	Paper	669	1,285	+92.1	5	13
	Chemicals	6,933	9,142	+31.9	11	4
	Coal and petroleum products	8,514	5,192	-39.0	18	15
	Rubber products	2,052	2,143	+4.4	14	11
	Non-metallic mineral products	725	554	-23.6	15	12
	Metals	5,320	3,431	-35.5	17	14
	Mechanical equipment	6,449	4,171	-35.3	16	3
	Electrical equipment	3,767	6,404	+70.0	8	2
	Motor vehicles	3,159	5,701	+80.5	7	5
	Other transport equipment	67	195	+191.0	2	6
	Other manufacturing	935	7,743	+728.0	1	10
Tertiary sector	Construction	205	259	+26.3	12	9
	Distribution	11,038	21,938	+98.8	4	16
	Finance and insurance	5,640	13,869	+145.9	3	1
	Other services	1,897	3,504	+84.7	6	17

Rank correlation co-efficient = 0.24

[1] Adjusted to match available sectoral classification.

Source: UN World Investment Directory (1995).

This section shows the significance of the European Union and individual Member States in worldwide direct investment. The share of FDI flows the EU has received increased throughout the 1980s until 1992, from roughly one-quarter to one-half of worldwide flows. This development seems to have been largely at the expense of FDI into the US during that same period. Most recently, however, the European Union share (along with that of the rest of Europe) has seen a sharp decline, which is reflected in Asia's rapidly increasing share, up to one-quarter of all FDI inflows in 1993.

Table A.13.   Share of FDI flows from all countries into regions (%)

Investment	North America	Latin America	EU	Rest of Europe	Africa	Asia	ROW	Total
1982–87	41.3	9.0	28.2	3.4	2.8	10.6	4.8	100.0
1988–90	33.8	4.3	42.3	3.6	1.8	9.2	5.2	100.0
1991–92	13.5	10.2	47.1	6.1	1.3	17.2	4.8	100.0
1993	14.8	10.5	36.8	3.3	1.6	26.8	6.2	100.0

Source: Based on UNCTAD (1994) and IMF data.

A sharp increase in the European Union's share of inward stock during the second half of the 1980s seems to have stagnated in the early 1990s, declining slightly from 40% in 1990. The highest growth is in Asia, followed by modest growth of Latin American stock, and very little movement elsewhere.

Table A.14.   Share of worldwide FDI stock from all countries by regions (%)

Investment	North America	Latin America	EU	Rest of Europe	Africa	Asia	ROW	Total
1980	26.8	9.6	35.0	3.9	4.2	13.8	6.8	100.0
1985	33.1	9.7	28.4	3.3	3.4	16.7	5.5	100.0
1990	29.6	6.8	39.8	4.0	2.3	10.6	6.9	100.0
1992	27.8	7.7	39.4	4.1	2.3	13.4	5.4	100.0
1993	26.9	7.9	39.1	4.0	2.3	13.6	6.2	100.0

Source: Based on UNCTAD (1994) and IMF data.

Since the late 1980s, roughly 20% of worldwide FDI flows have gone to the UK and France taken together, with France taking over the role from the UK as leading recipient at the beginning of this decade. A further 10% of worldwide inflows are accounted for by Belgium/Luxembourg and Spain taken together. The lower income EU countries' share peaked at a considerable 8% of world inflows during 1991–92, before falling back again in 1993 to its mid-1980 share. (Taken together, these four EU countries have received from 70% of worldwide inflows into the EU during the 1982–87 period, to 74% during 1988–90, to 78% during 1991–92, to 82% in 1993.)

Table A.15.   Share of FDI inflows from all countries accounted for by individual EU countries (%)

		1982–87	1988–90	1991–92	1993
High income	Belgium/Luxembourg	1.8	3.6	6.4	5.8
	Denmark	0.1	0.5	0.8	0.9
	France	4.1	5.7	11.5	11.3
	Germany	2.2	3.7	4.4	0.6
	Italy	2.0	2.7	1.7	2.0
	Netherlands	2.3	4.4	3.6	3.0
	UK	9.9	15.0	10.7	7.9
	TOTAL	22.4	35.6	39.1	31.5
Medium income	Greece	0.7	0.5	0.7	0.5
	Ireland	0.2	0.1	0.1	*
	Portugal	0.4	0.9	1.3	0.7
	Spain	3.7	5.2	5.8	3.9
	TOTAL	5.0	6.7	7.9	5.1
European Union total		27.4	42.3	47.0	36.6

* = ratios have not been calculated because of negligible values.
Source: Based on UNCTAD (1994) and IMF data.

All European Union countries, except for Germany and the UK, have seen a fairly steady growth of their share of inward FDI stock during the 1980 to 1993 period. Within the high income group, France's share seems to be on course to leave both Germany and the UK behind if the latest figures are indicative of years to come. Of the medium income European Union countries, Spain's share has stabilized at a respectable 5% of worldwide stock in 1993.

Table A.16. Share of FDI inward stock from all countries accounted for by individual EU countries (%)

		1980	1985	1990	1992	1993
High income	Belgium/Luxembourg	1.5	1.2	2.2	2.9	3.2
	Denmark	0.8	0.5	0.5	0.6	0.6
	France	4.5	4.5	5.1	6.1	6.6
	Germany	7.3	5.0	7.0	6.7	6.2
	Italy	1.8	2.5	3.4	3.2	3.1
	Netherlands	3.8	3.4	4.3	4.3	4.3
	UK	12.5	8.4	12.0	8.9	8.8
	TOTAL	32.2	25.5	34.5	32.7	32.8
Medium income	Greece	0.9	1.1	0.8	0.8	0.8
	Ireland	0.8	0.6	0.3	0.3	0.2
	Portugal	0.1	0.1	0.4	0.6	0.2
	Spain	1.0	1.2	3.9	5.0	5.0
	TOTAL	2.8	3.0	5.4	6.7	6.2
European Union total		35.0	28.5	39.9	39.4	39.0

Source: Based on UNCTAD (1994) and IMF data.

Table A.17. Shares of outward annual average FDI flows of selected investors by host region/country, 1984–86, 1987–89, 1990–92

		Host country/region					
		European Union	US	Japan	EFTA	ROW	Total
Belgium/Luxembourg	1984–86	77	7	-2	9	9	100
	1987–89	69	8	0	7	16	100
	1990–92	89	4	2	-14	19	100
Denmark	1984–86	47	28	1	12	12	100
	1987–89	73	9	1	9	8	100
	1990–92	58	6	2	23	11	100
France	1984–86	30	41	1	8	20	100
	1987–89	61	24	0	4	10	100
	1990–92	66	19	0	7	8	100
Germany	1984–86	33	46	1	6	13	100
	1987–89	43	39	1	7	10	100
	1990–92	68	11	1	8	12	100
Italy	1984–86	56	20	0	7	17	100
	1987–89	80	-12	3	7	22	100
	1990–92	56	12	1	0	32	100
Netherlands	1984–86	57	25	1	0	17	100
	1987–89	43	37	0	6	14	100
	1990–92	64	20	1	6	10	100
UK	1984–86	-1	87	1	-6	19	100
	1987–89	15	76	0	0	9	100
	1990–92	68	-24	1	4	51	100
Spain	1984–86	41	30	0	0	29	100
	1987–89	60	20	0	7	14	100
	1990–92	57	20	0	2	20	100
European Union	1984–86	28	52	1	2	17	100
	1987–89	41	43	1	4	11	100
	1990–92	67	12	1	4	16	100
US	1984–86	13	-	-5	na	92	100
	1987–89	58	-	-3	na	45	100
	1990–92	25	-	0	18	57	100
Japan	1984–86	15	42	-	na	43	100
	1987–89	19	47	-	na	34	100
	1990–92	22	45	-	na	33	100

na = not available

Source: Based on Eurostat (1994) figures.

From the shares of outward FDI flows it follows that in the early 1990s, on average, two-thirds of foreign operations of European Union companies were undertaken inside the European Union, a share which has grown steeply and steadily since the middle of the 1980s, mostly at the expense of flows to the US. These recent shares of two-thirds of outflows can be seen in the case of Germany and France, in both cases emerging from one-third of outflows during the mid-1980s. Even the UK and the Netherlands, both with a traditionally strong share of flows going to the US, sent two-thirds of flows to the European Union during the early 1990s. As a qualification, these figures might be exaggerated by the actions of the large Anglo-Dutch transnationals, and in the case of the UK, substantial disinvestments in the US lead to a rather unrealistic/meaningless share of over 50% of flows to non-Triad countries.

Other countries show more erratic movements. Denmark's share of FDI outflows to the European Union in the early 1990s was 25% lower than during the late 1980s, mostly in favour of more recent Danish investments in EFTA countries. US firms' operations in the European Union appear to be reduced by more than half to one-quarter in the early 1990s, as compared with the late 1980s.

Although the patterns of flows presented in Table A.17 provide us with some insights into recent movements, these (often seemingly erratic) figures do not allow systematic evaluation of the evolution of FDI ties between countries. Stock figures are more reliable as a basis for calculating FDI linkages between countries.

APPENDIX B

Econometric methodology

B.1. Introduction

The primary objective of the econometric work is to quantify the impact of the SMP on the sectoral and geographical pattern of intra-EU FDI. An analysis of intra-EU FDI can draw either on separate data from countries who are important individual investors, or on aggregate intra-EU statistics, such as those produced by Eurostat. We consider that the use of the Eurostat data in any empirical exercise such as that outlined here is likely to cause considerable difficulties.

In part this reflects the relatively short timespan of the data. The increase in FDI within the EU in the latter half of the 1980s could simply be a continuation of a longer-term trend towards higher cross-border investment, both within Europe and the wider world economy. If developments since the advent of the SMP are to be seen in an appropriate perspective, it is necessary to be able to evaluate them in the context of an analysis over a longer sample period. This should ensure that the other factors which influence FDI can be estimated more precisely: if we simply use data from around 1986 onwards, it is possible that the effect of these factors could be subsumed into any internal market indicator measure used. The absence of consistent Eurostat data prior to 1984 is thus a serious constraint, making it difficult to construct a coherent *antimonde,* since there are only one or two observations prior to the start of the single market process.

In addition, it is well known that there are significant statistical problems arising from inconsistencies in national definitions of FDI. These are compounded at the sectoral level by the absence of data for many EU countries. As a result Eurostat have had to estimate much of the data they report. Whilst this enables a descriptive analysis to be made (such as that in Chapter 6), it undoubtedly introduces potentially serious, additional measurement errors into any econometric study.

Moreover, it is far from clear that the available Eurostat figures provide all the information required for a detailed empirical study. For example, FDI theory relates to the stock of direct investment, whereas the Eurostat estimates are for flows. Whilst this problem is not insuperable, it does mean, as we note elsewhere, that we would have to omit potentially valuable information. Second, the time series data on intra-EU flows exclude reinvested earnings. Again, this would result in valuable information being omitted from the empirical work. Finally, the geographical breakdown of the sectoral FDI data is limited, simply giving intra-EU and extra-EU investment before 1992. A more precise breakdown showing investment in North America, EFTA etc. would be of greater use.

B.2. Data sources and approach to empirical study

Given these limitations on the quality of the available, aggregate EU sectoral data, we have chosen to undertake two separate studies looking at the determinants of outward FDI from the UK and Germany. These are the two EU countries with the largest level of outward overseas investment, accounting for some 55% of the total stock of FDI by EU Member States (and 23% of OECD FDI) as of 1989. Both countries publish detailed statistics on the sectoral and

geographical split of their overseas investments in regular publications, and data can be readily obtained from the late 1970s through to 1993.

Whilst it is unlikely that either the UK or the German data are free from error, there is no *a priori* reason why the extent of any errors should vary across host countries, since investments are always measured on the basis adopted by a single country. However, there are some missing observations for investments in particular industries in specific locations, since some data has to be suppressed to maintain confidentiality. Hence it is not possible to always fully allocate total intra-EU investment to individual Member States. (This is one of the problems faced by Eurostat.) This is particularly true of the UK stock data.

The analysis in this report draws on two separate panel data sets for the UK and Germany. For the UK, we examined the evolution of investment in the EU as a whole and in the US, reflecting the absence of consistent data by sector for a number of EU locations. For Germany, we constructed a panel with eight separate locations, six within the EU, plus the US and Austria. The six EU locations were Belgium and Luxembourg, the UK, France, Italy, the Netherlands and Spain/Portugal. Investments in Denmark and Greece were excluded on grounds of size.

We have also excluded data on investment in Ireland. In part this reflects reported developments since 1990. The German data suggest that the stock of investment in Ireland grew rapidly from DM 6.6 billion in 1990 to DM 14.7 billion in 1992. However, the available sectoral figures (which are incomplete) only account for some DM 1.3 billion of the additional investments, with manufacturing investment only rising by some DM 0.3 billion. Whilst it is clear that important developments worthy of further study have occurred in recent years, any attempt to include such incomplete figures in the empirical exercise can be expected to generate considerable econometric difficulties. It is far from clear why such large service sector investment should have taken place over such a short period, particularly given the size of the local market.

Although our main interest is in intra-EU investments, Austria and the US are included as comparator groups (subject to the availability of consistent data). Inclusion of Austria allows us to distinguish between factors that affect European investment inside and outside the EU, while inclusion of the US provides a means of picking up the underlying upward trend in FDI in the 1980s throughout the developed world. We have not included any data on investment in EFTA in our UK panel, as investment is negligible.

In both cases, for Germany and for the UK, the available investment data was amalgamated into seven separate sectors, five for manufacturing and two for services. Investments in energy, mining, construction, transport services and real estate were excluded where possible. There are relatively minor differences in the sector composition for the two countries. In manufacturing, food, drink and tobacco can be separately identified for the UK, but not for Germany, where it is included in the 'other manufacturing' group. For Germany the latter measure is given by total manufacturing investment less investments in the four separately identified industries (chemicals, machinery, electrical equipment, transport equipment). For the UK, 'other manufacturing' is given by total manufacturing investment excluding paper, metals and metal products, transport equipment (where investment is negligible) and the four separately identified industries. As of 1993, the seven sectors account for 83% of the UK stock

of non-energy FDI in the EC and 85% of the UK stock of non-energy FDI in the US. The equivalent proportions for Germany are 93% and 97% respectively.

B.3. The econometric model

In this section we outline the general framework employed in the econometric analysis. It would be inappropriate to estimate the relationship between the observed level of FDI and some indicator of the measures introduced in the SMP without controlling for a number of additional important factors that have determined the pattern of specialization and location over time. The decision to invest abroad reflects a number of factors, including the choices over the optimal means of serving foreign markets, the optimal scale and location of production, the means by which investment is financed, and the perceived need to develop facilities that promote and support overseas sales while safeguarding firm-specific assets.

We wish to focus on a number of particular measures within this general framework, which include:

(a) The size of the sectoral market in the host economy.
(b) Relative unit costs in the home and host countries.
(c) Firm-specific factors that affect the choice of FDI relative to alternative means of serving overseas markets, such as licensing.
(d) Corporate financial conditions in the home country; this affects the availability of finance for new investment expenditures.
(e) Currency variability.
(f) The costs of trade and barriers to market entry.

The possible roles for each of these factors are discussed below, along with details of the data we have employed in the econometric work. The subsequent section reviews the findings from existing empirical studies, and finally we discuss the construction of an appropriate indicator to capture the role of the SMP.

B.3.1. Market size and factor costs

Neo-classical, supply-side models of the location of production of the kind developed by, *inter alia,* Goldsbrough (1979), Cushman (1985), Bradley and Fitzgerald (1988), Pain (1993) and Barrell and Pain (1995a,b) suggest that the stock of foreign investment in a particular location is likely to be related to market size (as a proxy for output effects), the average costs of producing in that location relative to those of producing in alternative locations, and the costs of trade. Within this framework, relative costs will influence the choice of production location, and relative factor prices will help to determine the optimal factor mix within each particular location. Given that there is a cost advantage to producing outside the home country of the investor, growth in market size would be expected to raise the level of foreign investment.

In the empirical work we proxy market size by value-added output. The sector output data we use for the EU are for gross value added by branch, obtained from Eurostat. As a breakdown by sector is not available on a consistent basis for the whole of the EU over the full time period of the study, we simply use the sum of output in the seven largest EU economies for our UK panel. For the German study, the output of the respective sector in the host economy is used, since the countries without a complete set of sector data are not included in our panel. Data for the US and Austria were obtained from the *Survey of Current Business* and *OECD*

National Accounts respectively. Full details of the variables used are set out below. A useful, if somewhat time-consuming, extension to the work reported here would be to construct measures of national demand within each sector to use in place of national production.

B.3.2. Relative unit labour costs

For all of the countries we have used trend unit labour cost data produced by the IMF, converted into a common currency. This provides a measure of the real exchange rate. Unit costs are used so as to allow for differentials in productivity levels as well as wages and payroll taxes. Data and time constraints have prevented us from using sector-specific measures of costs. Whilst some estimates are available for manufacturing industries in the UK, France, Germany and the US (O'Mahony, 1995), we also require data on the service sector and costs in the Mediterranean countries.

B.3.3. Internalization factors

A company's decision to establish foreign operations is likely to also reflect factors inside the firm. If relative costs favour foreign production, then, in the absence of any market imperfection, there may be little reason for a firm to transfer firm-specific assets internally, and undertake the time and costs of establishing foreign plants, rather than doing so through a simple licensing agreement, particularly if licensees have greater experience of operating in the local market. In practice, licensing arrangements can give rise to a variety of transactions costs. Typically these arise from the difficulties of writing state-contingent contracts (Ethier, 1986; Horstmann and Markusen, 1987) to ensure the maintenance of product quality and to guard against the appropriation of firm-specific knowledge by potential competitors.

It is rare for the costs of licensing to be directly observed; however, it is probable that the costs of monitoring such agreements will be associated with the extent to which firm-specific assets and knowledge are being transferred (see Markusen, 1995, and the references therein). Possession of such assets can provide owners with temporary monopoly power, raising the level, and lowering the price elasticity, of the demand for goods. We assume that licence costs are proportional to the level of R&D undertaken by domestic companies.

FDI offers a means of expanding overseas production whilst securing the protection of product and process innovations through internalization. Licensing agreements with foreign companies have the risk of enabling potential competitors to extract some of the rents arising from new innovations. R&D intensity has often been found to be closely related to the level of FDI in cross-section and industry case studies (see, for example, UNCTC, 1992, and Clegg, 1990). Clegg reports cross-sectional evidence that the level of FDI by British and German firms can be partially explained by the level of their expenditure on R&D.

In this study we use data on registered patents to focus on the role of sectoral innovation in the home economy. The sector patents data are taken from US Department of Commerce statistics on the number of registered patents each year. A three-year cumulative measure is used as there is likely to be some time lag before the full commercial potential of most patents is realized. Use of a 'stock' measure accumulated over many years would be inappropriate, since knowledge of new products and processes can be gradually acquired by competitors.

There are obviously considerably fewer patents registered within many service industries than in manufacturing ones, suggesting that innovatory activity might be expected to be less

important for the explanation of service sector FDI. One possible way of allowing for this in estimation would be to allow for separate co-efficients on patents for service and manufacturing industries. However, this ignores the interrelationships between manufacturing and service FDI. The available data suggest that around one-half of total investment in distribution, and one-third of investment in financial and other services, is undertaken by manufacturing firms. (Campayne (1992) illustrates that the location of foreign investments by UK banks is closely linked to those of UK manufacturers.) We thus use a weighted average of manufacturing patents for the two service sectors in the empirical work.

B.3.4. Financial conditions

It is clear that some allowance should be made for the possible influence of financial conditions on the timing of investment expenditure, particularly since the rise in the level of FDI within Europe in the late 1980s occurred at a time when the European economy was moving towards a cyclical peak. Existing studies of corporate fixed investment within the UK, Germany and elsewhere suggest that expenditure may be affected by financial conditions (see Barrell et al., 1995, and the references therein). If capital markets were perfect then, given the Modigliani-Miller theorems, the cost of capital should be independent of the capital structure of the firm. However, if there are dead-weight costs associated with bankruptcy, then companies' real decisions may not be independent of the wider state of their balance sheets. Ireland and Wren-Lewis (1992) and Young (1993) both report evidence that the real expenditure of UK companies is affected by balance sheet disequilibrium.

The equation for outward FDI in the present National Institute UK econometric model (Barrell, Pain and Hubert, 1995) contains terms to reflect the influence of corporate interest gearing. This rose substantially in the UK in the last two recessions, reflecting both a build-up of corporate debt and the extent to which interest payments are sensitive to movements in short-term interest rates. Recessions typically force firms to take active steps to reduce their expenditure in order to ease debt burdens, resulting in lower investment and employment levels.

Related work for Japan and Germany also indicates that the level of FDI is affected by short-term financial measures, captured by variations in the average interest rate on bank loans (Barrell and Pain, 1995) and the user cost of capital (Barrell, Pain and Hubert, 1995). The latter also report that German investments outside the EU, particularly in developing countries, are affected by changes in the real burden of net corporate debt. We draw on the above studies in the empirical work, using a measure of corporate interest gearing for the UK and a measure of the user cost of capital for Germany.

B.3.5. Currency variability

There are a variety of ways in which currency variability might affect direct investment. Simple portfolio models would imply that a rise in the risk associated with a particular asset might reduce the level of investment in that asset, although this is dependent on the extent to which the risks associated with different assets are correlated. While it is possible to insure against currency risk, this is not without cost. Alternatively, if the cost of exchange rate variability largely arises because production is being undertaken in one location while sales are primarily elsewhere, then variability may actively promote direct investment. The results

of Cushman (1988) suggest that exchange rate variability has raised inward investment in the US.

It may also be the case that the impact of currency variability on investment from a particular location is dependent upon the importance of that location within the wider regional market. This is particularly true of Germany, since the German market will be the primary destination for many tradeable goods produced elsewhere within Europe. An implication of this is that German firms may prefer to produce in countries whose nominal exchange rates are closely linked to the DM. To investigate this possibility we include a dummy variable in the empirical work for Germany, set to unity for those countries who are members of the Exchange-Rate Mechanism of the EMS; plus Austria, which has pursued a policy of closely shadowing the DM since 1982.

B.3.6. Barriers to market entry

In the absence of decreasing returns to scale, it is necessary, at least in the tradeable goods sector, to account for the existence of multi-plant operations to produce the same product. There are a complex set of such motivating factors, including tax considerations and the costs associated with alternative means of market entry. Broadly defined, the costs of market entry might include transport costs as well as the impact of tariff and non-tariff barriers. As regards the UK and Germany, it is likely that non-tariff barriers have been the main impediments to market entry over the time period we study, given that both countries are already members of the common customs union in which the direct investment is taking place. The effectiveness of such barriers is likely to have diminished over time, partly as a result of the legislation introduced over the last ten years in the aftermath of the Single European Act in 1986. A subsequent section of this chapter discusses ways of constructing a quantitative indicator to capture the impact of the SMP.

Although we focus on a single, composite indicator in this study it is important to remember that the impact of particular non-tariff barriers can vary (Cantwell and Sanna Randaccio, 1992), with some simply affecting trade whilst others deter market entry either by trade or by direct investment. This implies that the estimated effect of any single market indicator might be expected to vary across sectors.

B.3.7. Other factors

There is a vast number of additional factors that have been used in time-series and panel data analyses of FDI. Many of these are country-specific economic and social characteristics, such as investment grants, tax advantages, contiguous borders and language (Veuglers, 1991), infrastructure and agglomeration economies (Coughlin et al, 1991; Wheeler and Mody, 1992), and risk, that cannot be picked up by other variables. Some of these are best dealt with by means of survey evidence rather than through attempts to construct imperfect empirical proxies. Others, such as infrastructure levels, may be more relevant for an analysis of developing countries (although it might be an important factor behind the limited inward investment in Greece). We attempt to allow for country-specific and sector-specific factors in the empirical work by estimating a 'fixed effects' panel model, with a separate intercept included for each sector for all host economies.

B.4. Existing econometric studies

The specification of our basic model should be viewed in the context of the findings from existing empirical studies of the determinants of FDI within Europe. There are, in fact, relatively few existing empirical studies of the determinants of total FDI within Europe, in part because of the undoubted data constraints. Two studies employ gravity-type models to determine the pattern of investments. Molle and Morsink (1991) focus on aggregate bilateral flows within the EU over the period from 1975 to 1983. Their results suggest that factors within the home economy are more important determinants of the level of investment than factors within the host economy, with net national financial resources and R&D expenditure being particularly significant. Distance and a constructed indicator to allow for cultural differences were also found to be important.

Thomsen and Woolcock (1993) also estimate a gravity model, but use data on the aggregate stock of direct investment within Europe by the UK, Germany, France, Italy, the Netherlands, Sweden, Denmark and Spain. The only two variables consistently found to have the expected sign were GNP in the home country and distance. Again, this provides some indication that large countries are more likely to invest overseas, and that investments are more likely to be in locations with contiguous borders.

The panel data model estimated by Culem (1988) is closer to the basic neo-classical model, with the flow of intra-EC investment from the UK, France, Germany, Belgium and the Netherlands over the period 1969–82, being positively determined by market size and tariff protection in the host country and negatively related to export penetration. Outflows are found to be stimulated by a higher relative rate of interest in the host economy, although there is little guidance as to how this term should best be interpreted. There is some evidence that flows are affected by unit labour costs, although the signs on a term for host country costs are not robust.

Overall, it is difficult to draw any firm conclusions from these studies, particularly as there is no single determinant common to all three models. It may be that the heterogeneity within the data is such as to preclude any firmly-based results. There is some evidence that clearer results for Europe can be obtained from studies that focus on either a single home country, or a single host country. Empirical support in favour of the importance of host country size and relative unit labour costs is provided by the supply-side models estimated by Goldsbrough (1979) for Germany and the UK, and Bradley and Fitzgerald (1988) for Ireland.

More recently, the results from the stock adjustment model in Pain (1993) indicate that inward investment in the UK from 1970 to 1987 can largely be accounted for by market size, relative factor costs and import penetration, with location in the UK being viewed as a means of serving the wider EU market. Related findings are obtained by Bajo-Rubio and Sosvilla-Rivero (1994) in their analysis of inward direct investment in Spain over the period from 1964 to 1989. Again, host country market size is found to be important within the context of a stock adjustment model.

There is also some evidence that accession into the EC stimulated inward investment. However, there is little evidence that inward investment from other Member States has been affected by either domestic unit labour costs or the real exchange rate. Inward investment is also found to be negatively related to inflation in Spain; the authors interpret this as an indication that investment is discouraged by macroeconomic instability.

Panel data studies of German manufacturing FDI have been undertaken by Moore (1993) and Barrell, Pain and Hubert (1995). Both include investment in developed and developing regions outside the EU, as well as investment in a number of EU locations. Host country, or region, GDP and relative labour costs are found to be important determinants of the pattern of investment. Barrell, Pain and Hubert also report significant roles for the level of R&D expenditures by German corporations, the user cost of capital, and fluctuations in the ratio of corporate net debt to GDP.

Papanastassiou and Pearce (1991) report a cross-sectional study of the locational determinants of FDI in Europe by eight separate UK manufacturing industries in 1984. The results indicate that, on average, the share of investment in a particular host country is positively associated with its GNP and skilled labour endowment, as proxied by numbers of scientists and engineers, and negatively associated with distance and labour costs.

The impact of non-tariff barriers on direct investment in Europe by non-European investors is explored in Barrell and Pain (1995) and Buigues and Jacquemin (1994). The former illustrate that anti-dumping cases initiated under the GATT agreement by the European Commission have raised the level of inward investment by Japanese companies in Europe. Buigues and Jacquemin show that the share of Japanese investments in the EC over the period from 1980 to 1989 is significantly related to a composite indicator of non-tariff barriers within the EU. This indicator is also found to be positively related to the European share of US direct investments, although the reported co-efficient is not significant. These two studies provide some indication that the pattern of business location may be influenced by non-tariff barriers. However, as far as we are aware, there are no existing studies of the impact of non-tariff barriers on the pattern of intra-European direct investment. The primary role of our study is to begin to address this topic.

B.5.   Econometric techniques used in this study

The German data set we have assembled has 13 annual observations (1980–92) for seven sectors in eight separate locations giving a total panel size of 728 observations. The UK panel is smaller, with 12 annual observations (1981–92) for seven sectors in two localities, giving a total of 168 data points. All the main explanatory variables, with the exception of the gearing ratio for the UK, are entered in logarithmic form, permitting direct estimates of their elasticities.

In practice the existence of adjustment costs due to delivery lags, delays in finding suitable investments overseas and delays in obtaining planning permission, means that the desired and actual stocks of investment are unlikely to be equal period by period. We therefore employ a partial adjustment model in estimation, whereby the aggregate change in the investment stock (i.e. the flow of new direct investments) is a function of the discrepancy between the current desired capital stock (denoted S^*_{jt}) and the actual stock at the end of the previous period:

$$\Delta \ln(S_{jt}) = \omega \left[\ln(S^*_{jt}) - \ln(S_{j,t-1}) \right] \tag{1}$$

or, equivalently:

$$\ln(S_{jt}) = \omega \ln(S_{jt}^{*}) + (1 - \omega)\ln(S_{j,t-1}) \tag{2}$$

This provides an important distinction between the model used in this report and those used in earlier studies of intra-EU direct investment. Culem (1988) and Molle and Morsink (1991) both relate the current change in the investment stock to the factors that determine the desired stock, even though the standard neo-classical model relates the investment stock to relative costs. Omission of the lagged stock ignores potentially valuable information and could potentially generate misspecification. Of course, it is possible to substitute out for the lagged stock in (2) using the identity:

$$S_{j,t} = \Sigma_0^n (1 - \delta_j)^i \cdot I_{j,t-i} \tag{3}$$

where δ_j denotes the rate of depreciation and I_j the flow of new investment ($\cong \Delta S_j$), although this implies that lagged terms in the flow of investment should be included in (2). These terms are typically omitted from the previous studies that focus on direct investment flows.

The existence of a lagged dependent variable induces a small sample bias into panel estimates produced using OLS (Nickell, 1981), so that an instrumental variable estimator has to be employed. There are a number of potential instruments that can be used for the lagged dependent variable; one possibility is to employ the second lag of the dependent variable. An alternative is to use the rank order of the lagged dependent variable. Clearly this latter instrument is strongly correlated with the variable being instrumented, but has been 'cleaned' of the lagged disturbance term.

However, it may be a poor instrument if there is substantial measurement error present in the instrumented variable and, hence, in the associated rank order. *A priori*, measurement error is more likely to be present in the UK data, given the need to construct some data by interpolation. The rank order is thus used as an instrument in the German panel study alone. For the UK, we use the higher order lag of the dependent variable.

Comments received on an earlier draft of the econometric analysis in the report relate to the statistical properties of the variables used and the chosen form of the empirical model. Section B.5.1 discusses the reasoning behind these comments and explains why both are misplaced. We illustrate this using the basic panel data model for German FDI with the single dummy variable for the single market.

B.5.1. Non-stationarity

There are three non-stationary variables in the panel model:

(a)   the stock of FDI,
(b)   output,
(c)   the stock of patents.

In a conventional single-equation time series model, separate tests are available to establish whether a significant long-term relationship exists between such variables. If it does, these variables can be said to be 'co-integrated', with a particular linear combination of the non-stationary variables creating a stationary variable. This matters because conventional hypothesis tests rely on the (testable) assumption that the errors of any estimated equation are stationary. It is important to note that the co-integrating relationship only has to exist for estimation to be valid; it does not have to be imposed before hypothesis testing can take place (Banerjee et al., 1993).

Unfortunately, equivalent tests are not readily available for panel data, although univariate tests do exist (Im, Pesaran and Shin, 1995). One important point to note is that it is possible to test for non-stationarity with a relatively small time dimension to the panel, simply because the power of such tests is raised by their joint application across all members of the panel.

In principle, the results of the panel data analysis may be affected by the inclusion of non-stationary variables. One solution might be thought to take first-differences of such variables to ensure that they are stationary. This would certainly be appropriate if there were, say, only three or four observations across time. As we have 13 observations per panel member across time, it is preferable to allow for the potential existence of a long-run relationship, rather than taking first-differences of the non-stationary variables and neglecting the possible existence of a long-run relationship. It is important to note that the incorrect exclusion of relevant long-run information can be expected to lead to biased parameter estimates and incorrect hypothesis tests.

B.5.2.   Partial adjustment models

Concerns have been expressed over the use of a partial adjustment model and the *ad hoc* nature of the model employed. We do not consider the model to be particularly *ad hoc*: it is straightforward to set out a simple algebraic model of the firm yielding a relationship between the stock of FDI, output, innovation in the investing country and relative costs (Barrell, Pain and Hubert, 1996). The role played by each of these factors was discussed previously and a key feature of this model is that it ultimately reflects the factors that determine the stock of FDI.

It is widely accepted in economics that adjustment costs matter, whether in affecting the behaviour of the firm or the behaviour of individuals. For example, it is well known that adjustment costs affect the timing and implementation of fixed investment decisions of firms, see Bean (1981). *A priori*, there is no reason why such costs should not be expected to affect the timing and implementation of overseas investments as well. The existence of adjustment costs means that the desired and actual stocks of direct investment are unlikely to be equal period by period.

A simple way of allowing for the existence of such costs is to estimate a partial adjustment model, whereby the aggregate change in the investment stock (i.e. the flow of new investments) is a function of the discrepancy between the current desired stock of direct investment and the actual stock at the end of the previous period:

$$\Delta \ln(M_{jt}) = \omega \left[\ln(M_{jt}^{*}) - \ln(M_{j,t-1}) \right] \qquad [4]$$

Here M_{j}^{*} denotes the desired stock of direct investment, which can be expected to be determined by factors such as output, patents etc. We would expect to find a long-run

relationship between the stock of direct investment and the factors that determine the desired stock. In estimation we can also make allowance for financial factors (such as interest gearing, exchange rate volatility) which affect the timing of new investments, so that:

$$\Delta \ln(M_{jt}) = \omega \left[\ln(M_{jt}^{*}) - \ln(M_{j,t-1}) \right] + \Sigma \alpha_i Z_{it} \qquad [5]$$

There are two basic forms adopted by other studies of FDI within Europe. One can be viewed as using the first differences of the long-run relationship for the stock, so that the change in the stock of investment is related to factors such as market growth. This ensures that all the variables employed are stationary, but ignores the potential existence of a long-run relationship:

$$+ \Sigma \alpha_i Z_{it} \qquad [6]$$

An alternative approach is to relate the flow of investment to the factors that affect the desired stock of investment over time:

$$\Delta \ln(M_{jt}) = \omega \ln(M_{jt}^{*}) + \Sigma \alpha_i Z_{it} \qquad [7]$$

Examples of this form of model include Scaperland and Balough (1983) and Moore (1993). Such models are more likely to be misspecified, since the time series properties of the change in the stock of FDI are likely to differ from those of the variables that determine the stock itself.

The important point is that all three competing models, [5], [6] and [7] can be viewed as being nested within the general first-order lag model [8]:

$$\Delta \ln(M_{jt}) = \sum_{i=0}^{1} \omega_i \left[\ln(M_{j,t-i}^{*}) \right] + \varpi \ln(M_{j,t-1}) + \Sigma \alpha_i Z_{it} \qquad [8]$$

The relevant parameter restrictions can easily be tested. Failure to do so can easily lead to biased parameter estimates, as we illustrate below.

B.5.3. German FDI

To illustrate some of the points made above, we re-estimate the basic model of German FDI using a first difference model of the form of [6]. The empirical results are all reported in Table B.1. One minor change from the initial set of estimates is that the sample period now covers 1981–92 rather than 1980–92. This is because we have allowed for a lagged output effect. As we only have a sectoral output data set from 1980, estimation can only begin in 1981.

The first column of Table B.1 (1.1) re-estimates the basic model, again employing an instrumental variables estimator to correct for the small sample bias arising from the inclusion of the lagged dependent variable. Fixed effects for each panel member are included, but are not reported. All the variables remain significant and there is no sign of significant first order serial correlation. It can be seen that the single market dummy has a small, but statistically significant, positive co-efficient. In (1.2) we include two additional terms, the first lag of sectoral output in the host economy and the first lag of the stock of sectoral patents registered by German companies. Both of these terms are individually and jointly insignificant

(Chi(2)=5.51). Thus, the restrictions required to return to our original equation (1.1) from (1.2) cannot be rejected.

An alternative approach is to estimate a first-difference model, with all the non-stationary variables – the FDI stock, output and patents – entered solely in first-differences, as in [6]. This requires the imposition of three restrictions in (1.2), a co-efficient of unity on the lagged dependent variables, and equal and opposite co-efficients on the two output terms and the two patents terms. These three restrictions are strongly rejected by the data (Chi(3)=108.4). This suggests that it is invalid to estimate the model in first-difference form alone.

In (1.3) we show the consequences of adopting such an approach, none of the parameters are individually significant and a number of co-efficients change sign. There is clear evidence of significant first-order serial correlation, confirming that the imposition of invalid restrictions has led to a serious misspecification.

Table B.1.   The determinants of German FDI (sample period 1981–92)

Dependent variable: (1.1) and (1.2) $\ln(FDI)_t$

$(1.3)\ \Delta \ln(FDI)_t$

	(1.1)	**(1.2)**		**(1.3)**
$\ln(FDI)_{t-1}$	0.3887 (6.5)	0.3721 (6.1)		
$\ln(Y)_t$	0.4554 (3.4)	0.5374 (2.7)	$D\ln(Y)_t$	0.1826 (0.9)
$\ln(REL)_t$	0.1860 (2.4)	0.1508 (1.9)	$\ln(REL)_t$	0.0758 (1.2)
$\ln(PAT)_t$	0.4767 (3.4)	0.4944 (2.3)	$D\ln(PAT)_t$	0.2844 (1.4)
$\ln(REC)_t$	-0.3282 (2.7)	-0.2866 (2.4)	$\ln(REC)_t$	0.0070 (0.1)
$EXCH_t$	0.1704 (3.2)	0.1614 (3.1)	$EXCH_t$	-0.0373 (0.7)
SM_t	0.0398 (2.8)	0.0408 (2.8)	SM_t	-0.0111 (0.8)
$\ln(Y)_{t-1}$		-0.0527 (0.3)		
$\ln(PAT)_{t-1}$		0.0866 (0.4)		
$\bar{l}$	0.9724	0.9722		-0.03
Standard error	0.2267	0.2265		0.2378
SC	Chi(1)=0.09			Chi(1)=71.93*

Note: SC is an asymptotically valid test for first-order serial correlation (Barrell and Pain, 1996).

B.6.   Significance of the variables employed

B.6.1. Significance of other variables

In this section we investigate whether the observed pattern of UK and German FDI is affected by two additional variables; relative tax rates and relative market size. One point to note about the existing results is that they imply a role for differences in national social security taxes.

This is because unit labour costs include both wages and salaries, as well as employers' social security payments. The significance of relative unit labour costs means that, other things being equal, the location of some foreign investments may be in countries with lower employers' taxes.

B.6.2. Relative corporate tax rates

It has long been recognized that differences in national corporate tax systems might distort trade and investment decisions, with mobile factors of production gravitating towards countries of low taxation, thereby encouraging tax competition among nation states.

The European Commission set up a committee of experts under Onno Ruding to consider whether differences in taxation among Member States caused major distortions in the single market. The survey evidence obtained by the Ruding Committee suggested that tax differentials were a factor in nearly half of all production location decisions – over three-quarters of decisions in the case of financial centres – although it was not clear how to quantify this impact. Eltis and Higham (1995) claim that the relatively low level of corporate taxation in the UK has been an important factor behind the growth of direct investment into the UK since the mid-1980s. However, there is little empirical evidence on the impact of taxation on cross-border direct investment within Europe, and differences in national tax structures are not taken into account in existing studies of intra-EU FDI.

Here we investigate whether the pattern of UK and German FDI is affected by differences between the corporate tax rates applied by the host country and the home tax rate. The trends in national tax rates over the 1980s are discussed in.some detail by Thomsen and Woolcock (1993). We use a variable TAX, defined as $(1-t_i)/(1-t_j)$ where t_i denotes the corporate tax rate in the host country and t_j denotes the rate in the investing country. For countries such as Austria, France and Germany who have (or have had) separate rates of tax on retained and distributed profits we use the former rate. If FDI is attracted towards countries with lower tax rates, the TAX variable should be positively signed.

The variable is perhaps best seen as a proxy for the general business climate in a particular country, rather than as a means of capturing the full complexities of national tax systems. In practice, differences in national tax rates may not matter much if foreign source income is subject to additional tax when repatriated to the home country. Differences in withholding taxes may also be important, but are not considered here.

In Table B.2 we report the results from adding the TAX variable into the original models for UK FDI and German FDI. These are shown as (2.1) and (2.3) respectively. The new equations are shown as (2.2) for the UK and (2.4) for Germany. In both cases the variable is insignificant and incorrectly signed, suggesting there is little evidence either that differences in national tax rates have directly influenced the pattern of FDI in Europe, or that our earlier neglect of them has biased the estimates of the impact of the single market.

Table B.2.   The importance of tax rates in outward FDI

Dependent variable: $\ln(FDI)_t$

	UK			Germany	
	(2.1)	**(2.2)**		**(2.3)**	**(2.4)**
$\ln(FDI)_{t-1}$	0.5594 (8.1)	0.5591 (8.1)	$\ln(FDI)_{t-1}$	0.4430 (8.2)	0.4427 (8.1)
$\ln(Y)_t$	0.5148 (2.0)	0.5055 (1.9)	$\ln(Y)_t$	0.4755 (3.9)	0.4864 (3.7)
$\ln(REL)_t$	0.4711 (1.3)	0.4605 (1.2)	$\ln(REL)_t$	0.1973 (1.9)	0.2025 (1.8)
$\ln(PAT)_t$	0.7386 (4.1)	0.7383 (4.1)	$\ln(PAT)_t$	0.6271 (5.1)	0.6324 (5.1)
$CASH_{t-1}$	-0.7750 (2.0)	-0.7491 (1.9)	$\ln(REC)_t$	-0.1051 (1.5)	-0.1028 (1.5)
$USME_t$	-0.9375 (4.3)	-0.9368 (4.3)	$EXCH_t$	0.1317 (2.8)	0.1313 (2.8)
SM_t	0.0699 (3.2)	0.0680 (2.7)	SM_t	0.0393 (2.9)	0.0388 (2.8)
$\ln(TAX)_t$		-0.0328 (0.2)	$\ln(TAX)_t$		-0.0280 (0.3)
Sample	1981–92			1980–92	
	0.946	0.946		0.973	0.973
Standard error	0.1989	0.1995		0.2267	0.2269

B.6.3. Relative market size

A number of studies of FDI have included measures of relative market growth. Typically, this is measured using growth in the host country relative to growth in the home country. *A priori*, the sign expected on such a variable is unclear. If production is designed to serve the local market, domestic investment may rise at the expense of foreign investment when the domestic economy grows more rapidly. Alternatively, if production is concentrated in one location to serve a wider regional market, then growth in the home country may actually be expected to stimulate outward investment.

This may be particularly true of Germany. Our existing empirical results already include a significant effect for an exchange rate dummy. This variable implies that German FDI has been greater in those countries whose exchange rates have been closely linked to the DM. One explanation for this is that this ensures greater balance between costs and revenues if production takes place outside Germany, but Germany remains the final market.

In our UK model we only consider investment in the EU and the US. The sectoral output measure already includes UK output, implying that some investment within Europe is positively related to the growth of demand within the UK; thus, it makes little sense to test for relative GDP effects. However, this can easily be done for Germany, as the output variable is for sectoral output in each respective host economy. We thus augmented the basic German model with an additional variable RELY, defined as sectoral output in Germany relative to sectoral output in the host economy.

Table B.3.   The impact of relative GDP on German FDI

Dependent variable: ln(FDI)$_t$

	(3.1)	(3.2)
ln(FDI)$_{t-1}$	0.4430 (8.2)	0.3796 (6.4)
ln(Y)$_t$	0.4755 (3.9)	1.1118 (6.2)
ln(REL)$_t$	0.1973 (1.9)	0.1797 (1.7)
ln(PAT)$_t$	0.6271 (5.1)	0.4224 (3.4)
ln(REC)$_t$	-0.1051 (1.5)	-0.0543 (0.8)
EXCH$_t$	0.1317 (2.8)	0.1081 (2.4)
SM$_t$	0.0393 (2.9)	0.0431 (3.2)
ln(RELY)$_t$		0.8612 (5.4)
$\bar{R}$	0.973	0.973
Standard error	0.2267	0.2261

The results are shown in Table B.3, column (2). In the first column we again repeat the basic equation from the original report for comparative purposes. It can be seen that the relative output term has a positive co-efficient, implying that a rise in relative output in Germany will actually act to raise the stock of FDI. This result is consistent with the message from the exchange rate variable (EXCH) that Germany remains the final market in many sectors even if production takes place abroad. Letting GEY denote German output, the co-efficients in (3.2) take the form:

$$1.1118 \ln(Y) + 0.8612 \ln(GEY/Y) = 0.8612 \ln(GEY) + 0.2568 \ln(Y)$$

The overall output elasticity is greater than in (3.1), with the main output effects actually coming from output in Germany rather than in the host economy. The counterpart to the higher output elasticity is a smaller effect from patents, although this term remains significant.

There is little difference in the two co-efficients on the single market variables. While the initial effect of the single market is shown to be a little higher in (3.2), the ultimate long-run effect will actually be slightly smaller because of the change in the co-efficient on the lagged dependent variable. However, these differences are not statistically significant.

This suggests that, although the findings using relative GDP are of interest, and possibly worthy of further exploration in their own right, they do not materially alter the original conclusions about the impact of the single market on the level of German FDI within Europe.

B.7. Results of the regressions

The main empirical results for the UK are summarized in Table B.4. The first column (labelled (4.1)) reports the estimates of a simple model which does not included any explicit variable, to capture single market effects. This illustrates that it is possible to obtain a parsimonious, economically coherent model for the pattern of FDI by UK firms over the period from 1981.

There are significant effects from both host region output and patents, with respective elasticities of 1.54% and 2.03%. We also obtain a sizeable, positive effect from relative unit labour costs, although it is not statistically significant. One possible explanation for this finding is that foreign labour costs can have a dual effect (Cushman, 1988), as they affect both the location decision and the optimal factor mix at a particular location. However, inclusion of a relative factor price term made little difference to the reported results. Although the term was correctly signed, with a positive co-efficient, it was not significant (with a t-ratio of 0.96). The lack of significance of labour costs is in accordance with the findings of Papanastassiou and Pearce (1991).

The corporate gearing measure appears to have a significant impact on investment, with a long-run semi-elasticity of -1.66%. This implies that a 1% rise in gearing will eventually reduce investment by 1.66%. This term should be seen primarily as an indicator of the extent to which changes in domestic financial conditions affect the timing and the size of the flow of direct investment. As the gearing ratio cannot be expected to permanently trend over time, it cannot be the primary factor behind the continuing upward trend in the stock of investment.

One additional term in (4.1), denoted USME, is a dummy variable set to unity in 1992 to allow for a large change in the recorded book value of UK investments in mechanical engineering in the US in 1992. This change appeared to be unrelated to either the flow of investment in 1992 or currency movements that year. The inclusion of the dummy does not have a marked effect on the reported co-efficients, but is necessary to ensure the validity of the subsequent hypothesis tests.

The single market indicator based on M&A data is introduced in column (4.2) in Table B.4. This is denoted SM and is set to zero for all the US sectors. For the EU sectors, it has the value of 1, 2 or 3 from 1987 onwards. The significance of the variable provides support for the hypothesis that the single market has resulted in an increased level of investment within the European Union by UK firms.

One point of interest is that the implied elasticities on output and patents are now smaller than in (4.1), at 1.17% and 1.66% respectively, suggesting that some of the impact of the single market was previously being assigned to these variables. The continued presence of the lagged dependent variable means that the model has the implication that the impact of the single market has built up over time.

Table B.4.   The determinants of UK outward FDI (sample period 1981–92)

Dependent variable: ln(FDI)$_t$

	(4.1)	(4.2)	(4.3)	(4.4)	(4.5)
ln(FDI)$_{t-1}$	0.5501 (7.7)	0.5594 (8.1)	0.5318 (7.3)	0.5481 (7.9)	0.5509 (7.9)
ln(Y)$_t$	0.6934 (2.6)	0.5148 (2.0)	0.5157 (1.9)	0.3061 (1.5)	0.4654 (1.8)
ln(REL)$_t$	0.2965 (0.8)	0.4711 (1.3)	0.5009 (1.3)	0.2516 (0.6)	0.5066 (1.3)
ln(PAT)$_t$	0.9140 (5.1)	0.7386 (4.1)	0.8253 (4.2)	0.5994 (3.2)	0.8061 (4.3)
CASH$_{t-1}$	-0.7488 (1.9)	-0.7750 (2.0)	-0.8049 (2.0)	-0.8042 (2.1)	-0.7950 (2.0)
USME$_t$	-0.9665 (4.3)	-0.9375 (4.3)	-0.9059 (4.1)	-0.9034 (4.2)	-0.9140 (4.2)
SM$_t$		0.0699 (3.2)		0.0951 (3.7)	
SMCH$_t$			0.1483 (1.2)		
SMME$_t$			0.0319 (0.3)		
SMEE$_t$			0.1550 (1.2)		
SMFD$_t$			0.0291 (0.2)		
SMOM$_t$			0.2948 (2.4)		
SMDS$_t$			0.2601 (2.1)		
SMFS$_t$			0.2811 (2.2)		
SMUS$_t$				0.0583 (1.9)	
SMIND$_t$					0.0539 (2.1)
SMSER$_t$					0.1032 (2.9)
$\bar{R}^2$	0.943	0.946	0.946	0.954	0.953
Standard error	0.2054	0.1989	0.1999	0.1971	0.1988
Test		2.71	1.70	1.65	2.07

Variable definitions
FDI – Stock of UK FDI (US$ million, 1990 prices).
Y – Sectoral output (US$ million, 1990 prices).
REL – Relative UK/foreign unit labour costs.
PAT – Stock of UK sectoral patents (three-year cumulation).
CASH – Ratio of debt interest payments to UK corporate cashflow.
USME –Dummy variable for outlier in investment in US mechanical engineering sector.
SM – Sectoral single market indicator for EU (zero before 1987).
SMUS – Sectoral single market indicator for US (zero before 1987).
SMCH – Dummy variable for EU chemicals (1 from 1987–92).
SMME – Dummy variable for EU mechanical engineering (1 from 1987–92).
SMEE – Dummy variable for EU electronics (1 from 1987–92).
SMFD – Dummy variable for EU food, drink and tobacco (1 from 1987–92).
SMOM – Dummy variable for EU other manufacturing (1 from 1987–92).
SMDS – Dummy variable for EU distribution (1 from 1987–92).
SMFS – Dummy variable for EU financial services (1 from 1987–92).
SMIND = SMCH + SMME + SMEE + SMFD +SMOM
SMSER = SMDS + SMFS

In column (4.3) the single SM variable is replaced by seven separate dummy variables. Each is set to unity from 1987 onwards for a particular sector. This provides a test of whether there has been a structural break in FDI in any sector over the period since the advent of the single market. The co-efficients indicate that UK investment in the EU has been higher in all sectors since 1987 than might otherwise have been expected. However, only the dummies for other manufacturing, distribution and financial services are significantly different from zero.

We also report asymptotically-valid chi-squared test statistics (identified as 'Test') for the presence of first-order serial correlation, as described in Barrell and Pain (1996). All are distributed CHISQ(1), 95% critical value = 3.95, and in all cases the derived statistics fail to provide any significant evidence of the presence of serial correlation.

We argued above that it is not appropriate to conclude that the single market has had a particular effect simply by inspecting the co-efficients on the individual sector dummies, since these could be reflecting other common factors as well. However, it is possible to test whether the restrictions required to return to the SM variable based on the pattern of M&As can be imposed. This requires a joint test of six restrictions – that the co-efficients on SMCH, SMOM and SMDS are twice the size of that on SMME, and that the co-efficients on SMEE, SMFD and SMFS are three times the size of that on SMME. These restrictions are jointly acceptable (Chi-Squared(6)=0.07).

It is also possible to impose the restrictions required to yield a single market indicator consistent with the Commission estimates reported in Table 7.1. This requires a joint test of six alternative restrictions – that the co-efficient on SMFD is equal to that on SMME, that the co-efficients on SMCH, SMOM and SMDS are twice the size of that on SMME, and that the co-efficients on SMEE and SMFS are three times the size of that on SMME. These restrictions are jointly acceptable (Chi-Squared(6)=0.28). Taken together, the findings from the separate sector dummies indicate that developments since 1987 are in line with what might be expected given the scope of the single market legislation. However, it is clear that the impact of this legislation on within-sector developments cannot be estimated too precisely.

The effect of introducing separate sector dummies for both the EU and the US is also explored in Table B.5. This shows that there is little evidence of any switching of investment from the US to the EC at the sectoral level, with the notable exception of the distribution sector, and some weak evidence for the chemicals sector.

Table B.5.   EU and US sectoral effects (UK FDI)

EU		US	
$SMCH_t$	0.1944 (1.6)	$SMUSCH_t$	-0.0341 (0.3)
$SMME_t$	0.0572 (0.5)	$SMUSME_t$	0.2421 (1.7)
$SMEE_t$	0.3509 (2.5)	$SMUSEE_t$	0.2316 (1.5)
$SMFD_t$	0.1132 (1.0)	$SMUSFD_t$	0.3621 (2.9)
$SMOM_t$	0.4161 (3.4)	$SMUSOM_t$	0.1978 (1.4)
$SMDS_t$	0.2741 (2.3)	$SMUSDS_t$	-0.2858 (2.1)
$SMFS_t$	0.3957 (2.9)	$SMUSFS_t$	0.3853 (2.7)
$\overline{R^2}$	0.951		
Standard error	0.1901		
Test	0.12		

Variable definitions
SMCH – Dummy variable for EU chemicals (1 from 1987–92).
SMME – Dummy variable for EU mechanical engineering (1 from 1987–92).
SMEE – Dummy variable for EU electronics (1 from 1987–92).
SMFD – Dummy variable for EU food, drink and tobacco (1 from 1987–92).
SMOM – Dummy variable for EU other manufacturing (1 from 1987–92).
SMDS – Dummy variable for EU distribution (1 from 1987–92).
SMFS – Dummy variable for EU financial services (1 from 1987–92).
SMUSCH – Dummy variable for US chemicals (1 from 1987–92).
SMUSME – Dummy variable for US mechanical engineering (1 from 1987–92).
SMUSEE – Dummy variable for US electronics (1 from 1987–92).
SMUSFD – Dummy variable for US food, drink and tobacco (1 from 1987–92).
SMUSOM – Dummy variable for US other manufacturing (1 from 1987–92).
SMUSDS – Dummy variable for US distribution (1 from 1987–92).
SMUSFS – Dummy variable for US financial services (1 from 1987–92).

Whilst the fit of the model appears to have improved as a result of introducing the separate sector dummies, it is not in fact possible to reject the restrictions required to return to either the single SM variable or the pattern of co-efficients implied by the Commission estimates of the impact of the single market. The respective test statistics are (Chi-Squared(6)=1.70) and (Chi-Squared(6)=5.02). It should be noted that both of these simplified models, with a single SM indicator, imply that the single market has raised the level of foreign investment in chemicals and mechanical engineering, contrary to the findings in column 1.3 of Table B.4. These differences arise simply because the majority of the co-efficients on the separate sector dummies are not especially well-determined.

As before, we report asymptotically-valid chi-squared test statistics (identified as 'Test') for the presence of first-order serial correlation, as described in Barrell and Pain (1996). All are distributed CHISQ(1), 95% critical value = 3.95, and in all cases the derived statistics fail to provide any significant evidence of the presence of serial correlation.

Table B.6.   Testing for time variation in the EU and US (UK FDI)

EU		US	
SM87$_t$	0.1246 (1.5)	SMUS87$_t$	0.1265 (1.2)
SM88$_t$	0.1996 (2.2)	SMUS88$_t$	0.1976 (1.9)
SM89$_t$	0.1831 (1.8)	SMUS89$_t$	0.1767 (1.5)
SM90$_t$	0.1515 (1.0)	SMUS90$_t$	-0.0300 (0.2)
SM91$_t$	0.1690 (1.0)	SMUS91$_t$	-0.0630 (0.3)
SM92$_t$	0.1574 (1.0)	SMUS92$_t$	-0.0634 (0.4)
$\overline{R^2}$	0.956		
Standard error	0.1988		
Test	0.78		

Variable definitions
SM87 – EU dummy variable for 1987 (1 in 1987, all sectors).
SM88 – EU dummy variable for 1988 (1 in 1988, all sectors).
SM89 – EU dummy variable for 1989 (1 in 1989, all sectors).
SM90 – EU dummy variable for 1990 (1 in 1990, all sectors).
SM91 – EU dummy variable for 1991 (1 in 1991, all sectors).
SM92 – EU dummy variable for 1992 (1 in 1992, all sectors).
SMUS87 – US dummy variable for 1987 (1 in 1987, all sectors).
SMUS88 – US dummy variable for 1988 (1 in 1988, all sectors).
SMUS89 – US dummy variable for 1989 (1 in 1989, all sectors).
SMUS90 – US dummy variable for 1990 (1 in 1990, all sectors).
SMUS91 – US dummy variable for 1991 (1 in 1991, all sectors).
SMUS92 – US dummy variable for 1992 (1 in 1992, all sectors).

B.8. Results of investigation into German FDI

The main empirical results for Germany are summarized in Table B.7. The first column (7.1) reports our basic model for German FDI, which has a structure similar to that obtained for the UK. There is again evidence that host country output, relative unit labour costs and the level of patents registered by German corporations are important factors behind the growth of FDI. Relative labour costs appear to be better determined than in the UK equations, although the implied elasticity is a little smaller at 0.36%. The output and patents elasticities are also lower, at 0.84% and 1.3% respectively, although this may simply be because the level of patents registered by German companies grew much more rapidly over the 1980s than the number of patents registered by UK companies.

It has been argued that because the major European economies have a similar market size and costs of production, location-specific advantages may be linked to host country technological conditions (Cantwell and Sanna Randaccio, 1992). However, we failed to obtain any significant effect from indicators based on patents registered by corporations in the respective host countries.

After some experimentation we found that financial effects were best captured by a relative factor price term, given by the ratio of the user cost of capital for German corporations to foreign unit labour costs. (In effect this can be considered as one estimate of the real user cost of capital.) A 1% rise in the cost of capital is estimated to eventually led to a 0.34% reduction in the level of investment, other things being equal. We were unable to obtain a significant effect from either an interest gearing term or from net corporate indebtedness. The results in Barrell, Pain and Hubert (1995) suggest that such terms primarily affect investment in developing locations outside Europe.

Finally, we also obtain a significant effect from our proxy variable to capture the impact of currency variability. The term EXCH takes the value of unity for those countries whose currencies are linked to Germany, either through a formal arrangement such the Exchange Rate Mechanism of the EMS, or informally, as is the Austrian schilling. The variable is zero for the UK and Spain, prior to ERM entry in 1990, and zero for the US throughout the sample period. The reported positive co-efficient suggests that German corporations value exchange rate stability, and is consistent with the notion that Germany may be the final market for some goods produced elsewhere within Europe.

The single market indicator is introduced in column (2.2). As with the UK, we again obtain a significant positive co-efficient, although it is somewhat smaller than that for the UK. The inclusion of the SM variable generates a drop in the elasticities on patents and the user cost of capital. The significance of the term provides an indication that German investment in the EU has, on average across sectors and countries, been higher than might otherwise have been expected since 1987.

Table B.7.   The determinants of German FDI: empirical results (sample period 1980–92)

Dependent variable: ln(FDI)

	(7.1)	(7.2)	(7.3)	(7.4)	(7.5)
ln(FDI)$_{t-1}$	0.4513 (8.4)	0.4430 (8.2)	0.4511 (8.6)	0.4426 (8.2)	0.4436 (8.2)
ln(Y)$_t$	0.4630 (3.8)	0.4755 (3.9)	0.3700 (2.9)	0.5022 (4.1)	0.3854 (3.1)
ln(REL)$_t$	0.1999 (1.9)	0.1973 (1.9)	0.2464 (2.3)	0.2565 (2.2)	0.2059 (1.9)
ln(PAT)$_t$	0.7162 (5.9)	0.6271 (5.1)	0.6358 (4.8)	0.6762 (5.4)	0.7419 (5.9)
ln(REC)$_t$	-0.1861 (3.2)	-0.1051 (1.5)	-0.1680 (2.3)	-0.1332 (1.9)	-0.1400 (2.0)
EXCH$_t$	0.1140 (2.5)	0.1317 (2.8)	0.1205 (2.7)	0.1327 (2.9)	0.1192 (2.6)
SM$_t$		0.0393 (2.9)		0.0248 (1.6)	
SMCH$_t$			-0.0625 (1.1)		
SMME$_t$			-0.0642 (1.1)		
SMEE$_t$			0.0181 (0.3)		
SMTR$_t$			0.1451 (2.2)		
SMOM$_t$			0.0748 (1.3)		
SMDS$_t$			0.0069 (0.1)		
SMFS$_t$			0.2391 (3.7)		
SMUS$_t$				-0.0315 (1.2)	
SMOE$_t$				-0.0311 (1.3)	
SMIND$_t$					0.0154 (0.4)
SMSER$_t$					0.1229 (2.5)
	0.972	0.973	0.973	0.973	0.973
Standard error	0.2274	0.2267	0.2236	0.2266	0.2272

Variable definitions
FDI – Stock of German FDI (US$ million, 1990 prices).
Y – Sectoral output (US$ million, 1990 prices).
REL – Relative German/foreign unit labour costs.
PAT – Stock of German sectoral patents (three-year cumulation).
REC – German user cost of capital relative to foreign labour costs.
EXCH – Dummy variable for fixed bilateral exchange rate (1 for ERM members and Austria).
SM – Sectoral single market indicator for EU (zero before 1987).
SMOE – Sectoral single market indicator for Austria (zero before 1987).
SMUS – Sectoral single market indicator for US (zero before 1987).
SMCH – Dummy variable for EU chemicals (1 from 1987–92).
SMME – Dummy variable for EU mechanical engineering (1 from 1987–92).
SMEE – Dummy variable for EU electronics (1 from 1987–92).
SMTR – Dummy variable for EU transport (1 from 1987–92).
SMOM – Dummy variable for EU other manufacturing (1 from 1987–92).
SMDS – Dummy variable for EU distribution (1 from 1987–92).
SMFS – Dummy variable for EU financial services (1 from 1987–92).
SMIND = SMCH + SMME + SMEE + SMTR +SMOM
SMSER = SMDS + SMFS

The tests reported so far have explored the possibility of variation within sectors across countries and time. It is also possible to recast the German equations to test either for variation within countries across sectors and time, or for variation through time. A test for variation within countries is reported in the first column of Table B.8. Here we have included separate dummies for each EU country, set to unity from 1987 onwards. The SM variable is also included. The impact of the single market on each sector, within each country, can be calculated from the respective co-efficients on these terms, although some care is required in interpreting the findings, since the country dummies will pick up all the factors that have changed within each country since 1987.

The national dummies are negative in all cases. However, for most countries this is offset, in some sectors at least, by the positive co-efficient on the SM variable. Even so, the implied single market effects differ markedly between countries. For the UK, the co-efficient on the dummy SMUK is smaller than the positive co-efficient on SM. This means that German investment in all sectors in the UK has been higher than might otherwise have been expected since the start of the single market programme. For Italy, the co-efficient on SMIT is slightly greater than that on SM. This means that in those sectors for which SM is unity (mechanical engineering) German investment has been lower than might be expected. However, in those sectors for which SM takes the value two or three, German investment has been higher than expected.

Table B.8.   Testing for geographical and time variation in EU (German FDI) (sample period 1980–92)

Dependent variable: ln(FDI)$_t$

	(8.1)		(8.2)
ln(FDI)$_{t-1}$	0.4286 (7.9)	ln(FDI)$_{t-1}$	0.3967 (6.8)
ln(Y)$_t$	0.5089 (4.1)	ln(Y)$_t$	0.4641 (3.6)
ln(REL)$_t$	0.2177 (2.0)	ln(REL)$_t$	0.3148 (2.8)
ln(PAT)$_t$	0.6354 (5.3)	ln(PAT)$_t$	0.5767 (4.4)
ln(REC)$_t$	-0.1746 (2.4)	ln(REC)$_t$	-0.1317 (1.7)
EXCH$_t$	0.0915 (1.9)	EXCH$_t$	0.0932 (2.0)
SM$_t$	0.1086 (3.8)	SM$_t$	0.1179 (4.0)
SMBL$_t$	-0.3406 (3.8)	SM87$_t$	-0.3366 (4.1)
SMUK$_t$	-0.0222 (0.3)	SM88$_t$	-0.2337 (2.8)
SMFR$_t$	-0.3206 (3.6)	SM89$_t$	-0.1575 (2.0)
SMIT$_t$	-0.1272 (1.5)	SM90$_t$	-0.1597 (1.9)
SMNL$_t$	-0.2171 (2.6)	SM91$_t$	-0.1143 (1.4)
SMSP$_t$	-0.2351 (2.7)	SM92$_t$	-0.0911 (1.1)
$\overline{R^2}$	0.976	$\overline{R^2}$	0.973
Standard error	0.2222	Standard error	0.2255
Test	2.760	Test	2.91

Variable definitions

FDI – Stock of German FDI (US$ million, 1990 prices).
Y – Sectoral output (US$ million, 1990 prices).
REL – Relative German/foreign unit labour costs.
PAT – Stock of German sectoral patents (three-year cumulation).
REC – German user cost of capital relative to foreign labour costs.
EXCH – Dummy variable for fixed bilateral exchange rate (1 for ERM members and Austria).
SM – Sectoral single market indicator for EU (zero before 1987).
SMBL – Belgium/Lux dummy variable (1 over 1987–92).
SMUK – UK dummy variable (1 over 1987–92).
SMFR – France dummy variable (1 over 1987–92).
SMIT – Italy dummy variable (1 over 1987–92).
SMNL – Netherlands dummy variable (1 over 1987–92).
SMSP – Spain/Portugal dummy variable (1 over 1987–92).
SM87 – EU dummy variable for 1987 (1 in 1987, all sectors).
SM88 – EU dummy variable for 1988 (1 in 1988, all sectors).
SM89 – EU dummy variable for 1989 (1 in 1989, all sectors).
SM90 – EU dummy variable for 1990 (1 in 1990, all sectors).
SM91 – EU dummy variable for 1991 (1 in 1991, all sectors).
SM92 – EU dummy variable for 1992 (1 in 1992, all sectors).

In (8.2) of Table B.8 separate time dummies were introduced alongside the single market indicator. The dummies are set to unity for all EU countries and sectors, for each year from 1987 to 1992. As with the earlier UK estimates, the overall results are consistent with the expectation that the effects of the single market on the level of German direct investment have built up gradually over time. Although each time dummy has a negative co-efficient, this is more than offset, for most sectors, by the size of the positive co-efficient on the SM variable. The full matrix of the implied sector and time effects is reported in the lower panel of Table B.9. This illustrates that investment has been higher than expected in four sectors (those with a ranking of 3 in SM) since 1987, and higher than expected in another two sectors since 1988. However investment within mechanical engineering is shown to have been lower than might otherwise have been expected in all years until 1991.

Table B.9.   The impact of the single market on German FDI by country and time

	B/L	UK	F	I	NL	E
Chemicals	-0.1234	0.1950	-0.1034	0.0901	0.0001	-0.0179
Mechanical engineering	-0.2320	0.0864	-0.2120	-0.0186	-0.1085	-0.1265
Electrical	-0.0147	0.3036	0.0052	0.1987	0.1088	0.0907
Transport equipment	-0.0147	0.3036	0.0052	0.1987	0.1088	0.0907
Other manufacturing	-0.0147	0.3036	0.0052	0.1987	0.1088	0.0907
Distribution	-0.1234	0.1950	-0.1034	0.0901	0.0001	-0.0179
Financial and other services	-0.0147	0.3036	0.0052	0.1987	0.1088	0.0907

	1987	1988	1989	1990	1991	1992
Chemicals	-0.1008	0.0002	0.0783	0.0761	0.1215	0.1447
Mechanical engineering	-0.2187	-0.1158	-0.0396	-0.0418	0.0004	0.0268
Electrical	0.0171	0.1200	0.1962	0.1940	0.2394	0.2626
Transport equipment	0.0171	0.1200	0.1962	0.1940	0.2394	0.2626
Other manufacturing	0.0171	0.1200	0.1962	0.1940	0.2394	0.2626
Distribution	-0.1008	0.0002	0.0783	0.0761	0.1215	0.1447
Financial and other services	0.0171	0.1200	0.1962	0.1940	0.2394	0.2626

Table B.10.   Testing for time variation in the EU, the US and Austria (German FDI)

EU		US		Austria	
SM$_t$	0.1153 (3.9)				
SM87$_t$	-0.3796 (4.4)	SMUS87$_t$	-0.0360 (0.4)	SMOE87$_t$	-0.1175 (1.2)
SM88$_t$	-0.2796 (3.2)	SMUS88$_t$	-0.2021 (1.9)	1MOE88$_t$	-0.0545 (0.5)
SM89$_t$	-0.2034 (2.3)	SMUS89$_t$	-0.0467 (0.4)	SMOE89$_t$	-0.1189 (1.2)
SM90$_t$	-0.2203 (2.4)	SMUS90$_t$	-0.1386 (1.2)	SMOE90$_t$	-0.0741 (0.7)
SM91$_t$	-0.1764 (1.9)	SMUS91$_t$	-0.1076 (1.0)	SMOE91$_t$	-0.0574 (0.5)
SM92$_t$	-0.1581 (1.6)	SMUS92$_t$	-0.2013 (1.7)	SMOE92	-0.0388 (-0.3)
$\overline{R^2}$			0.973		
Standard error			0.2258		
Significance of dummies			Chi(6)= 5.57		Chi (6)= 2.24

Variable definitions

SM –‾Sectoral single market indicator for EU (zero before 1987).
SM87 – EU dummy variable for 1987 (1 in 1987, all sectors).
SM88 – EU dummy variable for 1988 (1 in 1988, all sectors).
SM89 – EU dummy variable for 1989 (1 in 1989, all sectors).
SM90 – EU dummy variable for 1990 (1 in 1990, all sectors).
SM91 – EU dummy variable for 1991 (1 in 1991, all sectors).
SM92 – EU dummy variable for 1992 (1 in 1992, all sectors).
SMj87 – dummy variable for 1987 (1 in 1987, all sectors), (j = US,OE).
SMj88 – dummy variable for 1988 (1 in 1988, all sectors), (j = US,OE).
SMj89 – dummy variable for 1989 (1 in 1989, all sectors), (j = US,OE).
SMj90 – dummy variable for 1990 (1 in 1990, all sectors), (j = US,OE).
SMj91 – dummy variable for 1991 (1 in 1991, all sectors), (j = US,OE).
SMj92 – dummy variable for 1992 (1 in 1992, all sectors), (j = US,OE).

B.9.   Evaluating the impact of the single market on intra-EU FDI

Using the estimated relationships with the SM variable it is possible to calculate the effect of the SMP on the stock of UK and German FDI in the European Union. The use of the estimated parameters from a model with an explicit indicator for the single market is to be preferred to the alternative of inspecting the pattern of the residuals from a model without such an indicator. This is because such residuals will reflect the impact of all factors otherwise unaccounted for in estimation. Other structural changes, such as the impact of the opening of Eastern Europe, could easily affect the time pattern of the residuals.

All the reported regressions for UK direct investment can be expressed as:

$$\ln(FDI)_t = \alpha \ln(FDI)_{t-1} + \beta \ SM_t + \ldots\ldots \qquad [9]$$

Any quantitative evaluation of the estimated impact of the SM variable on particular sectors has to take account of the presence of the lagged dependent variable. At any given period the overall implied direct effect of the single market on the stock of direct investment in a particular sector can be calculated from the regression co-efficients using:

$$SMIMPACT = \lambda\beta\sum_{1}^{n}\alpha^{(i-1)} \tag{10}$$

where λ varies between 1–3 and n denotes the number of periods from the start of the SMP to the time at which the impact of the programme is estimated. Our illustrative calculations are for 1992, so that n=6.

It is similarly possible to use the estimated relationships with the SM variable and the EU country dummies to calculate the effect of the SMP on the stock of German FDI in any particular sector within a Member State. Again, it is important to emphasize that such estimates need to be treated with particular caution, not only because the overall single market impact will also arise from the output effect, but also because the country dummies may be picking up additional effects unrelated to the single market.

All the reported regressions take the form of [11] where j denotes each EU Member State.

$$\ln(FDI)_t = \alpha \ln(FDI)_{t-1} + \beta\ SM_t + \delta\ SMj_t + \ldots\ldots \tag{11}$$

In estimating the impact of the single market, account needs to be taken of the lagged dependent variable. At any given period, the overall effect of the programme on the stock of direct investment in a particular sector and a particular country can be calculated as:

$$SMIMPACT = (\delta + \lambda\beta)\sum_{1}^{n}\alpha^{(i-1)} \tag{12}$$

where λ varies between 1–3 and n denotes the number of periods from the start of the programme to the time at which the impact of the programme is estimated. Our illustrative calculations are for 1992, so that n=6. For simplicity we use column 2.1 in Table B.7, although there are obviously a number of other possible specifications that could be used to produce such calculations.
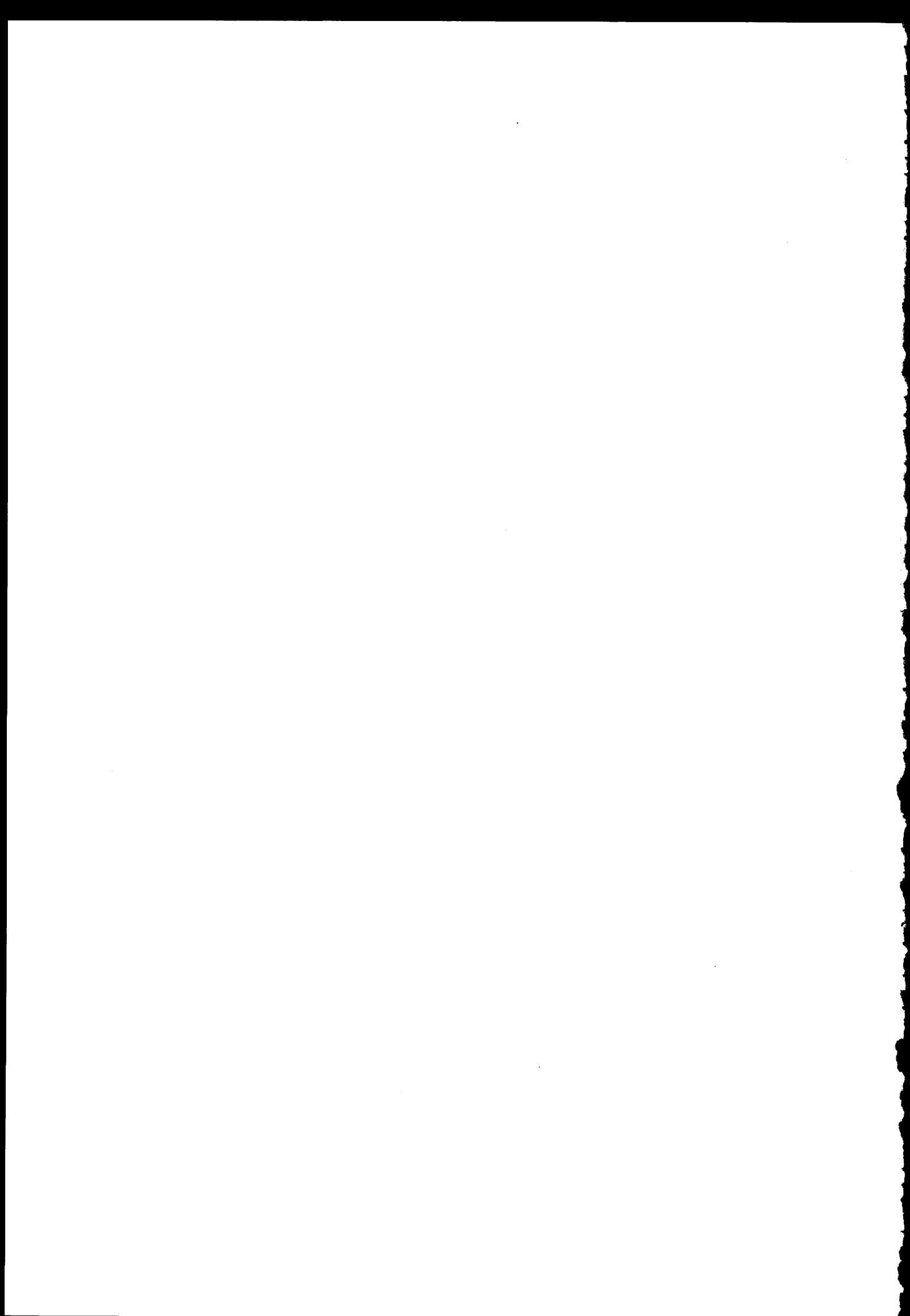
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