

# EUROPEAN ECONOMY

COMMISSION OF THE EUROPEAN COMMUNITIES  
DIRECTORATE-GENERAL FOR ECONOMIC AND FINANCIAL AFFAIRS



## **Developments on the labour market in the Community**

**Results of a survey covering employers and employees**

## **Quest**

**A macroeconomic model for the countries  
of the European Community as part of the world economy**

*European Economy* appears four times a year. It contains important reports and communications from the Commission to the Council and to the Parliament on the economic situation and developments. In addition, *European Economy* presents reports and studies on problems concerning economic policy.

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**Commission of the European Communities**

# **EUROPEAN ECONOMY**

**Directorate-General for Economic and Financial Affairs**

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## Abbreviations and symbols used

### *Countries*

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

### *Currencies*

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

### *Other abbreviations*

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

## **Summary**

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## **Part I**

# **Developments on the labour market in the Community**

## **Results of a survey covering employers and employees<sup>1</sup>**

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<sup>1</sup> The surveys were carried out on behalf of the Directorate-General for Economic and Financial Affairs of the Commission of the European Communities. The results were processed by Michel Devilliers, Claus F. Hofmann and Franz-Josef Klein. The statistical work was carried out by Michel Biart, Nando Callegari and Astrid Jungmann.



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## A. Summary of the most important results and conclusions

### A.1. Employment policy context

In 1989 the Commission carried out a comprehensive empirical study (*ad hoc* survey) of particular aspects of the labour market. The survey overlaps in part with that carried out in 1985/86 (see *European Economy*, No 27, March 1986).

Since the mid-1980s, the Community has been following a stable growth path characterized by rising employment and falling unemployment. The number of wage and salary earners increased by almost 10 million between 1984 and 1990. On account of the increase in the total labour force due to demographic developments and to a higher participation rate, unemployment did not decline to the same extent although a drop of almost 3 million was recorded. However, at 8,5 %, (12 million jobless), unemployment in the Community is still too high. Further determined efforts to bring it down are needed.

An essential prerequisite for the success of labour market policy is continued growth. The Community's major assets — completion of the internal market, catching-up process for the less favoured countries and economic and monetary union — will remain a source of considerable growth potential in the Community. In addition, the opening-up of Central and Eastern Europe and German reunification may stimulate growth. The prospects for a continuation in the medium term of the current growth trend of some 3,5 % are, therefore, favourable.

It is crucial to the continued success of labour-market policy that the very positive impact of growth on employment should be maintained or even enhanced. The employment threshold, i.e. the rate of increase in real GDP beyond which there is a net increase in employment, has fallen from 4,2 % in the 1960s to 2 %. With a growth path of around 3,5 %, an annual increase in employment of over 1 % can be achieved, sufficient to reduce the unemployment rate annually by just under one percentage point.

The main reasons why growth has generated more employment are:

1. The moderate rise in real wages in the 1980s: real wages grew less fast than both labour productivity and total factor productivity. There was a noticeable increase in investment. The trends of relative factor prices and capital profitability were conducive to employment.

2. The sectoral shift to the more employment-intensive services sector became easier and intensified.

3. The increased adaptability of labour markets.

The survey concentrates entirely on this last point. Generally, the need for labour markets to be more adaptable is no longer disputed. But there is a lack of detailed data which cannot (yet) be met by official statistics. The survey is meant to help fill this gap so as to provide labour-market policymakers and parties to collective agreements with the information they need. Attention focused mainly on working hours and skills.

### A.2. Working hours and operating times in the Community

The European Community is one of the most prosperous regions of the world, and this is reflected in workers' incomes and hours of work. The working lifetime has been reduced by longer periods of education and training and by earlier retirement. In many Member States, persons in full-time employment no longer work the standard 40-hour week. The established vested rights of workers include four to six weeks' annual holidays. In particular, women are crowding on to the labour market in greater numbers and are increasingly seeking part-time work or flexible working hours in order to be able to match family and career aspirations. Overall, a secular trend towards shorter individual working hours and increased leisure can be observed.

On the other hand, operational requirements (high capital intensity of production, new production processes, increasing and expanding services) are necessitating longer operating times, the advantage being not only that production is cheaper but also that, through flexible working hours, more people can be employed at the same workplace — a desirable development given the continuing large oversupply of labour. Further, if operating time is extended, output can be raised without expanding the capital stock. Macro-economically, this signifies additional growth potential on the supply side.

These conflicting trends — longer operating times and shorter working hours — present new challenges for the organization of work, the policy on working time and labour-market policy. With the prospect of the completion of the internal market by 1992, differences in working hours and operating times between Member States have a bearing on product and locational competitiveness.



The Commission's *ad hoc* 1989 labour-market survey sought to elicit information on current working hours and operating times, the working hours which employees would like and managements' intentions, thereby improving the transparency of labour-market developments.

#### A.2.1. Weekly operating times longer than weekly working hours

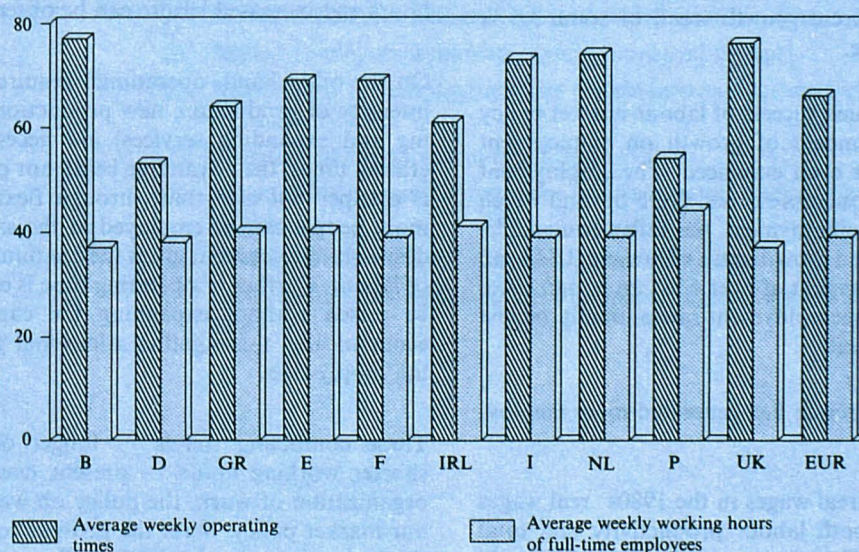
From a statistical angle, the attempt to ascertain the operating times of production plants in the Member States broke new ground. Such information was not previously available. Even so, the results of the survey should be interpreted with caution, since operating times were investigated by size class only: seasonal and cyclical influences are not identified, and also figures on annual operating times are not available. Although a common conception of questionnaires has been developed with the participating research institutes due to regional particularities, however, a few points have been changed in the national questionnaires. Therefore, over- or under-estimations of average operating times may have occurred. The nature of the results achieved by the survey, nevertheless, seems plausible concerning the individual member countries. The average weekly operating times

derived from the survey results can be used primarily for comparing the structure of operating hours in Member States. However, these results should be viewed as no more than trend indications.

As regards industry in the Community, it transpires that the average operating times of production plants differ markedly from the average weekly working hours of persons employed full time. In other words, operating times and working hours are already decoupled from each other.

The average contractually agreed working week for a full-time industrial employee in the Community is 39 hours. With the exception of Portugal (44 hours a week), the figures for the Member States are fairly closely grouped, (37 to 41 hours a week). Much larger differences are to be found concerning the operating times of production plants. For most countries, operating times are between 61 and 77 hours a week. Noticeably shorter operating times are reported in only two countries, the Federal Republic of Germany (53 hours) and Portugal (54 hours). It is noteworthy that German industry, which is highly competitive, has the shortest operating time. Industrial operating time in the four 'catching-up' countries (Portugal, Spain, Ireland and Greece) is also shorter than in the other Member States.

GRAPH 1: Operating times and working hours  
(industry as a whole)



Source: EC *ad hoc* labour market survey.



The reasons why operating times vary within the Community are to be found first of all in differing industrial structures and in the size of industrial establishments. The survey has looked into these aspects. Further, companies were asked directly about the reasons for not extending operating time.

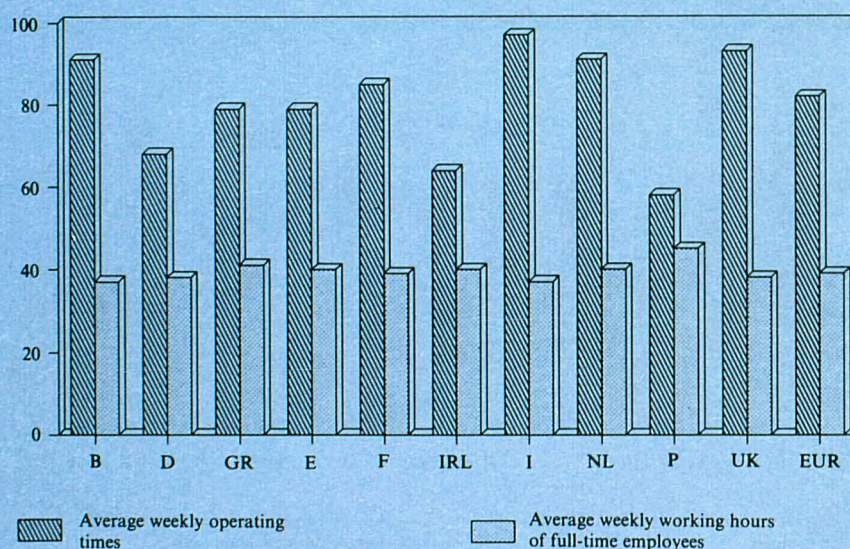
The results for the three main industrial groupings (basic materials and producer goods, investment goods, and consumer goods) show that operating time depends on the product and/or production processes involved. Operating time is longest in the basic materials and producer goods industries. Continuous production processes are represented in this sector to a disproportionate frequent degree. The decoupling of working hours and operating time is most pronounced here. In the investment goods and consumer goods industries, the decoupling is less pronounced. It is worth noting, however, that operating time in the consumer goods industry in Belgium, the Netherlands and the United Kingdom is a great deal longer than in the other Member States. For these three countries, and for Ireland and Italy, the same is true in the investment goods industry.

However, according to the survey results, the length of operating time is also determined by the size of the industrial establishment. Smaller plants (up to 200 employees) have consistently shorter operating times than larger ones (over 200 employees). Fairly large firms (500 to 1 000 employees) and large firms (over 1 000 employees) operate for much longer periods.

In the case of retailing, the survey focused on shop opening hours. The differences between Member States are not so marked here as with operating time in industry. Shop opening hours ranged from 45 hours a week on average in Spain to 58 hours in the United Kingdom. The average working week of full-time staff in retailing is less than 40 hours, except in Spain and Portugal. In retailing too, therefore, opening hours and working hours are decoupled.

Industrial firms in the Community cited existing collective agreements, insufficient demand and statutory provisions on working hours as the three main reasons why working hours could not be extended. A shortage of skilled personnel or

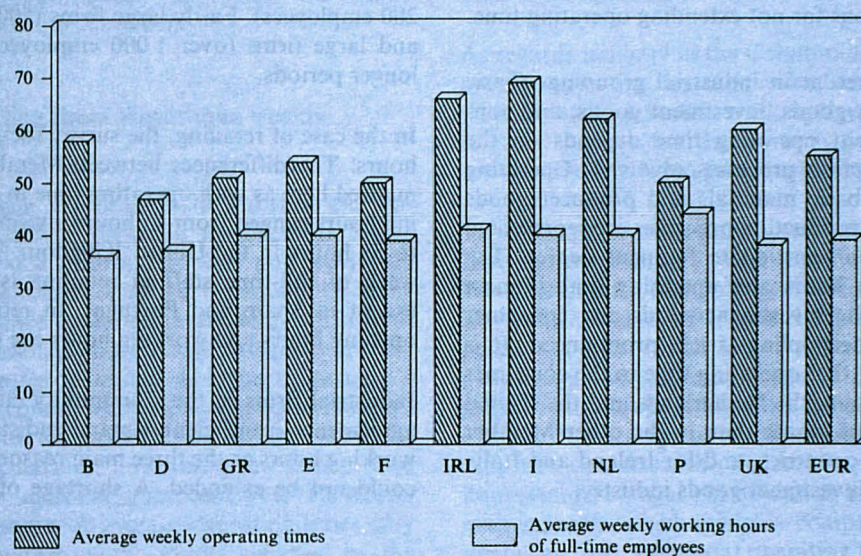
**GRAPH 2: Operating times and working hours**  
(basic materials and producer goods industries)



Source: EC ad hoc labour market survey.

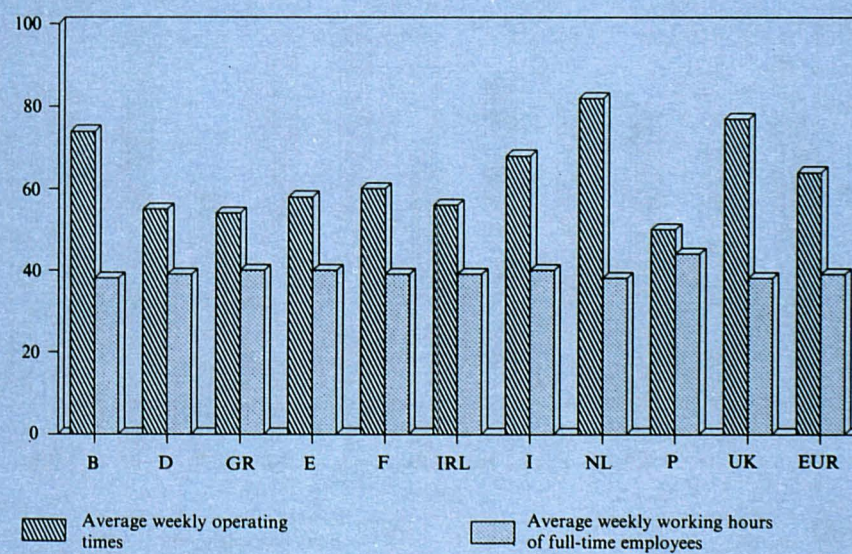


**GRAPH 3: Operating times and working hours**  
(investment goods industry)



Source: EC ad hoc labour market survey.

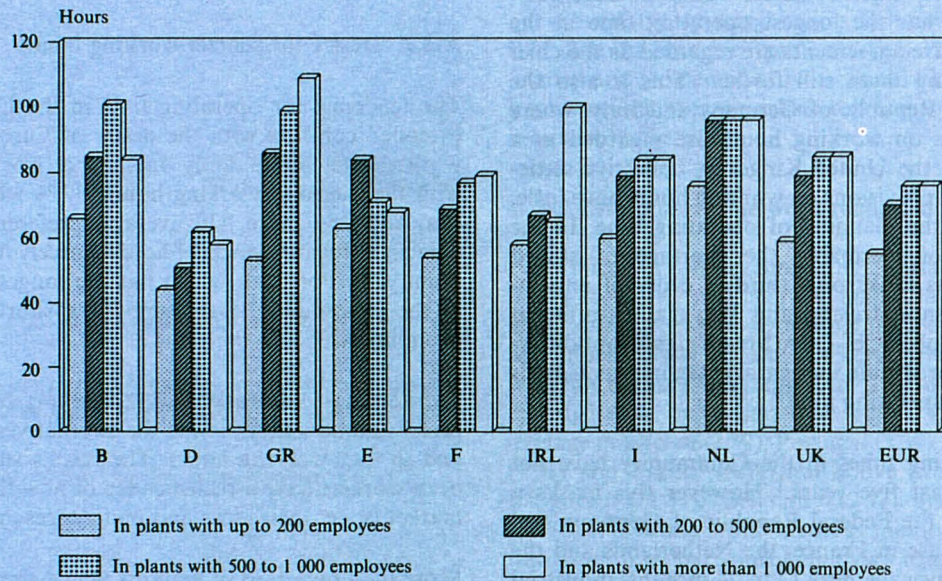
**GRAPH 4: Operating times and working hours**  
(consumer goods industry)



Source: EC ad hoc labour market survey.

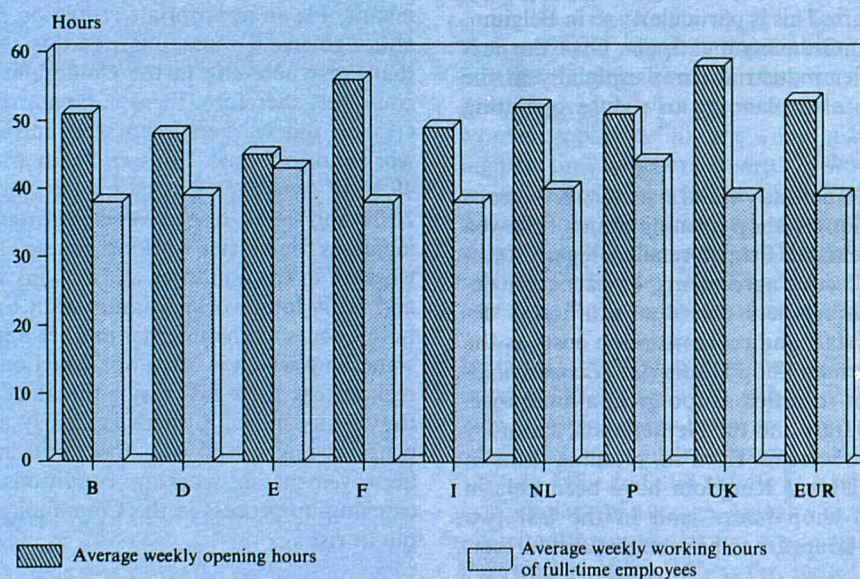


**GRAPH 5: Average operating time in industry**  
(by size class)



Source: EC ad hoc labour market survey.

**GRAPH 6: Average opening hours and working hours in retail trade**



Source: EC ad hoc labour market survey.

applicants was a less important factor. The reorganization costs involved in extending operating time are also of secondary importance. Broken down by Member States, the importance of the individual obstacles varies considerably. In Belgium, which has the longest operating time in the Community, collective agreements are regarded as the chief obstacle to extending them still further. This is also the case in the Federal Republic of Germany and Italy, where statutory provisions on working hours are regarded as a further obstacle. In the United Kingdom, collective settlements and statutory provisions on working hours have little, if any, bearing on the planning of operating time. In the Federal Republic of Germany, the shortage of skilled employees/applicants ranks only third in order of importance. In Spain, France, Ireland and Portugal, insufficient demand is the chief obstacle. There are no significant differences between the three main industrial categories as regards obstacles to longer operating time.

On average, operating times in the Community have not changed over the last five years.<sup>1</sup> However this masks a decline in Belgium, the Federal Republic of Germany and Spain, and an increase in France, the Netherlands and the United Kingdom. Over the next 12 to 24 months, industrial firms in the Community are planning to extend operating times, the sole exceptions being the Federal Republic of Germany and Ireland, where firms are expecting them to decline.

By size class, it transpired that, especially in smaller industrial firms (up to 500 employees), operating time has contracted over the last five years. This is particularly so in Belgium, the Federal Republic of Germany and Spain. Over the next 12 to 24 months smaller industrial firms especially in the last two countries, are also planning to reduce operating times.

The retail trade in the Community views statutory provisions as a major obstacle to longer shop opening hours, followed closely by insufficient demand. Belgian retailers regard statutory provisions and collective agreements, as particular deterrents, while German retailers consider insufficient demand, a lack of skilled staff and reorganization costs as the main obstacles. The German Shop Hours Act (*Ladenschlußgesetz*) is apparently not regarded as too great a hindrance. By contrast, in France, Italy and the Netherlands, statutory controls top the list of obstacles. Even so, retailing firms in France, Italy and the United Kingdom have been able in recent years to extend shop hours, and in the last two countries shop opening hours are to be extended still further.

In the other Member States, there have been hardly any changes in shop hours in recent years, and, at most, only a slight extension is planned.

#### A.2.2. Desire for shorter working hours

The tendency for operating time in the Community to be extended conflicts with the desire of European workers to work shorter hours. Only one-half of workers are satisfied with their current working hours; 37 % would gladly work less, and 9 % more. On average, preferences of men and women as regards working hours scarcely differ in the Community. In Portugal, which has the longest working hours in the Community, the desire for a shorter week is most pronounced.

Workers were also asked what working hours they would prefer and how they viewed the alternatives of higher wages and shorter working hours. The results suggest that European workers have a realistic idea of how flexible the labour market is, i.e. their ideas and preferences are not illusions.

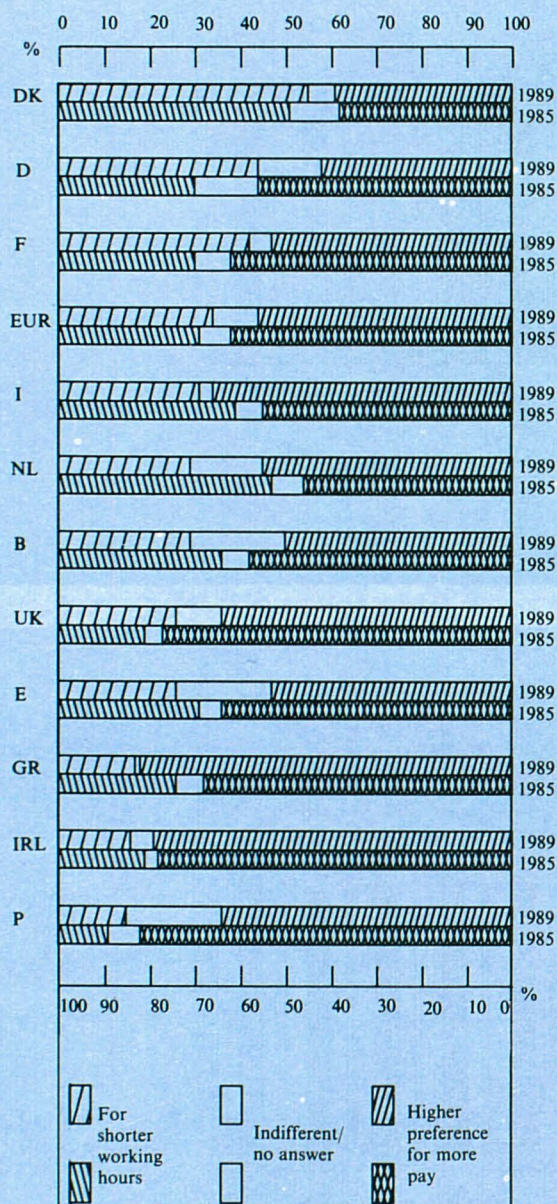
More than one-third of workers would prefer shorter hours to higher wages. This represents an increase of three percentage points over the 1985 finding. The preference for shorter working hours as opposed to higher wages has increased particularly strongly in the Federal Republic of Germany and France. In the less favoured countries, i.e. Spain, Greece, Ireland and Portugal, workers were less willing than in 1985 (with the exception of Portugal) to forego a nominal rise in income for an appropriate reduction in the working hours, although in all four countries this reluctance was greater than anywhere else in the Community. In these low-wage countries, therefore, there is greater pressure for wage increases. But workers in these countries would also like to work shorter hours. Thus, in Spain and Portugal, 42 % and 49 % of workers want a shorter working week, but only 26 % and 15 % respectively are prepared to forego wage increases for shorter working hours. These results show that workers in the countries and regions with fairly low wages and fairly long working hours want to catch up quickly on both counts as the internal market approaches completion, something which is often not taken on board by those who reckon that there is a major threat of 'social dumping'. As the results indicate, there is clearly a risk that economic progress might lead to a too rapid increase in wages and improvement in working conditions. Thereby, a sound catching-up process in the Community as a whole could be put at risk.

In the more prosperous countries (Denmark, Germany and France), proportionally more workers preferred shorter working hours to higher wages than simply wanted shorter

<sup>1</sup> All dates are referenced to spring 1989, when the survey was carried out.



GRAPH 7: Higher wages or shorter working hours  
(workers' replies in %)



Source: EC *ad hoc* labour market survey 1985-89.

working hours for themselves. Solidarity with the unemployed could be a factor in their thinking.

Taking the weighted average of answers from the workers questioned, the working week is 36 hours. For male workers it is 38 hours, and for female workers 32 hours. All workers — men and women equally — would like to work one hour less a week on average, which represents 2,8 % of total man-hours worked.

### A.2.3. More part-time work requested

Part-time work is an important variable where working hours are concerned, since it makes labour markets more adaptable, decouples operating time and working hours, and more closely reflects workers' preferences concerning working hours. On average, 15 % of workers in the Community work on a part-time basis. The figure is below average in Greece (2 %), Portugal (5 %), Italy (6 %), Ireland (7 %) and France (8 %) but above average in the United Kingdom (21 %), Belgium (22 %) and the Netherlands (27 %). Part-time work involves mainly women with only one third of all part-time employees being men.

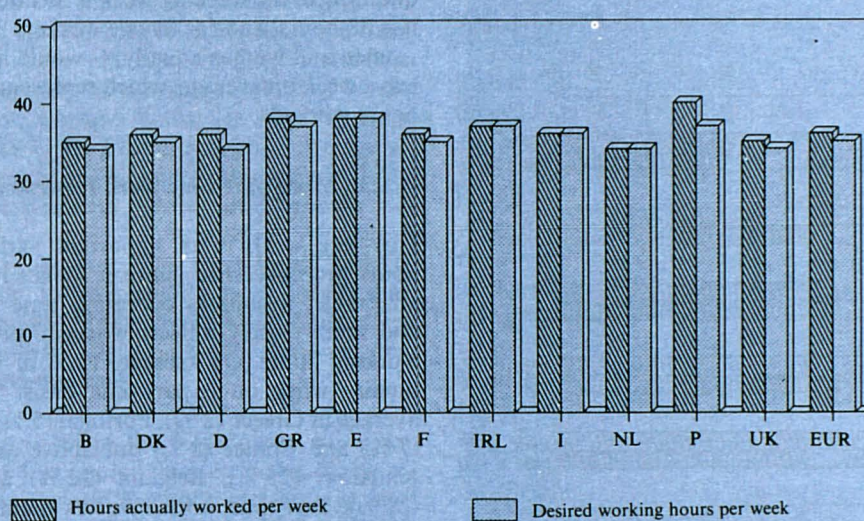
According to the survey results, every fifth full-time employee in the Community would prefer a part-time job to a full-time job. Of full-time employees, 21 % would prefer a part-time job, and of part-time employees 30 % would rather have a full-time job. If these preferences could be fully accommodated, this would make up by itself an additional job potential of 3,5 %.

For men and women, the additional job potential is on balance roughly the same. However, the desire for a change is much greater where women are concerned. One-third of women employed full time would gladly contemplate working part time while one quarter of women working part time would rather have a full time job. The corresponding figures for men are one-sixth and around two-thirds. This is an indication that the part-time labour market for men is still relatively underdeveloped and that, at present, the bulk of part-time work for men can be classified as involuntary.

In the *ad hoc* 1985 labour-market survey industrial employers indicated that about 3 % of all full-time jobs could be split into part-time jobs. However, the proportion of part-time employees in industry showed little, if any, change from 1985 to 1989 and still stands at 6 % (15 % in the economy as a whole). On average, industry in the Community has not exploited the potential for greater adaptability afforded by part-time working. Moreover, industry's employment plans for the next 24 months do not point to any reversal in trend. The further planned expansion of employment will focus in particular on skilled full-time workers.

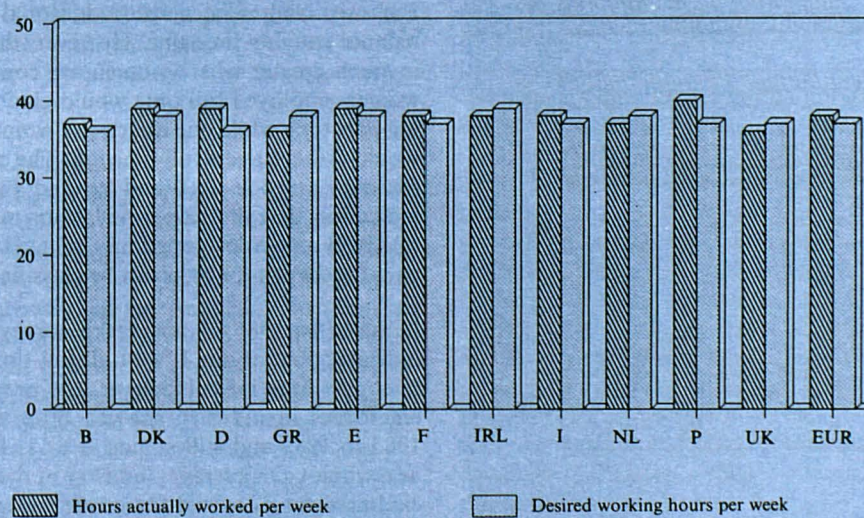


**GRAPH 8: Average working week — all employees**  
(actual and desired)



Source: EC *ad hoc* labour market survey.

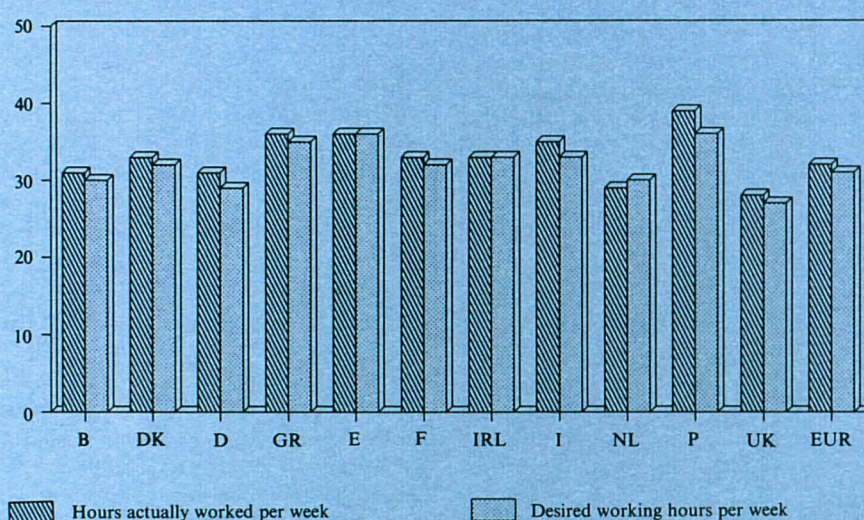
**GRAPH 9: Average working week — men**  
(actual and desired)



Source: EC *ad hoc* labour market survey.



GRAPH 10: Average working week — women  
(actual and desired)



Source: EC ad hoc labour market survey.

In the 1985 survey, retail firms indicated that 6 % of all full-time jobs could be converted into part-time jobs. The proportion of part-time employees in 1989 is the same as in 1985 (36 %). However, the results are not fully comparable (the 1985 survey covered five Member States, the 1989 survey eight Member States). With respect to the 1985 survey, the proportion of part-time employees had risen to 43 % by 1989. In these countries at least, the potential for flexibility in retailing has been exploited. Retailers' employment plans for the next 12 months show that part-time employment will increase somewhat more strongly than full-time employment.

#### A.2.4. Every fourth worker is a shift worker; great interest in flexible daytime working

Shift work is the conventional means of decoupling working hours from operating time. On average, 16 % of all workers in the Community do shift work regularly, and 8 % occasionally. The frequency of shift work is above average in the United Kingdom and Spain. Of industrial firms in the Community, 70 % resort to shift work, but only 37 % on average of the workers employed in those firms actually work shifts.

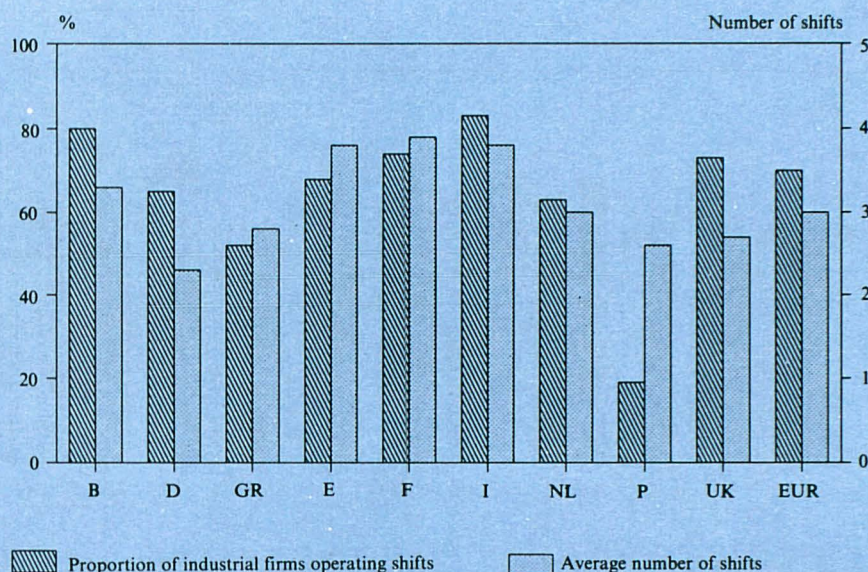
Nevertheless, shift work is more common in industry than in the other sectors of the economy. As might be expected, the basic materials and producer goods industries have the highest proportion of shift work. Considerable differences are to be found, however, between the various classes of firm. Only 42 % of smaller industrial firms (up to 200 employees) operate shifts. The proportion of shift work increases with firm size, with virtually all (94 %) large firms (1 000 employees or over) operating shifts. Thus, in the investment goods and consumer goods industries, the extension of shift work could considerably boost both production and employment, especially in smaller firms.

What are workers' views on flexible working hours? In the survey, workers were asked whether they were willing to work at certain times outside normal working hours (early or late shifts on weekdays, nights, weekends). Night work and weekend working are examined in more detail below.

Workers are surprisingly willing to work early or late shifts, the Community average being 61 % of workers questioned. The figure is noticeably lower for German (45 %) and Belgian workers (51 %). The difference between men (64 %)



GRAPH 11: Shift work in industry



Source: EC ad hoc labour market survey 1985.

and women (55 %) as regards willingness to work early/late shifts is not that great. The overall conclusion is that there is considerable scope for making working hours more flexible on weekdays.

#### A.2.5. Night work

In the Community there are, in principle, two sets of legal provisions governing night work. In Belgium and the Netherlands night work is generally prohibited, but there are exceptions for various activities. In the other Member States, night work is permissible where it is not specifically prohibited. There are no restrictions whatsoever in Denmark, Ireland and Luxembourg (except for pregnant women and nursing mothers) and in Spain.

The pattern of regulation in the various Member States is as follows:

In *Belgium* there are more exceptions for men as regards night work than for women.

In the *Netherlands*, almost the same provisions on night work apply to both men and women (pregnant women apart).

In the *Federal Republic of Germany*, night work for men is not restricted; with a few exceptions, women are not allowed to work nights.

In *Greece*, night work for women in industrial firms is generally prohibited, although there are a few exceptions.

In *France*, night work for women in industrial firms is, as a rule, prohibited, but the prohibition can be lifted by way of an extended collective agreement on the basis of the 1987 Law on the Regulation of Working Hours.

In *Italy*, night work for women is largely restricted. Collective agreements may provide for night work. Many such agreements contain exceptions to the law.

In *Portugal*, night work for women in industrial firms is generally prohibited.

In the *United Kingdom*, night work in general is not regulated by statute. Exceptions for certain groups, such as young people and women, are to be repealed.

As part of the *ad hoc* labour-market survey, data were collected on night work in the Community. The results show

that 9 % of European workers work nights regularly, and 11 % occasionally. On average, 14 % of workers are probably involved in night-work arrangements. Night work is very widespread in the United Kingdom (25 % of all workers). In the other Member States, the figure lies between 9 % and 17 %.

It comes as a surprise to learn that night work is not so common in Community industry as in the economy as a whole. Only 11 % of industrial workers do night-work, compared with 14 % of the total labour force. This does not apply to Spanish, Italian and Dutch industry, however, where night work is much more common than in the economy as a whole.

In the Community, generally, night work is twice as common among men (18 % of all male workers) than among women (9 % of all female workers). Denmark is the exception, with more women than men working nights. The proportion of employed women working nights is particularly low in the Federal Republic of Germany (3 %) on account of the statutory prohibition on night work for women, to which only a few exceptions are allowed. Night working by women is above average in the United Kingdom, Denmark, Greece and Spain. Where men are concerned the proportion of night workers is between 12 % and 19 %, although in the United Kingdom the figure is 32 %.

Workers were also asked about their willingness to work nights. On average, 22 % of all workers in the Community (25 % of men and 14 % of women) would willingly contemplate night work. There is therefore some scope for extending night work in the Community, since only 14 % of all workers are already working nights. In the individual Member States, however, the scope for more night work varies significantly. It is considerable in Denmark, Spain, France, Ireland and the United Kingdom as well as in Belgium (but only for men), a probable reason being that night work is not restricted by statute in these countries. In Germany and Italy, willingness to work nights and the volume of nights already worked balance out. In Greece, the Netherlands and Portugal, willingness to work nights is fairly insignificant as compared with the volume of nights currently worked.

#### A.2.6. Weekend work

Except in the United Kingdom, there is statutory provision in the Community for one day's rest per week, i.e. Sunday. In Spain and Portugal, there is provision for one and a half days' rest. In most Member States, a working week of five days is the norm. Even so, people also work on Saturdays, and in many Member States the practice of keeping Sunday as a rest day is coming under threat, and Sunday will be

increasingly included by companies in working-time arrangements.

According to the survey results, 71 % of European employees worked five days or five shifts a week. The proportion working less than five days/shifts was 13 %, and the proportion working more was 14 %. More than five days/shifts a week are working, in particular, in Greece, Spain, Portugal and the United Kingdom.

**Table 1**

#### Working days/shifts per week

Country	(% of workers)		
	Fewer than 5 days/shifts	5 days/shifts	more than 5 days/shifts
B	18	67	15
DK	12	83	4
D	11	75	14
GR	1	78	16
E	4	67	29
F	14	71	15
IRL	7	80	13
I	17	82	1
NL	25	68	6
P	13	54	3
UK	15	64	20
EUR	13	71	14

Source: EC ad hoc labour market survey.

#### Saturday work

On average, 38 % of workers in the Community work on Saturdays. The proportion of men and women who do so is similar (40 % and 34 % respectively), especially where Saturdays are worked on a regular basis (24 % in each case). The incidence of Saturday working is above average in the United Kingdom and Italy, involving nearly 50 % of all workers.

Saturday working in industry is relatively uncommon compared to the economy as a whole. Clearly, therefore, Saturday working occurs primarily in the services sector. Only 14 % of industrial workers work on Saturdays. But in the United Kingdom the figure is 36 %. The incidence of Saturday working is below average in German, French and Portuguese industry.



In the Community as a whole, an average of 44 % of workers questioned were willing to work on Saturdays. This is six percentage points higher than the proportion of workers already working on Saturdays. Thus, there is some potential in the Community for extending Saturday work. There are considerable differences, however, between Member States. Significantly, more workers are willing to work on Saturdays in Belgium, Denmark, France and Ireland. In Greece, Spain, the Netherlands and Portugal there is either no scope for extending Saturday work or less Saturday work is desired.

#### *Sunday work*

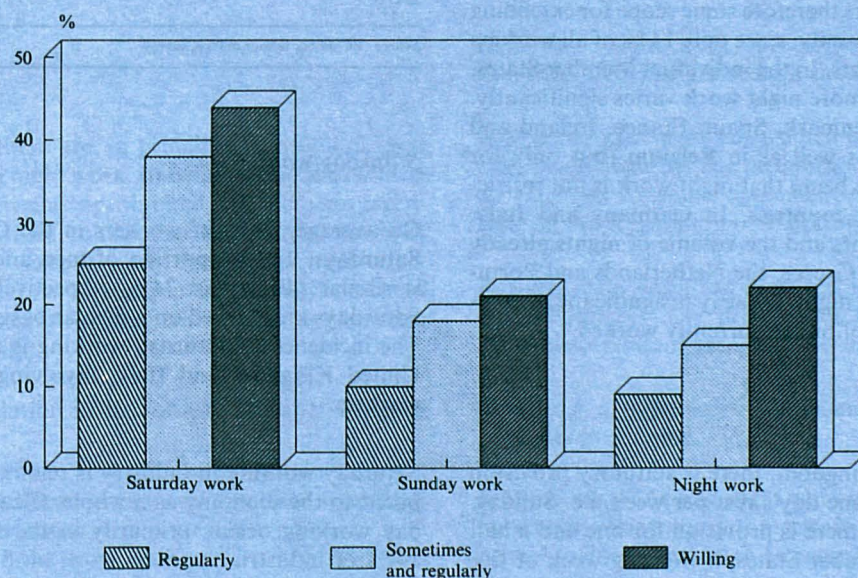
Despite the fact that Sunday is a statutory rest day in nearly all Member States, 18 % on average of all workers also work on Sundays. Only in the United Kingdom is the frequency of Sunday work above average, while the Federal Republic of Germany has the lowest incidence of Sunday working. As with Saturday work, working on a Sunday is less common in industry than in the economy as a whole (7 % of industrial employees).

There is little potential for extending Sunday work in the Community. Only in Denmark, France, Ireland and the United Kingdom are noticeably more workers prepared to work on Sundays than those who already do so. This contrasts with the situation in Greece, the Netherlands and Portugal, where people would like to see less Sunday work.

#### **A.2.7. Potential for extending operating time**

According to the survey results, the dissociation of operating time and individual working hours is already a feature of the economy. Even so, the actual extent of this phenomenon varies a great deal from one country, industry and size of firm to another. There is in fact considerable scope for extending operating time. Use of the productive capital by longer operating time for production plants can have quite a significant impact on product and locational competitiveness, especially in the context of the Community-wide internal market. Further, given the favourable investment trend of recent years and its probable continuation in the years ahead, the Community's production potential will

**GRAPH 12: Saturday, Sunday and night work in the Community**  
(% of employees)



Source: EC ad hoc labour market survey.

expand significantly, by up to 3,5 % a year by the mid-1990s. At the same time, however, the completion of the internal market, the catching-up process involving the less favoured countries and regions, the achievement of economic and monetary union and the recent opening-up and integration into the world economy of Central and Eastern Europe provide the Community with growth prospects exceeding 3,5 % a year. If these growth opportunities are to be seized, investment will have to be further stepped up. In addition, longer operating times would push back the limits on capacity utilization.

To do this, firms will need to organize working hours intelligently. Of course, this is no easy task since firms' needs and workers' desires have to be reconciled. In this respect, both sides, firms and workers, face a challenge. Flexible operating time and working hours also require a more skilled workforce, in order to ensure that such intentions are not frustrated by a shortage of skilled workers.

The decoupling of working hours and operating time is not at cross purposes with the wish expressed by workers to work one hour less per week on average. In fact, this wish and the preference for more part-time work can be met precisely through more flexible working arrangements. Overall, the preferences for shorter weekly working hours and more part-time work would generate a 5 % increase in the number of man-hours (Community average) that could be used to create extra jobs. In addition, many workers are willing to work early or late shifts on workdays. There is much less potential for more Saturday or night work. Workers would not welcome more Sunday work. Nevertheless, the signals from the survey are unambiguous: better organization of working time is necessary and possible, and it can more successfully reconcile operational requirements (longer operating time, more part-time work, and flexible working hours) to the advantage of all parties involved.

### A.3. Skill structure of labour force

The level of training of the labour force, i.e. the quality of labour as a factor of production, is crucial to the productivity and growth prospects of the economy. For individual workers, vocational experience and knowledge play a part in determining income and job opportunities. For the Community as a whole, there has been to date no comparable statistics on the vocational skills of the labour force. Among other things, the labour-market survey sought to gather for the first time Community-wide data on the skill structure of the labour force. Even so, the data must be interpreted with care, since they rely in part on self-estimation and since the

concept of vocational training differs from one Member State to another.

#### A.3.1. Two-thirds of European workers possess vocational skills

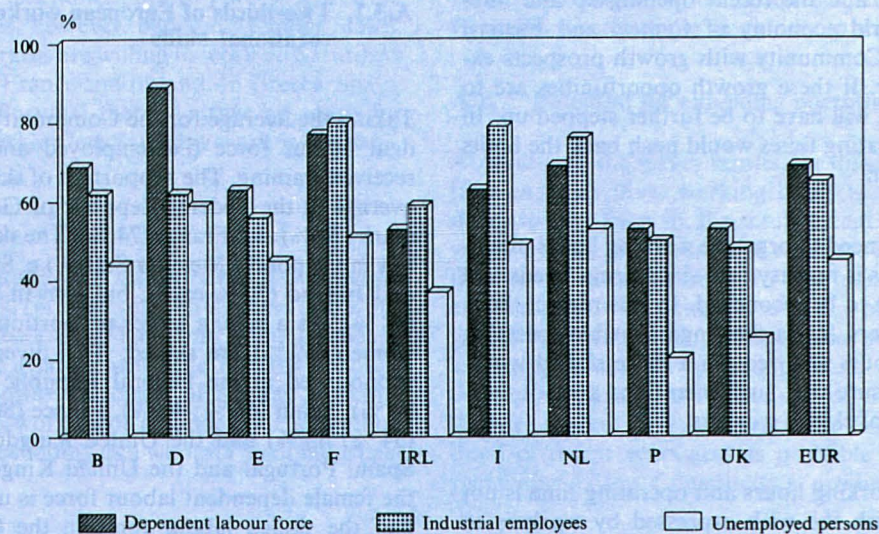
Taking the average for the Community, 66 % of the dependent labour force (i.e. employed and unemployed) have received training. The proportion of skilled workers is above average in the Federal Republic of Germany (87 %), Denmark (76 %) and France (74 %). The skill level is particularly low in the poorer Member States, i.e. Spain (57 %), Portugal and Ireland (50 % each), but also in the United Kingdom (48 %). As a rule, a larger proportion of men (70 %) than women (59 %) are skilled. This divergence is particularly pronounced in the Federal Republic of Germany (91 % : 80 %), Spain (61 % : 49 %), France (80 % : 64 %), Portugal (54 % : 43 %) and the United Kingdom (55 % : 37 %). In Spain, Portugal and the United Kingdom, more than half the female dependent labour force is unskilled. On average, half the skilled labour force in the Community acquired their skills through industrial training and half through vocational training in educational establishments. Industrial training predominates in Denmark, Portugal, the United Kingdom and the Federal Republic of Germany. In the other countries, vocational training is provided primarily in educational establishments.

There are significant differences in the occupational skills of employed and unemployed persons. Whereas only 30 % of employees have received no vocational training, the figure for the unemployed is 54 %. This disparity is particularly marked in the Federal Republic of Germany, where only 11 % of employees but 41 % of the unemployed have received no vocational training. The proportion of the unskilled unemployed is particularly high in Portugal (65 %) and the United Kingdom (75 %). These figures underline once more that retraining or further training is vital to the unemployed's chances of finding work.

Taking the average for the Community, workers who have received vocational training also exercise a skilled activity, with 69 % possessing a vocational qualification and 64 % carrying on a skilled activity. In some Member States, however, the situation differs a great deal. In Belgium, the Federal Republic of Germany, Spain and France in particular, workers indicating that they possessed a skill significantly outnumbered those who said that they exercised a skilled activity. This raises the question of whether the skill potential on these labour markets has not been exhausted or whether the vocational skills have become obsolete.

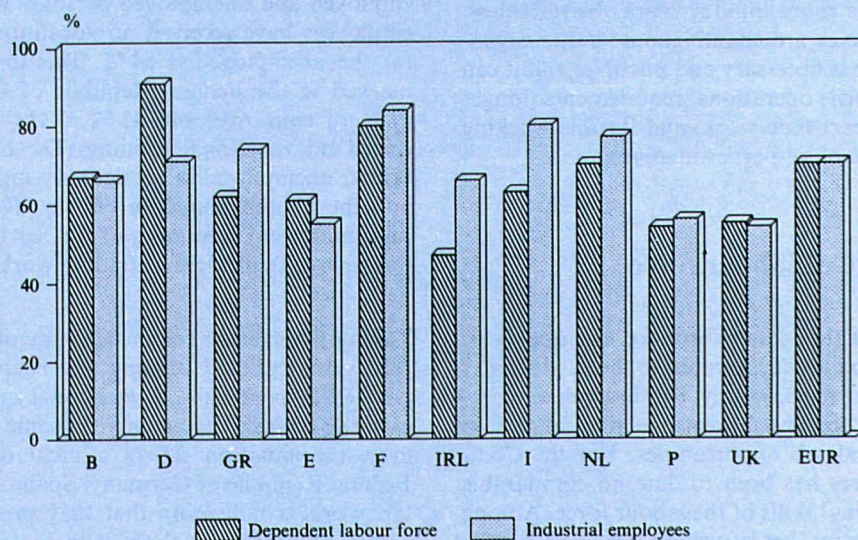


**GRAPH 13: Skill structure of dependent labour force, industrial employees and unemployed persons**  
(proportion of skilled persons in %)



Source: EC ad hoc labour market survey.

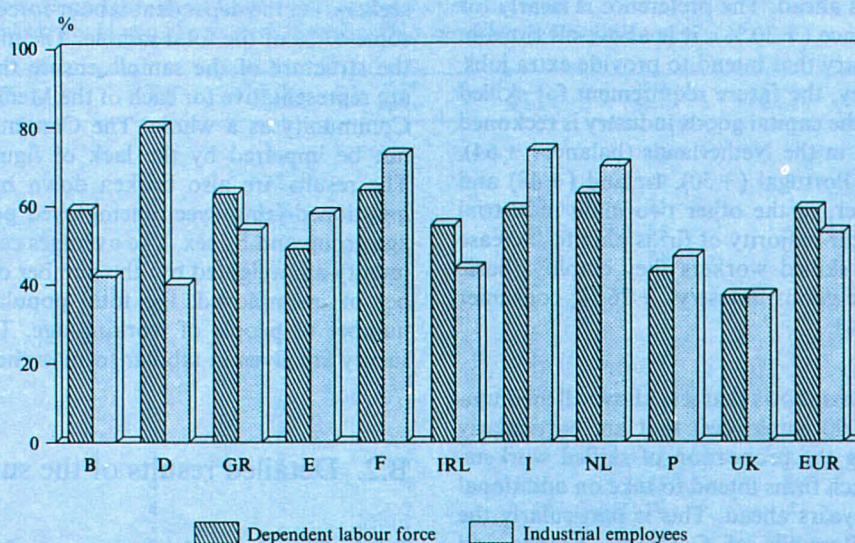
**GRAPH 14: Skill structure of dependent labour force and industrial employees — men**  
(proportion of skilled persons in %)



Source: EC ad hoc labour market survey.



**GRAPH 15: Skill structure of dependent labour force and industrial employees — women**  
(proportion of skilled persons in %)



Source: EC ad hoc labour market survey.

### A.3.2. Skill structure of employees in industry and retailing

On average, the skill structure of industrial employees in the Communities is broadly similar to that of all employees. In Belgium and the Federal Republic of Germany, industry employs relatively few skilled workers compared with the Community average and with the average national skills level. In the United Kingdom, only 38 % of industrial employees are skilled. On the other hand, the proportion of skilled workers in industry is particularly high in France, Italy and the Netherlands.

In the case of industrial employees, as with all employees, a skill differential exists between men and women. Whereas two-thirds of men exercise a skilled activity, only about one-half of the women employed in industry do so. The exception is Spain, where, although the general skill level (56 %) is comparatively low, 58 % of women and only 55 % of men perform skilled jobs.

By category of industry, it is the investment goods industry in the Community which has the largest proportion of skilled employees (71 %), whereas the corresponding figure for the

consumer goods industry is only just over one half. This is the situation in nearly all the Member States. Only in Italy and the United Kingdom is the proportion of skilled workers highest in the basic materials and producer goods industries while in Ireland the skill level is lowest in the investment goods industry.

In the retail trade, taking the average for the Community, three quarters of employees exercise a skilled activity. This applies almost equally to men (78 %) and women (72 %). The proportion of skilled employees in retailing in Portugal, Spain, the Netherlands and the United Kingdom is much lower than the Community average.

### A.3.3. Favourable employment prospects for skilled workers

According to the survey, industrial firms plan on balance to employ more skilled workers over the next two years, predominantly on a full-time basis. A significant expansion of skilled part-time jobs is planned by industrial firms in the Federal Republic of Germany and the Netherlands only.

In almost all Member States, except Greece, Ireland and Portugal, industry intends to reduce the number of full-time and part-time jobs for unskilled workers. Jobs necessitating vocational skills will be increasingly offered by all branches of industry in the years ahead. The preference is clearly for full-time jobs. On balance (+30 %), it is above all firms in the capital goods industry that intend to provide extra jobs. According to the survey, the future requirement for skilled full-time employees in the capital goods industry is reckoned to be particularly high in the Netherlands (balance: +64), Italy, Belgium (+57), Portugal (+50), Ireland (+48) and France (+47). However, in the other two main industrial groupings as well, a clear majority of firms plan to increase the number of highly skilled workers they employ (basic materials and producer goods industry: +36 %; consumer goods industry: +41 %).

A breakdown by size class shows that it is above all medium-sized firms (200 to 1 000 employees) that are particularly interested in expanding the proportion of skilled workers. On balance, 29 % of such firms intend to take on additional skilled workers in the years ahead. This is particularly the case in the Federal Republic of Germany, France and Belgium, as well as in Spain, where, however, it is small and medium-sized firms which will take on most additional skilled workers. Whereas in the United Kingdom and Ireland skilled labour is sought in particular by small firms, in Italy and Greece it is large firms which on balance plan to step up their recruitment of skilled labour in the years ahead. In the Netherlands, the results indicate an unmistakable need for skilled workers, irrespective of company size. As regards unskilled workers, the desire to reduce the proportion of such workers tends to increase in line with company size.

Similarly, in the retail trade, firms are planning to increase in the next two years the number of skilled workers employed by them on both a full-time and a part-time basis. The number of jobs for unskilled workers could even be reduced in some countries (Belgium, France and the Netherlands).

## B. Survey among employees

### B.1. Methodology

The survey was carried out in all Member States, except in Luxembourg, in the first quarter of 1989. A list of the institutes involved and the questionnaire used can be found in the Annex. The sample of those questioned was established at random or on the basis of quotas. The sample size

in each country was generally between 1 000 and 2 000 people.<sup>1</sup>

The survey was aimed at employees and unemployed job-seekers, i.e. the dependent labour force. These accounted for some 47 % of the total sample. The number questioned and the structure of the sample ensure that the overall results are representative for each of the Member States and for the Community as a whole. The Community averages should not be impaired by the lack of figures for Luxembourg. The results are also broken down by category of person questioned (employee, unemployed person, job-seeker), by age group and by sex. The averages calculated for the Community are weighted by: the number of employed, the number of unemployed, the total population respectively the number of people of working age. The full results of the survey are given in tabular form in the Annex.

### B.2. Detailed results of the survey

#### B.2.1. Duration and arrangement of working time

The scope for arranging working hours is important for the improved adaptability of labour markets. In this connection, workers' preferences concerning working hours and a firm's operational requirements should be more closely reconciled. The decoupling of working hours and operating time means that better use can be made of the capital stock, and this, given the lack of jobs and the high level of capacity utilization, is of major importance for employment policy.

The results of the survey carried out in the spring of 1989 in all Community countries indicate that most workers in the Community would like shorter average working hours than had been agreed in their contracts of employment (see Table 2). Taking the weighted average of workers' answers, the contractually agreed number of hours to be worked each week is 36 hours for the Community as a whole.

The results also reveal that this average applies to all age groups. In other words, the parties to collective agreements and the parties to individual contracts make little, if any, use of the option of determining working hours according to age group, a possibility which would be of interest in solving labour market problems. However, assessment of the results by sex clearly brings out the fact that part-time work is frequently agreed for women.

<sup>1</sup> A total of 5 421 people were questioned in Greece, and 822 in the Netherlands.

**Table 2****Actual and preferred working time**

a: What are your present working hours according to your contract of employment?

b: How many hours per week would you like to work if the hourly wage rate remained the same?

Country	Question	< 20 hours	20-24 hours	25-29 hours	30-34 hours	35-40 hours	41-45 hours	> 45 hours	Weighted average
B	a	7	11	3	7	60	7	6	35
	b	7	13	7	16	47	8	3	34
DK	a	3	5	5	7	71	3	6	36
	b	3	7	7	19	55	5	3	34
D	a	6	7	2	3	71	8	3	36
	b	7	9	6	24	50	3	2	34
GR	a	2	3	3	4	70	9	9	38
	b	2	2	5	16	55	11	9	37
E	a	2	2	2	5	63	13	12	38
	b	2	3	4	12	60	12	8	38
F	a	6	5	7	5	59	9	9	36
	b	5	8	8	14	53	6	6	35
IRL	a	3	4	7	3	62	8	13	37
	b	4	5	4	8	55	9	15	35
I	a	4	5	2	4	76	4	5	36
	b	5	5	3	14	64	3	6	36
NL	a	14	9	4	8	54	5	7	34
	b	11	12	2	12	46	8	9	34
P	a	3	1	1	4	36	38	17	40
	b	3	4	2	19	48	21	3	37
UK	a	11	7	2	5	51	8	14	35
	b	13	9	6	16	37	10	10	34
EUR	a	7	6	3	5	62	9	8	36
	b	7	8	5	17	51	7	6	35

Source: EC ad hoc labour market survey.

**B.2.2. Employees' desired working hours**

The preference expressed by employees is to work 35 hours a week, and this would mean reducing current working hours by an average of one hour (2,8 %).

As a general rule, this applies to all age groups. The results do, of course, reveal an unmistakable differentiation by age group. For example, it is primarily older workers who, on average, would prefer a working week that was up to 10 % shorter than that generally agreed. Taking the average for the Community, the desire for a shorter working week than that contractually agreed is found among both men and women, albeit to a differing degree.

According to the survey results, 63 % of employees (70 % of men and 48 % of women) have a contractually agreed

working week of between 35 and 40 hours, and 21 % (11 % of men and 42 % of women) have a working week of less than 34 hours; this also includes part-time contracts of employment, which are more common among women. No significant differentiation by age is evident from the results.

However, only 51 % of the employees questioned are happy with a working week of between 35 and 40 hours while 37 % would like to work for 34 hours or less each week.

While this desire is equally common among men and women, the results indicate that the various age groups have differing preferences. The pattern would appear to be that shorter working hours are preferred with increasing age.

More than a third (34 %) of people in full-time employment are even ready to forego a nominal increase in their income

in the next wage round, if their working hours are reduced accordingly. The proportion of workers who prefer actual wage increases to shorter working hours is five percentage points down on the 1985 survey (1989: 56 %; 1985: 61 %).

Men and women differ in their opinions on this matter, however, with fewer men (32 %) than women (37 %) willing to forego an actual wage increase if their working hours were reduced. Older employees would, of course, also prefer shorter working hours. This probably has something to do with the financial burden of keeping a family.

Alongside their wish for shorter working hours, workers are still surprisingly willing, within certain limits, to work more flexible hours. In 1989, as in 1985, 52 % of workers were in favour of flexibility if working hours were reduced accordingly. Since 1985, the proportion of workers opposed to greater flexibility has remained unchanged at 45 %. Workers in Europe indicate a greater readiness (61 %) to start their day's work earlier or to finish later, and this would enable individual working hours to be decoupled from company operating time. With such an arrangement, the same capital stock could provide more employment and the daily utilization time of plants could be increased considerably.

The survey results reveal a marked readiness to work flexible hours among young employees under 35 years of age (66 %); conversely, the readiness to organize working hours more flexibly is much less apparent among older employees and among women.

There is less readiness to work on Saturdays. Nevertheless, the survey shows that a comparatively high proportion of workers (44 %) are still prepared to work on Saturdays, while there is no unsatisfied demand for Sunday work (21 % are prepared to work on Sundays and 20 % actually do work on Sunday).

Of course, the figures for men and women differ. The survey results again indicate clearly a greater flexibility among men, with 47 % of them willing to work on Saturdays and 24 % on Sundays. Of women, only 40 % are at present willing to work on Saturdays and 20 % on Sundays. Willingness to work on Saturdays and/or Sundays is most marked among younger employees.

### **B.2.3. Full-time, part-time and temporary work**

The survey also dealt with the structure of employment conditions. Although the question of temporary contracts has often been discussed recently as a means of achieving greater labour market adaptability, only some 9 % of em-

ployees in the Community are currently on temporary contracts, while 88 % of them have at some time concluded a contract of employment of indefinite duration. For a third of workers with a temporary contract, the contract period runs for up to half a year. In the Member States in which the proportion of temporary contracts is disproportionately high, seasonal work is likely to have been a major factor (see Table 3).

There are no striking differences between men and women in terms of their readiness to enter into temporary contracts. Differences do exist, however, between the various age groups: 15 % of younger employees (below 35 years of age) are prepared to accept temporary contracts, but such readiness decreases — to the point of almost total rejection — with increasing age. This readiness on the part of younger workers means that better results could undoubtedly be achieved, especially in the fight against youth unemployment, if a larger number of temporary contracts of employment were made available.

Part-time work is of major importance to the labour market. The proportion of women who work part time is traditionally very high (women 34 %; men 8 %). If full account were taken of the wishes of women, this proportion would be even higher (37 %), whereas the corresponding figure for men would be unchanged at 8 %. However, when broken down by age group, the results indicate that the desire to work part time increases with increasing age. Almost half of employees aged 60 or so would like to work part time.

The proportion of part-time workers averages 15 % for the Community as whole. Of course, the percentages differ widely from country to country (2 % in Greece compared with 27 % in the Netherlands); this is probably due to the specific socio-economic structures in each Member State. Taking the preference of full-time workers for full-time or part-time work, 22 % would still prefer a part-time job to their present full-time job and would thus provide employment opportunities for those seeking work. Even so, 37 % of part-time workers would like a full-time job (see Table 4).

Since workers are, on balance, willing to work shorter hours (whether by reducing their individual hours or by switching from full-time to part-time employment), a purely arithmetical calculation yields a large number of man-hours (5 %) which could be used to provide additional employment. Of course, it is important not to overlook the problems which are specific to each region, sector, type of skill and company. Consequently, the strain on labour markets could be eased only if they became correspondingly more adaptable.

Table 3

## Nature and duration of jobs

	If you are presently employed, is your job permanent or temporary?		If your job is temporary, what is the expected duration (in months)?			
	Permanent (%)	Temporary (%)	0-6	7-12	≤ 12	> 12
B	92	7	0	26	26	45
DK	93	7	29	21	50	44
D	90	4	20	17	37	48
GR	89	10	57	37	94	6
E	69	30	62	17	79	6
F	93	7	39	38	77	10
IRL	86	12	28	14	42	58
I	88	11	:	:	75	25
NL	87	7	64	27	90	10
P	81	13	34	7	41	8
UK	91	6	44	16	60	9
EUR	88	9	45	21	68	17

Source: EC ad hoc labour market survey.

Table 4

## Full- and part-time

	Full-time (%)	Part-time (%)	Would you prefer part-time employment? (full-time workers)		Would you prefer to work full-time? (part-time workers)		Would you prefer to work full- or part-time? (unemployed)	
			No	Yes	Yes	No	Full-time	Part-time
B	71	22	77	13	19	47	51	30
DK	83	17	84	13	6	89	52	27
D	82	18	83	17	8	92	22	19
GR	97	2	86	14	78	22	89	10
E	85	15	73	24	63	35	72	24
F	92	8	77	19	89	11	28	70
IRL	87	7	90	7	48	44	87	11
I	94	6	68	32	49	51	:	:
NL	69	27	86	12	18	78	39	54
P	94	5	70	24	40	29	76	23
UK	78	21	75	25	11	89	71	20
EUR	85	15	77	22	37	61	52	35

Source: EC ad hoc labour market survey.



### B.2.4. Unemployment

The survey was also designed to shed more light on the scale of unemployment. In the Community, 29 % of the dependent labour force questioned stated that, since 1980, they had been unemployed for at least four weeks. A relatively low percentage of this group had been unemployed in the Federal Republic of Germany (17 %), the United Kingdom (25 %) and Portugal (25 %). The figures for Greece, Ireland and Spain were much higher (39 %, 41 % and 55 % respectively). However, half of all the members of the dependent labour force who had been affected by unemployment since 1980 were unemployed only once. Those in Greece, Spain, Ireland and Italy reported higher-than-average multiple unemployment (three times or more). Over half of all those affected by unemployment since 1980 had been unemployed in total for more than one year, and one third for more than two years (see Graph 16).

Taking the breakdown by sex, the survey results show that 38 % of women and only 26 % of men had been unemployed for at least four weeks since 1980. The scale of unemployment since 1980 also varied considerably depending on the age group concerned: 44 % of young people and only 9 % of employees in the highest age group indicated that they had been unemployed for at least four weeks. This result should not, of course, be overstated given the greater mobility of young people. The figures for long-term unemployment confirm that it is especially the over-50s who are worst affected. The survey results show that the problem of long-term unemployment is greater among women than among men.

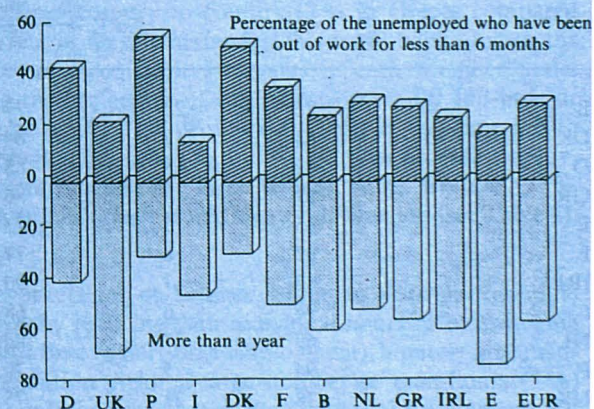
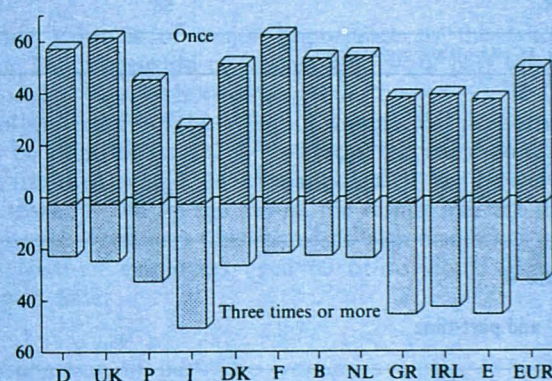
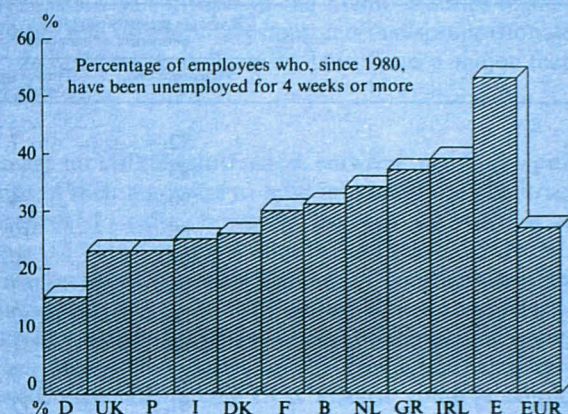
### B.2.5. Skills of workers and the unemployed

Two-thirds of the dependent labour force have received vocational training. In Germany only 13 % have not received any training, whereas the figure in Spain, Ireland, Portugal and the United Kingdom ranges from 42 % to 52 %. A lack of vocational skills considerably heightens the risk of unemployment. While 54 % of the unemployed received no training, this was true of only 30 % of those in employment.

The skill disparities between men and women are one of the reasons why women are more threatened by unemployment. The survey results indicate that only 59 % of women have received some form of training and are employed in a job appropriate to that training, the figure for men being 70 %.

An analysis of the figures broken down by age group shows that the proportion of employees having received training increases until they are in their 50s. More industrial training probably plays an important role in this respect. However,

GRAPH 16: Unemployment since 1980



Source: EC ad hoc labour market survey.

younger employees consider that they are, if anything, over-qualified for the work assigned to them. 48 % of the older employees claim to have a skilled job, a fact which points to a discrepancy between the level of skill possessed and the activity actually performed and which indicates an additional risk factor contributing to long-term unemployment in the event of redundancy.

## C. Surveys among firms

### C.1. Industry

#### C.1.1. Methodology

Responsibility for the technical organization of the survey among firms lay with the same national institutes which conduct the monthly EC business surveys. The survey was carried out in the first half of 1989 in all Member States except Denmark and Luxembourg. A list of the institutes involved and a copy of the questionnaire prepared by the Commission services can be found in the Annex. Altogether, more than 25 000 industrial firms took part in the survey. The survey results were also evaluated on the basis of company size applying the following breakdown: fewer than 200 employees, 200 to 499 employees, 500 to 999 employees and 1 000 or more employees. The results are weighted by size class and by main industrial category. The complete results of the survey in industry are given in the Annex.

#### C.1.2. Detailed results

##### *C.1.2.1. Structure of industrial employment (level of skills, full-time/part-time)*

Over one-third (35 %) of workers in the Community are employed in industry, of whom around 30 % are women and 70 % men (see Graph 17). According to the survey results, 94 % of all persons employed in industry (men and women) work full time. Despite the scope for greater flexibility (the 1985 survey results having indicated, on the basis of the answers given by the managers questioned, that in 41 % of industrial firms in Europe a total of 3 % of full-time jobs could be converted into part-time jobs without any noticeable adverse economic repercussions), the proportion of part-time jobs in industry did not change between 1985 and 1989, on average, in the Community. However, the trend varied from country to country. In the Federal Republic of Germany, the Netherlands and Greece, additional part-time jobs were created after 1985; in France

and the United Kingdom, however, the number of part-time jobs, and hence the proportion of such jobs in total employment, fell sharply. In particular, the number of part-time jobs is disproportionately higher in Spain (18 % of all persons employed in industry) and the Netherlands. Despite the drop in the proportion of part-time jobs after 1985 in the United Kingdom, their share remained above average in 1989 (see Graphs 17 and 18, Table 5).

In industry too, part-time jobs are largely the domain of women (two-thirds of the total). This means that, taking the average for the Community, only 2 % of men employed in industry work part time. The proportion of women employed part time in industry is above average in the Netherlands, the United Kingdom and the Federal Republic of Germany. In Spain too, where part-time work is a widespread phenomenon, the percentage of the female industrial workforce employed part time (19 %) is significantly above the Community average. At the same time, the figure for men (16 %) is only slightly below the figure for women, with the result that in Spain, unlike the situation in all other Member States, more men than women work part time in industry (see Graph 19).

There is an above average level of part-time employment in the consumer goods industries, but part-time work is less common in the basic materials and producer goods industries and in the investment goods industries. This is true of most Member States. The exceptions are: Italy, where part-time employment plays only a minor role in industry; Spain, where the proportion of part-time employment is the highest in the Community and where a comparatively large number of part-time jobs are occupied by men; and Portugal, where there are likewise more men than women in part-time work.

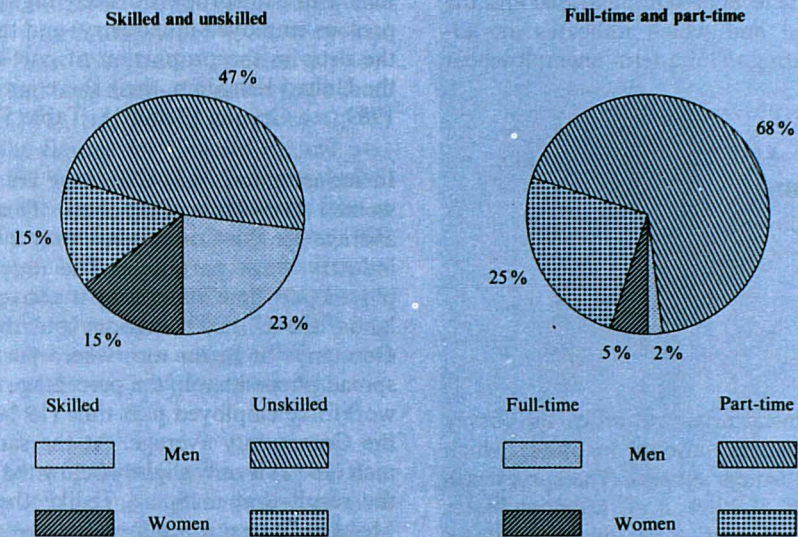
The survey results for full-time and part-time work reveal virtually no differences in structure between the various size classes of firms. Taking the average for the Community, firms in all classes report a relatively small proportion (5 to 9 %) of part-time jobs. A relationship can, however, be established between firm size and the proportion of part-time jobs.

The proportion of part-time jobs is above average in firms with up to 1 000 employees but much lower in firms with more than 1 000 employees.

Another question concerned the skill structure of persons employed in industry. According to the survey results, just under two-thirds of industrial employees are engaged in skilled work. This proportion is only slightly below the average figure recorded for the dependent labour force in the Community and underscores the high level of skills

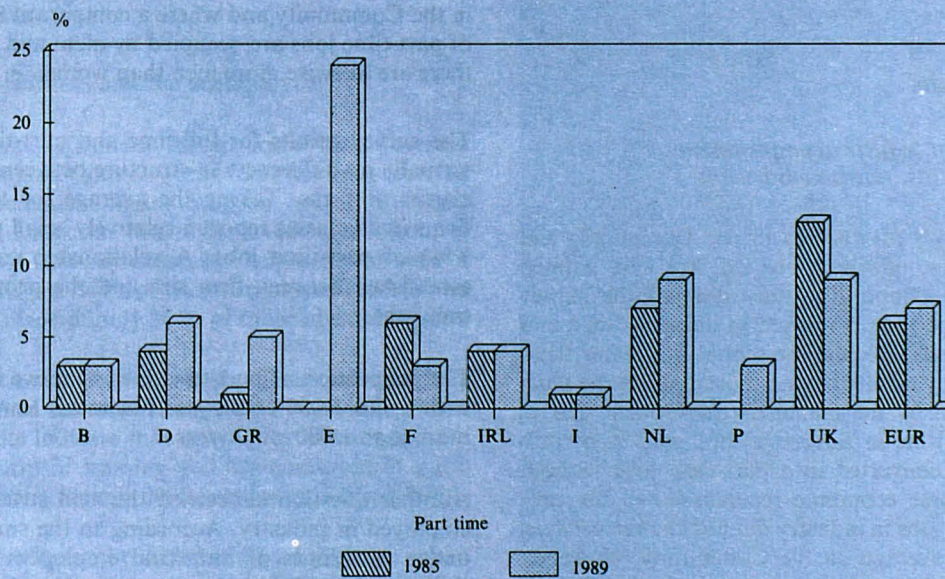


GRAPH 17: Structure of workforce in industry



Source: EC ad hoc labour market survey.

GRAPH 18: Part-time work in industry  
Development after 1985



Source: EC ad hoc labour market survey 1985 and 1989.

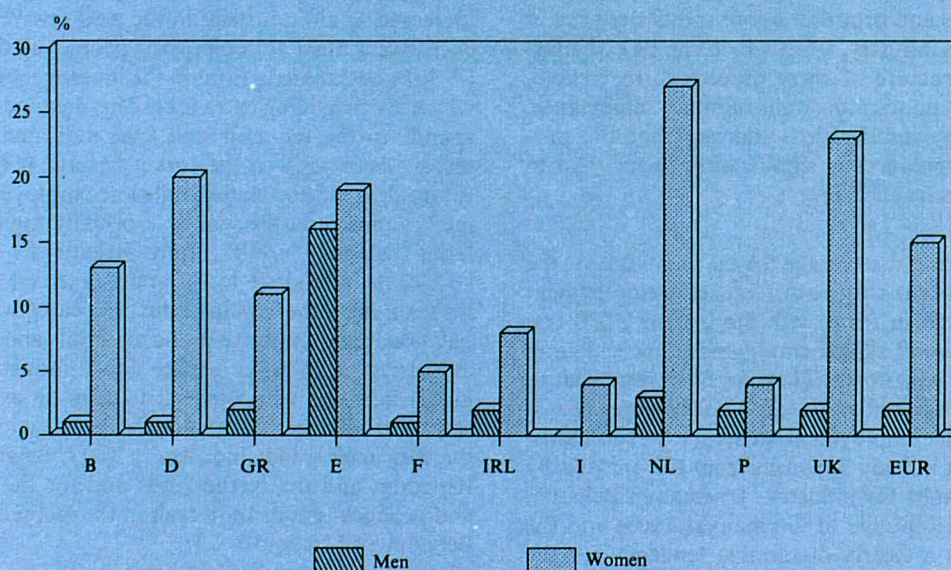


**Table 5****Structure of workforce in industry**

(%)

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
B	99	1	66	34	87	13	42	58	97	3	62	38
D	99	1	71	29	80	20	40	60	94	6	62	38
GR	98	2	74	26	89	11	54	46	95	5	67	33
E	84	16	55	45	81	19	58	42	72	18	56	44
F	99	1	84	16	95	5	73	27	97	3	80	20
IRL	98	2	66	34	92	8	44	56	96	4	59	41
I	100	0	80	20	96	4	74	26	99	1	79	21
NL	97	3	77	23	73	27	70	30	91	9	76	24
P	98	2	56	44	96	4	47	53	97	3	50	50
UK	98	2	44	56	77	23	24	76	91	9	38	62
EUR	98	2	67	33	85	15	51	49	94	6	63	37

Source: EC ad hoc labour market survey.

**GRAPH 19: Part-time work in industry**  
(men/women)

Source: EC ad hoc labour market survey.

necessary among employees if the industrial production process is to run smoothly. The skill structure differs a great deal from one Member State to another. In France, Italy and the Netherlands, the proportion of skilled workers is well above the Community average (between 76 % and 80 %). In the United Kingdom, only 38 % of those employed in industry are skilled workers. Of the dependent labour force in the United Kingdom, however, almost half indicated that they had received vocational training.

The skill structure in industry also differs significantly between men and women. While more than two-thirds of men perform a skilled activity, the figure for women is some 50 %. The percentage of female employees in industry who perform a skilled activity is particularly high in Italy (74 %), France (73 %) and the Netherlands (70 %). Compared to the situation in most other Member States, the proportion of skilled women in industry is only slightly below the proportion of skilled men. In Spain, where the proportion of industrial employees performing work is relatively low (56 %), the figure for women (58 %) is actually higher than for men (55 %) (see Graph 20).

When broken down by industrial category, the survey results indicate that, taking the average for the Community, the highest proportion of employees performing skilled work is to be found in the investment goods industry (71 %) and the lowest in the consumer goods industry (55 %). These figures are characteristic of the skill structure in virtually all Member States. In Italy and the United Kingdom, however, the proportion of employees performing skilled work is higher in the basic materials and producer goods industries than in the investment goods industry, a fact which can be explained by the particular structure of these industries. In Ireland, where the investment goods industry is of minor importance, the answers given by industrialists indicate that the proportion of skilled employees is significantly lower than in other industries (see Graph 21).

By size class, and taking the average for the Community, the survey results indicate virtually no differences in employment structure, even though in firms with more than 1 000 employees the proportion of skilled employees is lower than in firms with a smaller work-force. They do, however, point to differing structures in Member States. What emerges here is the dependence of the employment structure on the industrial structure, a fact already apparent from the analysis by main category of results for industry. Whereas in Belgium, France, the Federal Republic of Germany, Greece and the Netherlands there is a clearly discernible tendency for the proportion of skilled employees to increase with firm size, the number of skilled employees drops sharply with firm size in Spain, Italy, the United Kingdom and Ireland.

#### *C.1.2.2. Expected variation in the structure of industrial employment*

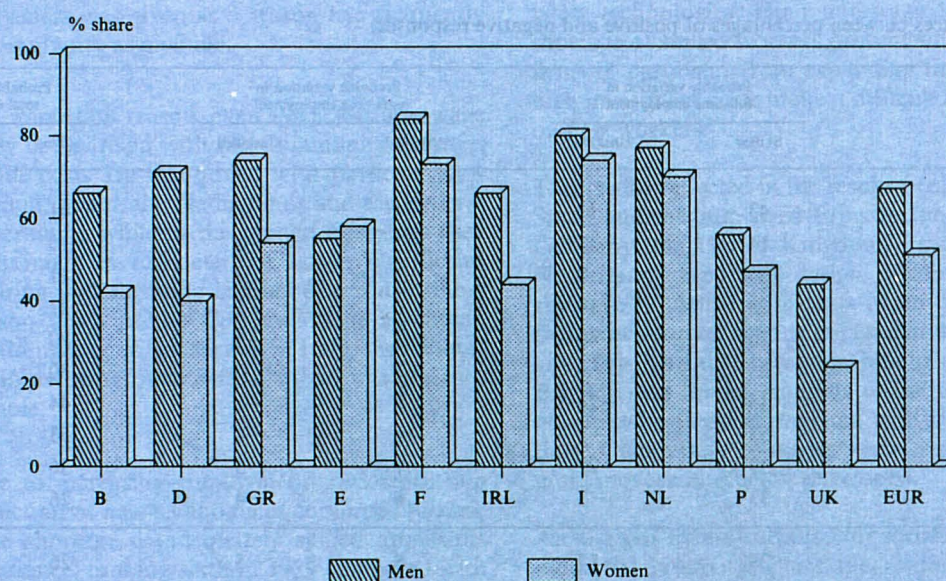
On balance, industrial firms are planning to increase over the next 24 months the number of skilled workers they employ, most of the new jobs being on a full-time basis. It is only in the Federal Republic of Germany and the Netherlands that industrial firms are planning to expand significantly the number of skilled part-time jobs. In almost all Member States, except Greece, Ireland and Portugal, industry intends on balance to reduce the number of both full-time and part-time jobs for unskilled workers (see Table 6). Although the answers given by industrial firms to the questions concerning the structure of industrial employment refer to the medium term, they must also be viewed in the context of current economic developments. Taking the average of the Community as a whole, the recent situation has been one of buoyant growth which is reflected in a steep rise in industrial employment. The results of the EC quarterly business survey in industry also suggest that employment intentions will remain positive over the next three to four months. However, the longer-term employment intentions of industrial firms, as ascertained in the survey, give a reliable picture of the employment trend in the next few years, particularly as regards the job structure which firms are striving to achieve. These longer-term employment intentions in industry once again underline the fact that the lack of vocational skills considerably increases the risk of becoming or remaining unemployed.

The supply of jobs necessitating vocational skills will be increased in all industries in the next few years. The preference is very much for employing people full time. On balance (+ 30 %), it is chiefly firms in the investment goods industries which are providing extra jobs. This demand structure corresponds to the required skill level indicated earlier for this sector. According to the survey results, it is reckoned that future demand for skilled full-time employees in the investment goods industry will be especially high in the Netherlands (balance: + 64 %), Italy, Belgium (+ 57 %), Portugal (+ 50 %), Ireland (+ 48 %) and France (+ 47 %). But also in both the other main industrial categories, there is on balance a clear majority (basic materials and producer goods industries: + 36 %; consumer goods industry: + 41 %) of industrial firms which intend to take on extra well-trained staff. On balance, the majorities are particularly large for the consumer goods industry in Italy, Belgium, the United Kingdom and the Netherlands and for the basic materials and producer goods industries in the Netherlands, Portugal, Belgium and Ireland.

A glance at the analysis of the results broken down by size class reveals that, taking the average for the Community, it

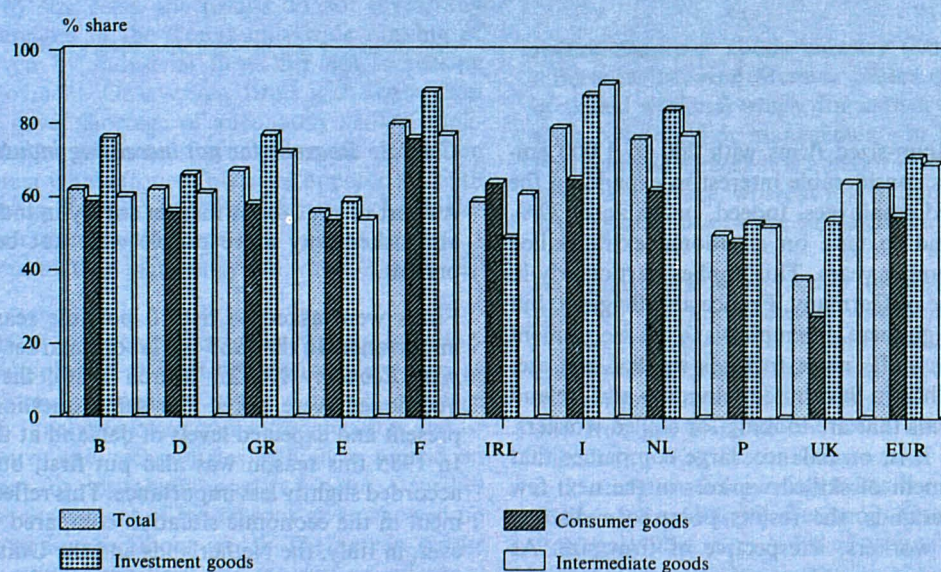


**GRAPH 20: Skilled dependent labour force in industry**  
(men/women)



Source: EC ad hoc labour market survey.

**GRAPH 21: Skilled employees in industry**  
(main industrial groups)



Source: EC ad hoc labour market survey.

**Table 6****Probable variation in employment in industry**

(balances: i.e. differences between percentages of positive and negative responses)

	Probable variation in full-time employment		Probable variation in part-time employment		Probable variation in total employment	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
B	43	-13	-4	10	41	-14
D	14	-17	15	-2	15	-16
GR	20	8	1	3	11	7
E	28	-14	0	-2	22	-12
F	20	-40	3	-14	20	-37
IRL	25	8	-1	0	30	17
I	45	-24	0	-3	44	-23
NL	53	-7	14	-8	53	-7
P	39	22	9	5	36	22
UK	33	-3	4	-4	26	-4
EUR	28	-17	6	-5	26	-16

Source: EC *ad hoc* labour market survey.

is primarily in medium-sized firms with 200 to 1 000 employees that there is considerable interest in expanding the proportion of skilled employees. Indeed, on balance, 29 % of these firms intend to take on additional extra skilled employees in the coming years. This applies particularly in the Federal Republic of Germany, France and Belgium, but also in Spain, although there the emphasis in the recruitment of skilled employees shifts more towards smaller and medium-sized firms. While in the United Kingdom and Ireland it is chiefly small firms that are looking for skilled workers, in Italy and Greece it is, on balance, large companies that will step up recruitment of skilled workers in the next few years. In the Netherlands, the results point to a distinct shortage of skilled workers, irrespective of firm size. As regards unskilled manpower, a general trend is discernible, namely the larger the firm, the greater its desire to reduce the proportion of unskilled workers.

*C.1.2.3. Reasons for not increasing industrial employment*

As part of the labour market survey in industry, firms were also asked why more people were not being taken on at present.

Firms were asked to list 10 possible reasons in order of importance. In the 1985 EC labour market survey (see *European Economy* No 27, March 1986), the industrial firms questioned were asked the same question. They put the present and expected levels of demand at the top of the list. In 1985 this reason was also put first, but in 1989 it was accorded slightly less importance. This reflected the improvement in the economic situation compared with 1985. However, in Italy, the Netherlands and the United Kingdom this reason was given more often, probably on account of a certain weakening in economic activity, particularly in Italy and the United Kingdom.



As in 1985, the second most important justification for a cautious recruitment policy was insufficient profits due to domestic and foreign competition. In France, the United Kingdom and the Federal Republic of Germany, a lack of price competitiveness was given as a reason less frequently than for the Community as a whole.

The third most important reason, as in 1985, was non-wage labour costs. By comparison with the Community average, non-wage labour costs are mentioned with particular frequency in Belgium, Spain, the Netherlands and the Federal Republic of Germany, while in the United Kingdom they were regarded as much less of a deterrent, as was 'insufficient flexibility in hiring and shedding labour' (the fourth most important reason given in the Community as a whole). Hiring and shedding labour was viewed in Italy, the Netherlands and Spain as being more difficult than in the Community as a whole.

As an obstacle to increasing employment, rationalization and the introduction of new technologies continued to rank fifth, while the shortage of adequately skilled applicants gained in importance, ranking sixth in 1989 compared with eighth in 1985. The level of direct wage costs and 'other costs' remained in seventh and eighth place respectively, while 'insufficient productive capacity' moved one position higher to rank ninth. The record level of capacity utilization in industry does not seem to be causing any insuperable difficulties as regards an expansion in employment.

Broken down by size class, the results do not reveal any significant differences in the Community-wide ranking of the reasons given by industrial firms for not increasing industrial employment. On average, firms with fewer than 500 employees gave 'shortage of adequately skilled applicants' as a reason for not increasing employment more often than industry as a whole (fourth place as opposed to sixth place). By contrast, the need to introduce new technologies or to undertake rationalization was seen by such firms as a less important reason than in industry as a whole (Graph 22).

In firms with 500 or more employees, however, the introduction of new technologies and rationalization were seen as major obstacles to an expansion of the work-force. Large firms with over 1 000 employees put rationalization and/or the introduction of new technologies as high as second on the list of reasons for not taking on more labour. A further difference in the assessment of the reasons given showed up in the case of 'non-wage labour costs'. The survey results reveal that the smaller the firm, the more it regards non-wage labour costs as an obstacle to expanding its work-force.

The survey results reveal that small and medium-sized industrial firms are highly labour-intensive and have a high proportion of skilled workers. A feature of large firms, however, is fully rationalized and capital-intensive jobs employing the latest technologies. High non-wage labour costs and the shortage of skilled workers prevent small and medium-sized firms in particular from expanding their workforces, while high investment costs make it difficult for large firms to take on new workers.

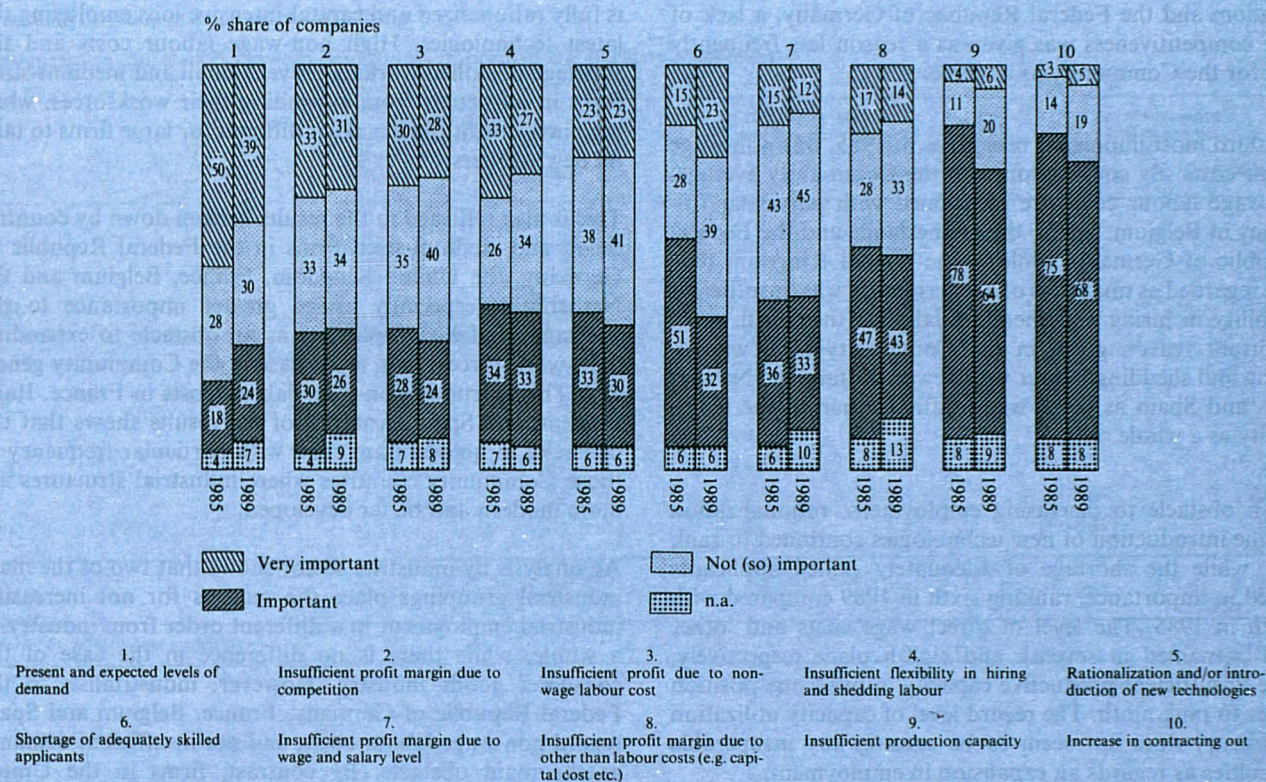
This is also reflected in the results broken down by country. Small and medium-sized firms in the Federal Republic of Germany, the United Kingdom, France, Belgium and the Netherlands especially assign greater importance to the shortage of skilled applicants as an obstacle to expanding their work-forces, than is the case in the Community generally. This is true of non-wage labour costs in France, Italy, Belgium and Spain. Analysis of the results shows that the obstacles in question are cited with particular frequency in those Community countries where industrial structures are more modern and better developed.

An analysis by industrial sector shows that two of the main industrial groupings place the reasons for not increasing industrial employment in a different order from industry as a whole, while there is no difference in the case of the consumer goods industry. However, industrialists in the Federal Republic of Germany, France, Belgium and Spain regard non-wage labour costs, and not insufficient demand, as the main obstacle. By contrast, firms in the United Kingdom are of the opinion that non-wage labour costs are not such an important factor, ranking it only ninth.

In the consumer goods industry there are also significant differences between Member States regarding the shortage of skilled workers, which, for industry as a whole, occupies sixth position. For managements in the United Kingdom, Portugal and Greece it is a major obstacle to any expansion of the work-force, whereas it is of minor importance in Italy and is placed last of the 10 reasons in Ireland.

As regards the introduction of new technologies and/or the need for rationalization, which in industry as a whole occupies fifth place, the Member States fall into two groups: one for which this factor is very important, ranking second in the list (France, United Kingdom, Belgium, Netherlands and Ireland), and one for which other obstacles are more significant, with the introduction of new technologies and rationalization being relegated to the bottom half of the list (Federal Republic of Germany, Greece, Spain, Italy and Portugal). The reasons for what is after all a very different assessment must be sought both in the structure of the consumer goods industry in these countries and in their differing economic circumstances.

GRAPH 22: Reasons for not employing more people in manufacturing industry at Community level



In contrast to firms in the other branches of industry, firms in the investment goods industry regard the lack of skilled workers as the second most important reason for not taking on additional employees. In industry as a whole, this reason comes no higher than sixth. It is above all managers in the investment goods industry in the Federal Republic of Germany, the United Kingdom, Italy, the Netherlands and Portugal who attach a great deal of importance to the lack of qualified employees as a reason for not expanding their workforce. This is because of the comparatively high proportion (71 %) of skilled jobs in this industry. On the other hand, the lower level of training of workers as a whole, particularly in Portugal, should not be underestimated in this connection. Perception of the non-wage labour cost factor, which occupies third place at the Community level, varies greatly from one country to another. Investment goods firms in the Federal Republic of Germany, Belgium

and Spain place non-wage labour costs at the top of the list, while United Kingdom, Italian and Portuguese firms consider this factor less of an obstacle, ranking it in only fifth, sixth or seventh position.

#### C.1.2.4. Working hours and operating time in industry (including holiday shutdown)

The dissociation of employees' individual working hours from plant operating time is becoming increasingly important in employment policy. The labour market survey therefore sought to obtain from industrial firms information on employee working hours and plant operating time.

The average contractually agreed working week of a full-time industrial employee in the Community is 39 hours. A



standard working week of less than 40 hours for full-time workers was reported mainly in Belgium, the Federal Republic of Germany, France, Italy, the Netherlands and the United Kingdom, while persons employed full time in Greece, Spain, Ireland and Portugal work a standard week of 40 hours or more. Nevertheless, the average contractually agreed working week for full-time industrial workers is very similar in each of the Member States, ranging from 37 to 41 hours; the only exception is Portugal, with a 44-hour week. The survey also shows that contractually agreed working hours are not determined by either the size of the firm or the branch of industry involved. In any event, in the individual Member States there are no signs of any significant differences in contractually agreed working hours from one size class to another or from one branch of industry to another.

There are substantial dissimilarities in the average length of time during which plant is in use (operating time). The Community average is 67 hours a week, but national averages range from 53 hours in the Federal Republic of Germany to 79 hours in the Netherlands. Operating times of a similar length to those in the Netherlands are found in Belgium (77 hours), Italy (77 hours) and the United Kingdom (76 hours) (see Table 7).

The differences in operating time within the Community could probably be due in the main to the divergence in industrial structures. Broken down by branch of industry, the survey results show that, taking the average for the Community, the average operating time is 79 hours in the basic materials and producer goods industries, 55 hours in the investment goods industry and 64 hours in the consumer goods industry. These facts point to a strong relationship between the scope for decoupling and the characteristics of the various branches. The prime explanation for the differences in average operating time in individual Member States is their industrial structure. Admittedly, there are also differences from one country to another in the degree of decoupling between operating time and contractually agreed working hours that are attributable to other factors. Weekly operating times range from 58 hours in Portugal to 93 hours in the United Kingdom in the basic materials and producer goods industries, from 47 hours in the Federal Republic of Germany to 69 hours in Italy in the investment goods industry, and from 50 hours in Portugal to 82 hours in the Netherlands in the consumer goods industry.

Another criterion for different operating times is the size of the firm. In the Community, firms with fewer than 200 employees have an average operating time of 55 hours a week. At 70 hours a week, the average operating time of firms with 200 to 499 employees is only slightly below the average operating time of large firms with more than 1 000 employees (75 hours a week). And so at Community level,

generally speaking, the larger the firm, the more marked the dissociation.

However, analysis of the survey results according to firm size reveals in particular that, in all size classes, industry in the Federal Republic of Germany, whose productivity is regarded as very high, has been least successful in decoupling operating time and working hours, and in German firms with up to 200 employees the average length of time during which plant is in use is only around 15 % longer than the contractually agreed individual working hours and that, at 62 hours a week, the average operating time in firms with 500 to 999 employees (the size class with the longest operating times in industry) is well below the degree of decoupling observed in the other Member States.

Further potential for making better use of capital stock is to be found at the level of holiday shutdowns. Of industrial firms in the Community, 58 % close down for an average period of two weeks. Countries with an above-average figure are the United Kingdom (2,5 weeks), France (2,6 weeks) and Italy (2,8 weeks). By contrast, in the Federal Republic of Germany only 36 % of industrial firms shut down, on average for 1.1 weeks (see Table 8).

In the Community as a whole, there are no significant differences between the main branches of industry regarding plant closures during work holidays. Nevertheless, taking the individual branches of industry, the length of time for which firms close down for holidays varies from one country to another. In the basic materials and producer goods industries, where 56 % of firms report that they have work holidays, the norm, as in the consumer goods industry, is three or four weeks. In these branches of industry in Spain, Italy, Portugal and Greece, the trend is more towards four weeks holiday. In France, most firms in these branches of industry reported five weeks holiday. In the investment goods industry however, firms in the Community prefer three weeks on average.

Analysis of the survey results according to firm size reveals that two-thirds of small firms and only half of large firms regularly shut down production because of work holidays. The traditional differences in the individual Member States are also reflected in the results according to size class.

#### *C.1.2.5. Operating time*

##### *C.1.2.5.1. Trend of operating time over the last five years*

It is interesting to look at the trend of operating time over the last five years. On balance, the majority of firms in the

**Table 7****Working hours and operating hours in industry**

	Average operating hours per week							Contractually agreed working hours of full-time employees						
	< 40	Between 40 and 60	Between 60 and 80	Between 80 and 120	≥ 120	No reply	Average	< 35	Between 35 and 38	Between 38 and 40	Between 40 and 42	> 42	No reply	Average
B	27	15	20	19	19	0	77	3	54	40	2	0	1	37
D	25	48	18	5	2	2	53	0	56	43	1	0	0	38
GR	45	24	3	9	18	1	64	9	2	3	79	7	0	40
E	23	38	9	14	14	2	69	3	6	13	69	7	2	40
F	28	24	15	16	13	4	69	1	11	81	4	1	2	39
IRL	19	61	2	5	12	2	61	4	4	13	78	2	0	41
I	11	50	5	20	14	0	73	:	:	:	:	:	:	39
NL	20	37	5	12	26	0	74	1	20	42	33	4	0	39
P	10	80	3	4	3	0	54	:	:	:	:	:	:	44
UK	18	34	13	13	21	1	76	1	50	36	8	2	4	37
EUR	22	40	13	12	12	2	66	1	37	45	14	2	2	39

Source: EC *ad hoc* labour market survey.**Table 8****Holiday shutdowns**

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown period	Longer shutdown period	No answer
B	29	71	1	11	27	25	5	0	1	59	11	1	29
D	64	36	1	7	20	6	1	1	0	83	5	2	10
GR	45	55	0	6	16	30	3	0	0	77	7	3	13
E	0	67	1	4	7	48	5	1	0	89	3	4	4
F	36	54	4	6	8	15	16	2	3	53	15	1	31
IRL	44	56	1	13	25	14	2	0	1	50	3	1	46
I	15	85	5	7	33	38	2	0	0	83	13	4	0
NL	51	49	2	9	26	8	3	0	0	80	9	8	3
P	48	52	2	8	11	31	0	0	0	95	3	2	0
UK	27	71	9	17	13	14	10	9	1	90	7	2	1
EUR	37	58	4	9	18	20	6	2	1	79	8	2	10

Source: EC *ad hoc* labour market survey.

Community reported that they had reduced operating times in recent years. There are, of course, considerable differences from one country to another. Whereas firms in France, the United Kingdom, the Netherlands and Greece have significantly extended their operating times and have thus made progress in decoupling them from working hours, almost half the firms surveyed in the Federal Republic of Germany, Belgium and Spain reported reductions in operating time. This result is consistent with the indications that basic conditions in these countries are not conducive to an extension in operating time (see also paragraph C.1.2.6).

Broken down by branch of industry, the survey results show that in the last five years the basic materials and producer goods industries have stepped up the rate of capacity utilization by extending operating time and have had most success in easing the link with contractually agreed weekly working hours. This trend was particularly apparent in France, where almost half of all firms indicated that they had extended their operating time, and in the United Kingdom, where the corresponding figure was 41 %. However, even in the Federal Republic of Germany, the Netherlands and Greece, almost one quarter of firms in the basic materials and producer goods industries stated that they had increased their operating times over the five-year period. Although average operating times in the consumer goods industry in the Community remained unchanged over that period, the situation varied greatly from one country to another. Operating times were extended in the United Kingdom, France, the Netherlands and Greece. In contrast, there was a significant reduction in the Federal Republic of Germany, Spain, Ireland and especially in Belgium — as already reported for industry as a whole. As far as the investment goods industry is concerned, average operating time in the Community actually declined. This reflects the agreements on reductions in working hours reached between trade unions and employers' associations, but efforts to reduce overtime are also making themselves felt. This, of course, made it even more difficult to decouple agreed working hours from plant operating times. This was particularly so in the Federal Republic of Germany, Spain and Belgium.

#### C.1.2.5.2. Anticipated trend of operating time

Although the basic conditions for extending operating time are relatively unfavourable in most Community countries, on balance the majority of industrial firms in the Community are planning to increase them in the near future. Naturally, this will prove quite difficult. The current high rate of capacity utilization, together with persistently strong demand, means that the production apparatus will have to be utilized to the full and operating time dissociated further from contractually agreed working hours. In the next 24 months,

firms are planning to lengthen operating times in France, Italy and the Netherlands in particular, but also in the United Kingdom, Belgium and Greece.

The investment goods and consumer goods industries plan to lengthen operating time. It transpires that in almost all the Member States an extension of operating times is being considered by medium-sized and also by large firms as a means of expanding production potential. We find once again that the larger the firm, the less dependent it is on contractually agreed working hours and the easier it is to decouple operating time from agreed working hours. On balance, a clear majority of firms with over 1 000 employees are planning to increase operating time in the next few years.

#### C.1.2.6. Obstacles to longer operating time

The three most important reasons given for not expanding operating time are arrangements laid down in collective agreements, insufficient demand and statutory regulations. Firms in Italy and the Federal Republic of Germany view the arrangements laid down in collective agreements as a particularly important obstacle.

The ranking of obstacles to longer operating time reported by firms shows little, if any, change when the survey results are broken down by branch of industry. One exception is the basic materials and producer goods industries, where the process of decoupling operating time from contractually agreed working hours progressed furthest. In this branch of industry, in which, taking the average for the Community, almost 25 % of plant is used in a continuous shift system, firms thus feel they have hardly any scope for extending operating time.

The survey results show that industrial firms in the various size classes rank differently the reasons for not increasing operating time. For example, the shortage of skilled workers prevents small and medium-sized firms in particular from extending operating time and hence using plant more intensively. On the other hand, there emerges a clear tendency for the arrangements laid down in collective agreements and statutory regulations to form more of an obstacle the larger firms become. Nevertheless, the results also show that the larger the firm, the more shift work is being used as a means of extending operating time.

#### C.1.2.7. Shift work

The survey results reveal a close link between the number of shifts and the length of operating time. Such a link also exists between the frequency of night work and continuous

operating time. The reasons for this are the existence of collective agreements and, above all, the basic statutory framework. This is apparent from the results at national level. The answer to the question whether shift working is operated already provides certain pointers to the extent to which operating time is decoupled from contractually agreed working hours and to what extent such decoupling is hampered by other regulations. Shift work is reported with above average frequency in Belgium, France, Italy and the United Kingdom.

An evaluation of the results by branch of industry reveals that the industrial structure also has a quite significant influence on the average amount of shift work in industry. The basic materials and producer goods industries have the highest frequency of shift working (78 % on average for the Community).

The link between working hours and plant operating time can be severed in particular through increasing use of shift work. Shifts are worked in 70 % of industrial firms in the Community, of which 29 % operate two shifts, 23 % three shifts, and 17 % four shifts or more.

Even so, only just over a third of persons employed in industry (37 %) do shift work, while 14 % work on Saturdays, 7 % on Sundays and 11 % at night.

## C.2. Retail trade

### C.2.1. Methodology

The survey was also conducted in the retail trade. Leaving aside its important role as an employer, the retail trade is of particular interest since it is, to some extent, representative of the services sector. Eight Member States were involved: Belgium, the Federal Republic of Germany, Spain, France, Italy, the Netherlands, Portugal and the United Kingdom. The national samples comprise several hundred retailers.

A list of the national institutes which carried out the survey in each Member State and a copy of the questionnaire can be found in the Annex. As with the industry survey, the results were weighted by size class of firms.

### C.2.2. Detailed results of the questionnaire on the retail trade

#### C.2.2.1. Structure of employment in retail trade

In the Community, some 8 % of workers are employed in the retail trade, with around three-quarters of them exercising a

**Table 9**

#### Shift work

	No	Yes	Continuous day and night	Interrupted every day	Interrupted every week	Unspecified	Weekly number of shifts <sup>1</sup>		
							2	3	≥4
B	20	80	22	37	21	0	19	22	38
D	35	65	6	42	16	1	46	19	0
GR	47	52	:	:	:	:	21	24	7
E	31	68	17	27	24	0	1	25	43
F	26	74	10	40	24	0	25	19	30
IRL	45	55	16	15	14	10	:	:	:
I	17	83	9	35	38	0	20	31	31
NL	37	63	11	19	33	0	27	21	15
P	81	19	4	6	9	0	10	7	2
UK	27	73	14	22	17	20	34	29	10
EUR	30	70	10	33	22	4	29	23	17

<sup>1</sup> Daily shift work in Germany.

Source: EC *ad hoc* labour market survey.



skilled activity, i.e. they have — in the words of the survey — completed a full course of training related to their employment. The proportion of skilled manpower varies considerably from one country to another, ranging from 50 % in Portugal to 88 % in the Federal Republic of Germany, although the figures for men and women are fairly similar in all countries (78 % and 72 % respectively).

Of all retail employees, 64 % (84 % of men and 55 % of women) are employed full time. The disparity between the sexes is considerable: a comparison of all male and female part-time employees in retailing reveals that a large majority are women. The proportion of full-time and part-time employees varies considerably from one Member State to another. Thus, the proportion of full-time workers ranges from 44 % in the Netherlands to 91 % in Spain.

#### C.2.2.2. *Expectations on the development of employment in retail trade*

When asked to predict the probable trend for their work-force over the next two years, retailers expected a slight rise in employment. Overall, about half estimated that the number of their employees would remain the same; 20 to

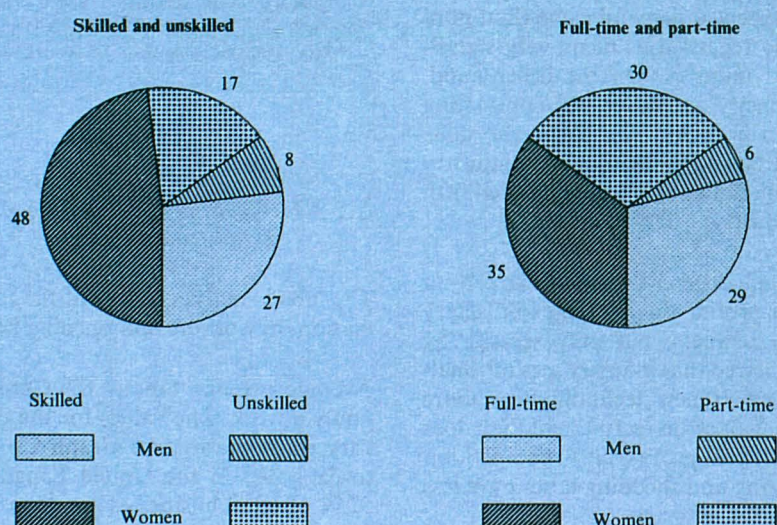
30 % anticipated an increase (with the proportion varying according to the type of employment, i.e. skilled/unskilled, full-time/part-time); a small proportion of respondents assumed that their work-force would decline. It was expected in particular that skilled activities, both full-time and part-time, would increase. Retailers viewed the trend for unskilled activities in a more pessimistic light, especially unskilled full-time employment, which could decline in some countries (Belgium, France, the Netherlands).

#### C.2.2.3. *Obstacles to an expansion of retail employment*

Firms in the retail trade were asked why they did not currently employ more staff. As in the industry survey, they were presented with 10 possible reasons why employment could not be increased.

Two reasons were highlighted in retailers' answers (see Graph 22): present and expected levels of demand for their products, and insufficient profits due to non-wage labour costs. Present and expected demand was given most often in the Netherlands and the United Kingdom as the reason for a cautious attitude towards recruitment. In the United Kingdom this could have something to do with the cyclical downturn.

GRAPH 23: Structure of workforce in retail trade (%)



Source: EC ad hoc labour market survey.



Insufficient profits seemed to cause retailers particular concern since they were ranked third or fourth and were attributed to pay levels and to the competitive situation. In the 1985 survey, retailers were asked which measures were expected to have positive effects on employment in retailing.<sup>1</sup> They ranked first in order of importance the introduction of a recruitment wage, i.e. lower pay for young people starting a job. Direct labour costs thus continue to give cause for concern. Levels of pay and non-wage labour costs were cited most frequently in Italy as the cause of insufficient profits. Non-wage labour costs were also ranked by German, French and Dutch retailers.

The shortage of adequately skilled applicants was ranked fifth. A clear preference for recruiting skilled workers also emerges from the information given regarding the probable increase in employment. This again confirms that the possession of skills is crucial if employment is to be expanded.

A lack of flexibility in recruiting and shedding labour is ranked sixth on Community average, first in Belgium and second in France. By contrast, despite the steady increase in private demand in recent years, insufficient selling capacity was seldom cited, except in Italy. Rationalization and the introduction of new technologies were ranked only ninth.

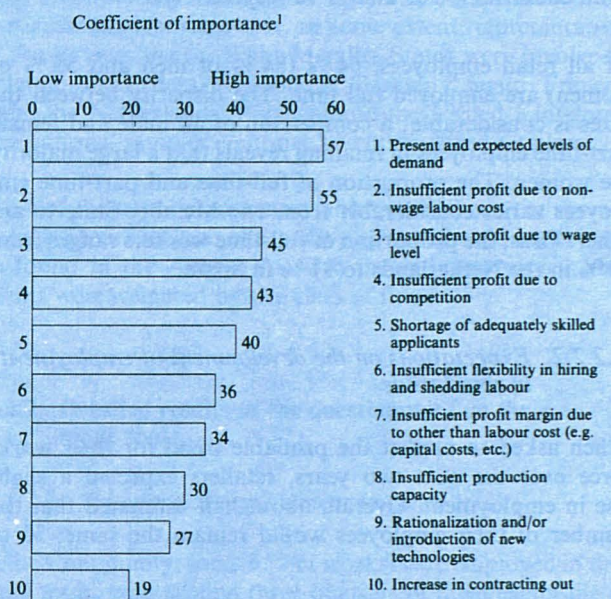
Employers in manufacturing had previously been asked the same questions as to the reasons for their cautious approach towards recruitment, and it is interesting to compare the answers given in the retail trade with those given in industry.

The order in which the reasons were ranked was similar. In both surveys, present and expected demand came first; non-wage labour costs were also regarded as being very significant by both retailing and industry. On the other hand, insufficient production capacity and increased contracting out came low on the list in both surveys. Much the same degree of importance was attached by retailing and industry to the shortage of adequately skilled applicants (ranked fifth by retailers and sixth by industry).

Some factors were evaluated differently, and this proved very revealing: 'insufficient profits' due to wage and salary level was ranked third by retailers, but only seventh by industrial firms. It also transpired that industry sees rationalization and the introduction of new technology as more important reasons for holding back on recruitment than does the retail trade. Lastly, insufficient profits due to competition and to poor flexibility in hiring and shedding labour are less important for retailing than for industry.

<sup>1</sup> See *European Economy*, No 27

**GRAPH 24: Reasons for not employing more people in retail trade at Community level**  
(order given by assessment of companies which is expressed by the coefficient)



<sup>1</sup> The coefficient ranks responses from 0 — all companies consider a particular reason to be 'not important' — to 100 — all companies consider a particular reason to be 'very important'.

Source: Special EC survey on employment and labour market, 1989: retail trade.

#### C.2.2.4. Working hours and opening hours in the retail trade

The labour market survey of the retail trade provides information on working and opening hours.

Average opening time in the Community retail trade is 53 hours a week. The values for the individual Member States vary considerably (see Graph 23), from 45 hours in Spain to 58 hours in the United Kingdom. In the Community, 57 % of retail businesses are open between 46 and 55 hours a week. But the distribution of opening hours also varies a good deal between Member States: it is narrow in Belgium, where 79 % of shops are open for 51 to 55 hours a week and, to a slightly lesser extent, in Italy, whereas it is wide in



France, the Federal Republic of Germany and especially the United Kingdom, where 14 % of retailers reported being open for over 76 hours a week.

According to the survey results, 15 % of retailers in the Community regularly close for holidays lasting on average between two and four weeks. The overwhelming majority of retailers stated that they did not want to see any change, whereas 4 % planned to shorten the duration of holiday shutdowns and 3 % to extend it.

In the retail trade in the Community, the average contractually agreed working week of a full-time employee is 39 hours. The figure is much the same in all countries (38 to 40 hours), except Spain (43 hours) and Portugal (44 hours). Thus, 79 % of full-time retail workers in the Community work between 38 and 40 hours a week.

A comparison of shop opening hours and the working hours of full-time employees reveals just how far working time and opening hours have become decoupled. The United Kingdom is setting the pace: weekly shop hours are almost half as long again as working hours (a difference of 19 hours). The difference is almost as marked in France (18

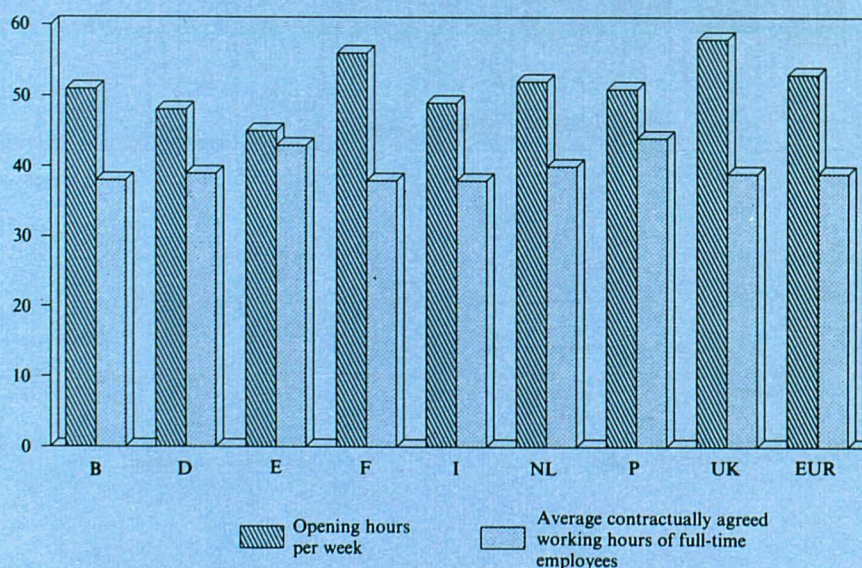
hours) but is less marked in Belgium (13 hours), the Netherlands (12 hours) and the Federal Republic of Germany (9 hours). As expected, shop hours and the contractually agreed working week diverge least in the two countries with the lowest proportion of part-time employees (Spain and Portugal).

#### C.2.2.5. Development of opening hours in retail trade

The question as to the trend of opening hours in recent years was answered as follows: 52 % of retailers indicated no change, whereas 38 % reported an increase and only 8 % a decrease. Thus, on average, retailers in the Community have in recent years switched to longer opening hours. According to the survey results, this was especially noticeable in France, Italy and the United Kingdom (see Graph 6). By contrast, opening hours in Belgium and the Federal Republic of Germany diminished a little. In the other countries, only slight changes were recorded.

The increase in average opening hours in retailing will probably continue over the next one to two years. Opening hours

GRAPH 25: Opening hours and working hours in retail trade



Source: EC ad hoc labour market survey.



will be extended by 28 % of retailers, left unchanged by 67 % and shortened by only 3 %.

#### C.2.2.6. Obstacles to the extension of shop opening hours

It will be seen from the survey that the extension of business hours is concentrated in two countries, Italy and the United Kingdom. As a result, the United Kingdom will probably remain the country where retail businesses stay open longest.

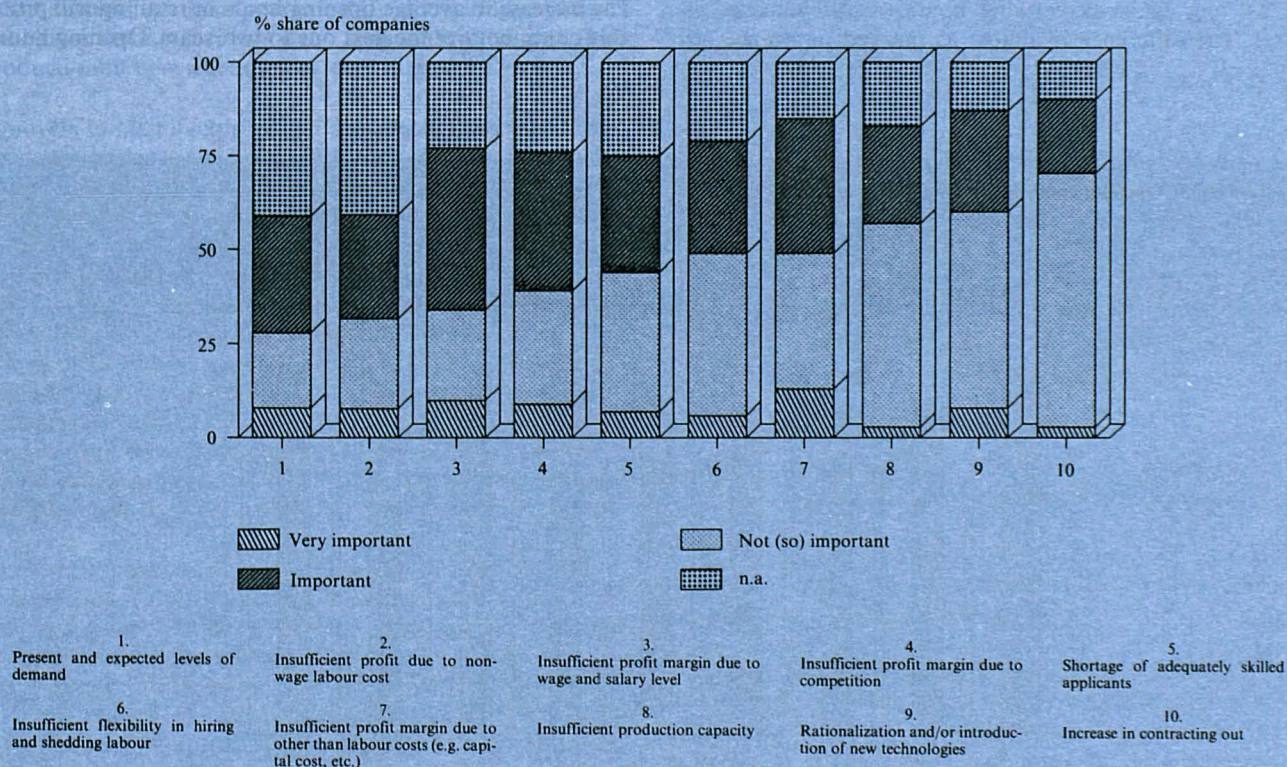
Retailers were presented with 10 possible reasons why the weekly hours could not be extended (see Graph 26).

Statutory provisions were the reason most frequently given. They ranked first in Italy, the Netherlands and France. As already mentioned, both the Netherlands and France attach particular importance to insufficient flexibility in the hiring and shedding of labour.

Retailers see insufficient demand as a further important reason for not extending opening hours; this factor is also the main reason given for the reluctance to recruit extra staff.

Both these reasons, which were given most often by retailers in the United Kingdom, were also deemed significant in the Federal Republic of Germany, Spain, and Portugal.

GRAPH 26: Reasons for not employing more people in retail trade at Community level



Source: EC ad hoc survey on employment and labour market, 1989: retail trade.

In order of importance, the third reason given for reluctance in extending weekly working hours was the cost of reorganization. This was particularly the case in Italy and Spain. Company-level and collective agreements were seen as obstacles especially in Belgium, Portugal, the Netherlands and France.

Ranked fifth as a reason for reluctance in recruitment and for reluctance in extending business hours is the shortage of adequately qualified applicants. The shortage appears to be particularly pronounced in the Federal Republic of Germany.





## **Annex**

### **I — Questionnaires**

### **II — Tables of results**



## *I — Questionnaires*

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## Survey extension on potentials and problems for growth and employment creation in the Community, 1989

### Questionnaire addressed to industrial companies

#### 1. Size and structure of your staff (March 1989)

— How many people does your company employ at present

- full-time\*
- part-time\*
- skilled\*\*
- unskilled\*\*

Number of persons		
Male	Female	Total
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

#### 2. Expected employment situation in your company

- (a) According to your present plans, the number of employees in your company over the next 24 months will probably (choose one answer in every column)

	Full-time		Part-time		Total	
	skilled	unskilled	skilled	unskilled	skilled	unskilled
• increase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• remain constant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• decrease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• don't know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Following is a list of reasons which employers have given for not being able to employ more people. In relation to employment in your company, could you say whether each reason is very important, important or not (so) important? (Tick one box on each line.)

\* According to subjective assessment.

\*\* Skilled = employee who has a complete vocational training for that job; unskilled = employee who has no complete vocational training for that job.

*Reasons*  
(Please check each reason, i.e. line by line)

- (1) Insufficient profit margin due to:

(1.1) Competition (domestic and foreign), which does not allow sufficient prices

(1.2) Wage and salary levels in your company

(1.3) Non-wage labour cost level (e.g. employers' social security contribution, payroll taxes, allowances, etc.)

(1.4) Other costs (e.g. capital costs, etc.)

- (2) Insufficient flexibility in hiring and shedding labour (i.e. necessary redundancies/dismissals and new recruitment may be difficult and costly)

(3) Present and expected levels of demand for your products

(4) Shortage of adequately skilled applicants

(5) Increase in contracting out

(6) Rationalization and/or introduction of new technologies

(7) Insufficient production capacity

(8) Other reasons, i.e. ....

Very important	Important	Not (so) important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3. Structure of working time and operating hours

- (a) What are the average operating hours per week in your company?

under 40	40 to 60	60 to 80	80 to 120	more than 120
----------	----------	----------	-----------	---------------

- (b) Do you close your company regularly in the course of the year for holidays?

Yes ☐ No ☐

If yes, for how many weeks?

If no, do you intend to do so in the future?

1	2	3	4	5	6	7 and more
---	---	---	---	---	---	------------

Yes ☐ No ☐

Do you have plans for changing the closing of your company for holidays?

None	Less closure time	More closure time
------	-------------------	-------------------

(c) What are the average contracted weekly working hours for a full-time employee in your company?

... hours

(d) Do you have shift work?

Yes	No
-----	----

If yes:

— Is your production process

- ☐ Continuous day and night all week long  
☐ Interrupted every day (e.g. at night)  
☐ Interrupted every week (e.g. on weekends)

— How many separate shifts do you use?

2	3	4	5	6 and over
---	---	---	---	------------

If you have other arrangements (e.g. 1 ½ shifts), please specify

--

 shifts

(e) Percentage of your staff doing:

	Sometimes	Regularly
Shift work	.... %	.... %
Saturday work	.... %	.... %
Sunday work	.... %	.... %
Night work	... %	.... %

#### 4. Development of operating hours

(a) Have your weekly operating hours changed in the last five years?

Decreased significantly	Decreased slightly	Remained unchanged
Increased slightly	Increased significantly	

(b) Do you envisage a change in operating hours in the next 12 to 24 months?

Significant decrease	Slight decrease	No change	Slight increase
Significant increase			

(c) Following is a list of reasons which employers have given for not being able to expand weekly operating hours. In relation to your company, could you say whether each reason is very important, important or not (so) important? (Tick one box on each line.)

Reasons	Very important	Important	Not (so) important
• lack of demand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• lack of qualified employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• lack of qualified applicants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• administrative (legal) rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• collective agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• costs of reorganization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• already continuous work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• others, e.g. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## Survey extension on potentials and problems for growth and employment creation in the Community, 1989

### Questionnaire addressed to retail trade firms

#### 1. Size and structure of your staff (March 1989)

— How many people does your firm employ at present

- full-time\*
- part-time\*
- skilled\*\*
- unskilled\*\*

Number of persons		
Male	Female	Total
....	....	....
....	....	....
....	....	....
....	....	....

#### 2. Expected employment situation in your firm

- (a) According to your present plans, the number of employees in your firm over the next 24 months will probably (choose one answer in every column)

	Full-time		Part-time		Total	
	skilled	unskilled	skilled	unskilled	skilled	unskilled
• increase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• remain constant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• decrease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• don't know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Following is a list of reasons which employers have given for not being able to employ more people. In relation to employment in your firm, could you say whether each reason is very important, important or not (so) important? (Tick one box on each line.)

\* According to subjective assessment.

\*\* Skilled = employee who has a complete vocational training for that job; unskilled = employee who has no complete vocational training for that job.

*Reasons*  
(Please check each reason, i.e. line by line)

- (1) Insufficient profit margin due to:
  - (1.1) Competition (domestic and foreign), which does not allow sufficient prices
  - (1.2) Wage and salary levels in your firm
  - (1.3) Non-wage labour cost level (e.g. employers' social security contribution, payroll taxes, allowances, etc.)
  - (1.4) Other costs (e.g. capital costs, etc.)
- (2) Insufficient flexibility in hiring and shedding labour (i.e. necessary redundancies/dismissals and new recruitment may be difficult and costly)
- (3) Present and expected levels of demand for your products
- (4) Shortage of adequately skilled applicants
- (5) Increase in contracting out
- (6) Rationalization and/or introduction of new technologies
- (7) Insufficient production capacity
- (8) Other reasons, i.e. ....

Very important	Important	Not (so) important
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3. Structure of working time and opening hours

- (a) What are the average opening hours per week in your firm?

no more than 45	46 to 50	51 to 55	56 to 60	61 to 65	66 to 75	76 and over
-----------------	----------	----------	----------	----------	----------	-------------

- (b) Do you close your firm regularly in the course of the year for holidays?

☐ Yes ☐ No

If yes, for how many weeks?

If no, do you intend to do so in the future?

1	2	3	4	5	6	7 and more
---	---	---	---	---	---	------------

☐ Yes ☐ No

Do you have plans for changing the closing of your firm for holidays?

None	Less closure time	More closure time
------	-------------------	-------------------

(c) What are the average contracted weekly working hours for a full-time employee in your firm?

... hours

(b) Do you envisage a change in opening hours in the next 12 to 24 months?

Significant decrease	Slight decrease	No change	Slight increase
Significant increase			

(c) Following is a list of reasons which employers have given for not being able to expand weekly opening hours. In relation to your firm, could you say whether each reason is very important, important or not (so) important? (Tick one box on each line.)

#### 4. Development of opening hours

(a) Have your weekly opening hours changed in the last five years?

Decreased significantly	Decreased slightly	Remained unchanged
Increased slightly	Increased significantly	

Reasons	Very important	Important	Not (so) important
• lack of demand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• lack of qualified employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• lack of qualified applicants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• administrative (legal) rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• collective agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• costs of reorganization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• already continuous work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• others, e.g. ....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Survey extension on potentials and problems for growth and employment creation in the Community, 1989

### Questionnaire addressed to consumers Adults, only

(Employees, self-employed, retired, unemployed)

#### A. At the present time, what is your position? (Show card)

1. You are still studying (Close the interview)
2. You are unemployed or looking for a job (Go to question 1)
3. You are not in paid employment and not looking for a job, or you are retired (Close the interview)
4. You work for a government agency or public administration (Go to question 1)
5. You work in industry, commerce, craftsmanship or in services (Go to question 1)
6. You are working on your own (Close the interview)

#### B. Questions

##### 1. Working time

(a) What is your present working time (working hours per week) according to your working contract?

- |                          |   |
|--------------------------|---|
| — presently not employed | 0 |
| — less than 20 hours     | 1 |
| — 20 to 24 hours         | 2 |
| — 25 to 29 hours         | 3 |
| — 30 to 34 hours         | 4 |
| — 35 to 40 hours         | 5 |
| — 41 to 45 hours         | 6 |
| — more than 45 hours     | 7 |

(b) How many days/shifts do you regularly work per week?

less than 3	3	4	5	6	7
-------------	---	---	---	---	---

(c) Does your employment include

- |                 | never                    | sometimes                | regularly                |
|-----------------|--------------------------|--------------------------|--------------------------|
| — shift work    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| — night work    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| — Saturday work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| — Sunday work   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

(d) There are indications that not everyone is fully satisfied with his/her current working time.

Assuming that the present hourly wage rate remained unchanged, would you like to work

less	as long	more
------	---------	------

(e) How many hours per week would you prefer to work (with the corresponding income)?\*

- |  |   |
|--|---|
| — not interested in taking up gainful work now | 0 |
| — less than 20 hours                           | 1 |
| — 20 to 24 hours                               | 2 |
| — 25 to 29 hours                               | 3 |
| — 30 to 34 hours                               | 4 |
| — 35 to 40 hours                               | 5 |
| — 41 to 45 hours                               | 6 |
| — more than 45 hours                           | 7 |

\* Interviewer: In case of an unemployed person please ask: If you could find a job which working time arrangement would you prefer?

(f) If the choice were offered at the next wage round which of the following two possibilities would you prefer?

Increase in pay (for the same hours of work) ☐

Shorter working time (for the same weekly or monthly pay you get now) ☐

Don't know ☐

2. Would you be willing to work different working hours, if you were offered higher wages or additional leisure time?

- |  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| — earlier in the morning or later in the evening | <input type="checkbox"/> | <input type="checkbox"/> |
| — at night                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| — on Saturday                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| — on Sunday                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| — changing working time                          | <input type="checkbox"/> | <input type="checkbox"/> |

3. If you are presently employed, is your job

- ☐ permanent
- or
- ☐ temporary

If your job is temporary, what is the expected duration (in months) of your job?

--	--



4. (a) If you are a full-time employee, would you rather have a part-time employment with a corresponding salary?

Yes	No
-----	----

- (b) If you are a part-time employee, would you rather have a full-time employment?

Yes	No
-----	----

- (c) If you are unemployed, would you rather have

— a full-time employment

Yes	No
-----	----

— a part-time employment

Yes	No
-----	----

5. (a) Were you ever unemployed for four weeks or more since 1980?

Yes	No
-----	----

- (b) If yes, how often?

once	twice	three times and more
------	-------	----------------------

- (c) How long were you unemployed in total since 1980?

less than 3 months	3 to 6 months	7 to 11 months	12 to 24 months	over 24 months
--------------------	---------------	----------------	-----------------	----------------

6. (a) Do you have an occupational qualification?

Yes	No
-----	----

- (b) If yes, do you have

— an in-house training

☐

— a vocational training within the educational system

☐

- (c) Are you at present employed as

— a skilled employee

☐

— an unskilled employee

☐

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**Table 1****Structure of workforce in industry**

Question: What is the present employment structure of your company?

1. How many men and women does your company employ?
2. How many are full-time and how many part-time employed?
3. How many are skilled and how many unskilled?

**Table 1a: Structure of workforce in industry**

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	100	0	62	38	90	10	50	50	98	2	60	40
<b>D</b>	100	0	66	34	80	20	45	55	95	5	61	39
<b>GR</b>	99	1	74	26	98	2	67	33	99	1	72	28
<b>E</b>	82	18	55	45	81	19	61	39	75	25	54	46
<b>F</b>	99	1	80	20	96	4	69	31	98	2	77	23
<b>IRL</b>	99	1	61	39	94	6	58	42	98	2	61	39
<b>I</b>	100	0	93	7	96	4	72	18	99	1	91	9
<b>NL</b>	97	3	78	22	72	28	77	23	92	8	77	23
<b>P</b>	98	2	52	48	99	1	51	49	98	2	52	48
<b>UK</b>	99	1	62	38	93	7	72	28	98	2	64	36
<b>EUR</b>	98	2	71	29	89	11	62	37	95	5	69	31

**Table 1b: Structure of workforce in the intermediate goods industry**

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	100	0	62	38	90	10	50	50	98	2	60	40
<b>D</b>	100	0	66	34	80	20	45	55	95	5	61	39
<b>GR</b>	99	1	74	26	98	2	67	33	99	1	72	28
<b>E</b>	82	18	55	45	81	19	61	39	75	25	54	46
<b>F</b>	99	1	80	20	96	4	69	31	98	2	77	23
<b>IRL</b>	99	1	61	39	94	6	58	42	98	2	61	39
<b>I</b>	100	0	93	7	96	4	72	18	99	1	91	9
<b>NL</b>	97	3	78	22	72	28	77	23	92	8	77	23
<b>P</b>	98	2	52	48	99	1	51	49	98	2	52	48
<b>UK</b>	99	1	62	38	93	7	72	28	98	2	64	36
<b>EUR</b>	98	2	71	29	89	11	62	37	95	5	69	31



Table 1c: Structure of workforce in the investment goods industry

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	99	1	65	35	84	16	37	63	96	4	59	41
<b>D</b>	99	1	67	33	79	21	42	58	91	9	56	44
<b>GR</b>	94	6	67	33	82	18	48	52	89	11	58	42
<b>E</b>	86	14	55	45	81	19	52	48	83	18	54	46
<b>F</b>	97	3	82	18	94	6	70	30	96	3	76	24
<b>IRL</b>	100	3	72	28	96	4	51	49	97	4	64	36
<b>I</b>	96	0	64	36	96	4	67	33	99	1	65	35
<b>NL</b>	99	4	61	39	76	24	58	42	90	10	62	38
<b>P</b>	97	1	59	41	93	7	43	57	97	3	48	52
<b>UK</b>	98	3	32	68	73	27	21	79	89	11	28	72
<b>EUR</b>	97	3	61	39	84	16	48	52	92	8	55	45

Table 1d: Structure of workforce in the consumer goods industry

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	99	1	65	35	84	16	37	63	96	4	59	41
<b>D</b>	99	1	67	33	79	21	42	58	91	9	56	44
<b>GR</b>	94	6	67	33	82	18	48	52	89	11	58	42
<b>E</b>	86	14	55	45	81	19	52	48	83	18	54	46
<b>F</b>	97	3	82	18	94	6	70	30	96	3	76	24
<b>IRL</b>	100	3	72	28	96	4	51	49	97	4	64	36
<b>I</b>	96	0	64	36	96	4	67	33	99	1	65	35
<b>NL</b>	99	4	61	39	76	24	58	42	90	10	62	38
<b>P</b>	97	1	59	41	93	7	43	57	97	3	48	52
<b>UK</b>	98	3	32	68	73	27	21	79	89	11	28	72
<b>EUR</b>	97	3	61	39	84	16	48	52	92	8	55	45

Table 1e: Structure of workforce in companies with fewer than 200 employees

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	99	1	62	38	89	11	41	59	96	4	57	43
<b>D</b>	99	1	70	30	74	26	44	56	91	9	62	38
<b>GR</b>	94	6	60	40	71	29	41	59	84	16	51	49
<b>E</b>	89	11	55	45	84	16	57	43	86	14	56	44
<b>F</b>	99	1	79	21	96	4	75	25	98	2	77	23
<b>IRL</b>	98	2	68	32	96	4	57	43	97	3	64	36
<b>I</b>	100	0	85	15	95	5	80	20	98	2	84	16
<b>NL</b>	99	1	64	36	81	19	54	46	95	5	62	38
<b>UK</b>	93	7	61	39	79	21	43	57	88	12	54	46
<b>EUR</b>	97	3	70	30	84	16	56	44	93	8	66	34

Table 1f: Structure of workforce in companies with 200 to 499 employees

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	99	1	60	40	84	16	32	68	96	4	54	46
<b>D</b>	100	0	71	29	82	18	42	58	94	6	62	38
<b>GR</b>	99	1	74	26	98	2	58	42	99	1	68	32
<b>E</b>	74	26	54	46	75	25	57	43	75	25	56	44
<b>F</b>	98	2	81	19	97	3	74	26	97	3	79	21
<b>IRL</b>	98	2	62	38	94	6	37	63	97	3	54	46
<b>I</b>	99	1	88	12	93	7	73	27	97	3	84	16
<b>NL</b>	96	4	82	18	70	30	76	24	90	10	80	20
<b>UK</b>	98	2	59	41	80	20	45	55	92	8	55	45
<b>EUR</b>	97	3	72	28	85	15	55	45	93	7	67	33

Table 1g: Structure of workforce in companies with 500 to 999 employees

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	100	0	75	25	85	15	73	27	98	2	75	25
<b>D</b>	100	0	66	34	83	17	37	63	95	5	58	42
<b>GR</b>	98	2	73	27	96	4	66	34	98	2	71	29
<b>E</b>	71	29	58	42	76	24	70	30	72	28	63	37
<b>F</b>	97	3	81	19	96	4	65	35	97	3	75	25
<b>IRL</b>	98	2	70	30	95	5	39	61	97	3	60	40
<b>I</b>	99	1	75	25	93	7	75	25	98	2	85	15
<b>NL</b>	96	4	82	18	70	30	76	24	90	10	80	20
<b>UK</b>	91	9	58	42	66	34	48	52	82	18	55	45
<b>EUR</b>	95	2	69	31	83	17	56	44	92	9	67	34

Table 1h: Structure of workforce in companies with 1 000 or more employees

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	99	1	67	33	87	13	39	61	98	2	63	37
<b>D</b>	100	0	73	27	86	14	37	63	97	3	65	35
<b>GR</b>	100	0	87	13	100	0	60	40	100	0	81	19
<b>E</b>	81	19	51	49	79	21	56	44	81	19	54	46
<b>F</b>	99	1	89	11	94	6	74	26	97	3	84	16
<b>IRL</b>	100	0	65	35	75	25	50	50	86	14	47	43
<b>I</b>	100	0	74	26	98	2	69	31	100	0	73	27
<b>NL</b>	96	4	82	18	70	30	76	24	90	10	80	20
<b>UK</b>	99	1	45	55	79	21	24	76	93	7	39	61
<b>EUR</b>	98	2	69	31	87	13	49	51	95	5	64	36

Source: Special EC labour market survey.



**Table 2****Prospective trend of employment in industry**

Question: How do you expect the number of employees in your company to vary over the next 24 months?

1. Will the number of full-time and part-time employees and the total workforce increase, remain constant or decrease?
2. How will the number of skilled and unskilled employees change?

**Table 2a: Prospective trend of employment in industry**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)											
Full-time											
The number of <b>skilled employees</b> will:											
increase	54	31	27	38	38	40	54	58	41	45	41
remain constant	31	52	58	44	43	38	37	33	46	32	42
decrease	11	17	7	10	18	15	9	5	2	12	13
don't know	4	0	8	7	1	7	0	4	11	11	4
The number of <b>unskilled employees</b> will:											
increase	19	12	19	11	5	26	7	18	31	25	14
remain constant	36	51	47	45	36	39	62	51	50	31	45
decrease	32	29	11	25	45	18	31	25	9	28	30
don't know	14	8	23	19	14	16	0	7	10	16	11
Part-time											
The number of <b>skilled employees</b> will:											
increase	7	21	2	2	10	6	5	16	11	10	12
remain constant	47	67	15	20	65	35	90	69	72	37	59
decrease	11	6	1	2	7	7	5	2	2	6	5
don't know	34	6	82	76	18	52	0	12	15	47	24
The number of <b>unskilled employees</b> will:											
increase	5	11	4	2	5	7	6	8	10	10	8
remain constant	44	65	16	18	54	34	85	62	72	39	56
decrease	15	13	1	4	19	7	9	16	5	14	13
don't know	36	11	79	29	52	0	13	13	38	25	
Total											
The number of <b>skilled employees</b> will:											
increase	51	32	15	31	38	41	53	58	38	40	39
remain constant	28	51	37	36	41	41	38	36	50	30	41
decrease	10	17	4	9	18	11	9	5	2	14	13
don't know	10	0	44	24	3	7	0	2	10	16	7
The number of <b>unskilled employees</b> will:											
increase	18	13	13	9	6	30	7	20	30	24	14
remain constant	32	50	29	37	34	42	63	47	50	28	42
decrease	32	29	6	21	43	13	30	27	8	28	29
don't know	18	8	52	33	16	15	0	6	12	19	14

Table 2b: Prospective trend of employment in the intermediate goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)											
<b>Full-time</b>											
The number of <b>skilled employees</b> will:											
increase	45	33	27	36	39	44	29	60	46	38	36
remain constant	33	56	56	43	40	35	52	33	48	47	48
decrease	18	11	7	12	19	13	19	5	3	9	13
don't know	4	0	10	9	2	8	0	2	6	6	3
The number of <b>unskilled employees</b> will:											
increase	15	13	16	10	7	28	12	26	38	21	15
remain constant	30	60	41	42	36	42	52	47	48	39	47
decrease	40	22	14	29	44	16	36	23	11	30	30
don't know	15	5	29	19	13	14	0	4	3	10	8
<b>Part-time</b>											
The number of <b>skilled employees</b> will:											
increase	3	33	1	3	6	8	4	16	11	10	14
remain constant	46	59	17	20	68	35	88	75	72	40	58
decrease	16	3	0	2	6	6	8	4	2	5	5
don't know	35	5	82	75	20	51	0	5	15	35	21
The number of <b>unskilled employees</b> will:											
increase	3	13	2	2	5	8	6	7	16	12	9
remain constant	36	67	17	19	61	38	88	65	65	44	59
decrease	22	11	1	4	7	3	6	19	6	13	10
don't know	39	9	80	75	27	51	0	9	13	31	23
<b>Total</b>											
The number of <b>skilled employees</b> will:											
increase	42	34	13	28	40	45	28	54	39	36	35
remain constant	31	55	38	36	38	37	54	42	52	41	46
decrease	17	11	5	11	19	10	18	4	3	9	13
don't know	10	0	44	25	3	8	0	0	6	15	7
The number of <b>unskilled employees</b> will:											
increase	12	15	12	9	6	34	10	26	33	25	15
remain constant	28	59	27	35	36	45	53	44	52	30	44
decrease	40	21	7	24	44	8	37	26	8	28	29
don't know	20	5	54	32	14	13	0	4	7	17	12

Table 2c: Prospective trend of employment in the investment goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)											
Full-time											
The number of <b>skilled employees</b> will:											
increase	57	34	22	38	47	48	57	64	50	39	43
remain constant	15	46	56	40	31	43	39	31	38	25	36
decrease	25	20	17	12	21	2	4	2	0	8	13
don't know	3	0	5	10	1	7	0	2	12	28	7
The number of <b>unskilled employees</b> will:											
increase	12	11	9	12	3	38	12	7	17	20	12
remain constant	38	45	52	37	32	29	34	58	59	31	39
decrease	40	37	17	25	45	12	54	22	5	12	33
don't know	10	7	22	26	20	21	0	13	19	37	17
Part-time											
The number of <b>skilled employees</b> will:											
increase	17	20	0	3	18	5	3	16	9	4	12
remain constant	27	68	13	15	54	33	95	71	71	27	55
decrease	26	6	0	3	12	7	2	0	2	3	6
don't know	30	6	87	79	16	55	0	13	19	37	22
The number of <b>unskilled employees</b> will:											
increase	8	10	4	0	2	7	1	9	0	5	5
remain constant	36	64	13	16	41	31	97	62	73	33	54
decrease	26	16	0	4	18	7	2	11	7	2	10
don't know	30	10	83	80	39	55	0	18	59	31	
Total											
The number of <b>skilled employees</b> will:											
increase	53	35	9	33	45	50	55	64	50	34	41
remain constant	14	45	30	26	30	43	41	31	33	24	34
decrease	25	20	4	10	22	2	4	20	18	15	
don't know	8	0	57	31	3	5	0	2	17	25	10
The number of <b>unskilled employees</b> will:											
increase	15	11	0	9	3	38	11	16	16	20	12
remain constant	36	45	30	27	28	33	35	53	57	31	37
decrease	36	37	9	21	42	10	54	20	6	21	34
don't know	13	7	61	43	27	19	0	11	21	27	18



Table 2d: Prospective trend of employment in the consumer goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Full-time</b>											
The number of <b>skilled employees</b> will:											
increase	67	24	29	33	28	32	70	51	34	53	41
remain constant	24	63	59	45	57	39	24	33	48	27	45
decrease	7	13	4	8	15	23	6	8	3	17	12
don't know	2	0	8	12	0	6	0	8	15	4	3
The number of <b>unskilled employees</b> will:											
increase	29	14	25	12	4	18	2	18	26	30	15
remain constant	33	58	52	50	39	42	79	49	50	26	50
decrease	30	18	5	23	46	24	19	29	8	36	27
don't know	8	10	18	15	11	16	0	4	16	8	9
<b>Part-time</b>											
The number of <b>skilled employees</b> will:											
increase	5	16	3	0	9	5	9	18	12	19	12
remain constant	61	70	14	19	70	35	85	61	72	39	60
decrease	16	6	1	3	5	9	6	2	2	11	6
don't know	18	8	82	78	16	51	0	20	14	32	21
The number of <b>unskilled employees</b> will:											
increase	4	11	6	3	6	5	13	10	6	14	10
remain constant	58	67	16	18	57	31	67	59	79	36	54
decrease	19	7	1	4	12	11	20	18	3	25	14
don't know	19	15	77	75	25	53	0	14	12	25	23
<b>Total</b>											
The number of <b>skilled employees</b> will:											
increase	66	26	19	28	29	33	70	55	35	50	40
remain constant	21	61	37	36	54	44	25	33	50	23	42
decrease	6	13	2	7	15	17	5	8	3	14	11
don't know	7	0	42	29	2	6	0	4	12	13	7
The number of <b>unskilled employees</b> will:											
increase	29	17	17	10	8	22	3	18	30	29	16
remain constant	21	55	31	40	38	44	79	45	46	23	46
decrease	39	18	3	19	43	19	18	33	9	32	26
don't know	11	10	49	31	11	15	0	4	15	16	12

Table 2e: Prospective trend of employment in companies with fewer than 200 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
	( % )									
<b>Full-time</b>										
The number of <b>skilled employees</b> will:										
increase	47	24	26	37	33	47	31	60	55	36
remain constant	42	67	62	46	57	36	58	32	38	54
decrease	5	8	3	8	8	10	11	4	3	7
don't know	6	1	9	9	2	7	:	4	4	3
The number of <b>unskilled employees</b> will:										
increase	18	12	19	11	7	29	12	18	26	15
remain constant	41	60	52	49	54	40	67	60	49	56
decrease	22	11	6	20	20	11	21	17	9	15
don't know	19	17	23	20	19	20	:	6	17	17
<b>Part-time</b>										
The number of <b>skilled employees</b> will:										
increase	5	11	2	2	3	5	10	11	8	8
remain constant	44	69	15	17	56	31	82	75	41	57
decrease	3	5	0	2	4	7	8	1	2	4
don't know	48	15	83	79	37	57	:	13	49	37
The number of <b>unskilled employees</b> will:										
increase	6	8	5	1	2	7	8	10	6	6
remain constant	43	60	11	16	46	32	84	71	44	53
decrease	6	6	1	2	5	6	8	6	3	5
don't know	45	26	77	81	47	55	:	12	47	42
<b>Total</b>										
The number of <b>skilled employees</b> will:										
increase	43	26	13	31	32	48	30	57	44	33
remain constant	38	65	38	37	55	39	59	38	32	51
decrease	4	8	2	7	8	7	11	3	3	7
don't know	15	1	47	25	5	6	:	3	22	11
The number of <b>unskilled employees</b> will:										
increase	17	14	13	9	7	34	13	25	23	15
remain constant	41	59	30	38	54	40	67	53	41	55
decrease	19	11	3	17	19	8	20	17	7	14
don't know	23	16	54	36	21	18	:	5	29	23

Table 2f: Prospective trend of employment in companies with 200 to 499 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Full-time</b>										
The number of <b>skilled employees</b> will:										
increase	55	32	31	42	39	31	43	61	53	42
remain constant	32	58	44	46	46	51	44	27	34	46
decrease	11	10	19	8	14	13	13	8	10	11
don't know	2	0	6	4	1	5	:	4	3	2
The number of <b>unskilled employees</b> will:										
increase	20	15	25	14	7	23	15	18	30	17
remain constant	35	57	33	37	38	44	56	35	42	47
decrease	35	21	17	33	41	28	29	41	19	27
don't know	10	7	25	16	14	5	:	6	10	11
<b>Part-time</b>										
The number of <b>skilled employees</b> will:										
increase	14	15	3	1	10	13	13	27	9	12
remain constant	41	74	11	27	66	41	81	61	47	62
decrease	5	5	0	3	7	8	6	4	5	5
don't know	40	6	86	69	17	38	:	8	39	26
The number of <b>unskilled employees</b> will:										
increase	6	11	0	4	11	10	13	8	12	10
remain constant	38	70	8	22	49	36	82	47	48	57
decrease	13	9	0	9	12	10	5	35	6	9
don't know	43	10	92	65	28	44	:	10	34	28
<b>Total</b>										
The number of <b>skilled employees</b> will:										
increase	55	33	19	44	40	36	42	61	44	40
remain constant	27	57	28	19	42	51	45	31	29	41
decrease	11	10	11	9	14	8	13	8	10	11
don't know	7	0	42	28	4	5	:	0	16	9
The number of <b>unskilled employees</b> will:										
increase	20	18	20	13	8	28	14	10	32	18
remain constant	32	55	22	34	36	49	58	39	32	44
decrease	30	20	11	27	41	18	28	45	17	26
don't know	18	7	47	26	15	5	:	6	18	14



Table 2g: Prospective trend of employment in companies with 500 to 999 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
	(%)									
<b>Full-time</b>										
The number of <b>skilled employees</b> will:										
increase	50	39	25	43	41	16	38	61	41	41
remain constant	34	55	44	27	45	21	46	27	41	45
decrease	10	6	25	20	13	47	16	8	14	12
don't know	6	0	6	10	1	16	:	4	3	3
The number of <b>unskilled employees</b> will:										
increase	5	18	13	11	7	5	9	18	22	14
remain constant	38	49	19	33	38	21	52	35	34	42
decrease	36	28	37	30	45	47	39	41	37	36
don't know	21	5	31	26	10	26	:	6	7	10
<b>Part-time</b>										
The number of <b>skilled employees</b> will:										
increase	15	18	0	4	12	0	3	27	19	13
remain constant	49	78	25	36	72	37	86	61	24	61
decrease	4	2	6	4	5	10	11	4	2	4
don't know	32	2	69	56	10	53	:	8	54	25
The number of <b>unskilled employees</b> will:										
increase	6	11	6	4	11	0	14	8	16	11
remain constant	41	70	19	27	57	32	73	47	30	54
decrease	3	13	6	0	10	10	13	35	23	14
don't know	50	6	69	69	22	58	:	10	31	25
<b>Total</b>										
The number of <b>skilled employees</b> will:										
increase	51	39	19	27	42	16	39	61	41	40
remain constant	33	55	38	34	42	26	47	31	34	43
decrease	6	6	6	16	15	42	14	8	8	10
don't know	10	0	37	23	1	16	:	0	16	8
The number of <b>unskilled employees</b> will:										
increase	10	19	6	11	8	5	10	10	24	15
remain constant	37	48	19	27	36	32	50	39	26	39
decrease	32	28	19	23	46	37	40	45	32	34
don't know	21	5	56	39	10	26	:	6	18	14

Table 2h: Prospective trend of employment in companies with 1 000 or more employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
(%)										
<b>Full-time</b>										
The number of <b>skilled employees</b> will:										
increase	68	34	33	31	40	:	69	61	37	43
remain constant	8	33	67	26	31	:	24	27	23	29
decrease	24	33	0	43	28	:	7	8	19	24
don't know	0	0	0	0	1	:	:	4	21	5
The number of <b>unskilled employees</b> will:										
increase	26	8	0	0	3	:	3	18	23	10
remain constant	24	40	78	37	22	:	64	35	13	35
decrease	48	51	11	63	65	:	33	41	41	48
don't know	2	1	11	0	10	:	:	6	23	8
<b>Part-time</b>										
The number of <b>skilled employees</b> will:										
increase	4	35	0	0	15	:	0	27	9	16
remain constant	58	56	22	20	69	:	98	61	35	57
decrease	36	8	0	0	9	:	2	4	12	8
don't know	2	1	78	80	7	:	:	8	45	23
The number of <b>unskilled employees</b> will:										
increase	3	13	0	0	4	:	0	8	9	7
remain constant	52	65	33	17	62	:	91	47	35	57
decrease	40	21	0	5	16	:	9	35	22	18
don't know	5	1	67	78	18	:	:	10	35	22
<b>Total</b>										
The number of <b>skilled employees</b> will:										
increase	65	35	22	31	41	:	69	61	35	42
remain constant	8	32	44	17	29	:	25	31	26	28
decrease	24	33	0	47	28	:	6	8	27	26
don't know	3	0	34	5	2	:	:	0	12	5
The number of <b>unskilled employees</b> will:										
increase	24	8	0	0	5	:	2	10	23	10
remain constant	10	40	56	31	19	:	65	39	18	35
decrease	61	51	0	63	61	:	33	45	47	49
don't know	5	1	44	6	15	:	:	6	12	8

Source: Special EC labour market survey.

**Table 3****Prospective trend of employment in industry (balances)**

Question: See Table 2

The figures below are balances, i.e. the difference between the percentages of respondents expecting an increase and those expecting a decrease in employment.

**Table 3a: Prospective trend of employment in industry (balances)**

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	43	-13	-4	-10	41	-14
<b>D</b>	14	-17	15	-2	15	-16
<b>GR</b>	20	8	1	3	11	7
<b>E</b>	28	-14	0	-2	22	-12
<b>F</b>	20	-40	3	-14	20	-37
<b>IRL</b>	25	8	-1	0	30	17
<b>I</b>	45	-24	0	-3	44	-23
<b>NL</b>	53	-7	14	-8	53	-7
<b>P</b>	39	22	9	5	36	22
<b>UK</b>	33	-3	4	-4	26	-4
<b>EUR</b>	28	-17	6	-5	26	-16

**Table 3b: Prospective trend of employment in the intermediate goods industry (balances)**

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	27	-25	-13	-16	25	-28
<b>D</b>	22	-11	30	2	23	-6
<b>GR</b>	20	2	1	1	8	5
<b>E</b>	24	-19	1	-2	17	-15
<b>F</b>	20	-37	0	-2	21	-38
<b>IRL</b>	31	12	2	5	35	26
<b>I</b>	10	-24	-4	0	10	-27
<b>NL</b>	55	3	12	-12	50	0
<b>P</b>	43	27	9	10	36	25
<b>UK</b>	29	-9	5	-1	27	-3
<b>EUR</b>	23	-16	9	-1	22	-14



**Table 3c: Prospective trend of employment in the investment goods industry (balances)**

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	32	-28	-9	-18	28	-21
<b>D</b>	14	-26	14	-6	15	-26
<b>GR</b>	5	-12	0	4	5	-9
<b>E</b>	26	-13	0	-4	23	-12
<b>F</b>	26	-42	6	-16	23	-39
<b>IRL</b>	46	26	-2	0	48	28
<b>I</b>	53	-42	1	-1	51	-43
<b>NL</b>	62	-15	16	-2	62	-4
<b>P</b>	50	12	7	-7	50	10
<b>UK</b>	31	8	1	3	16	-1
<b>EUR</b>	30	-21	6	-5	26	-22

**Table 3d: Prospective trend of employment in the consumer goods industry (balances)**

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	60	-1	-11	-15	60	-10
<b>D</b>	11	-4	10	4	13	-1
<b>GR</b>	25	20	2	5	17	14
<b>E</b>	25	-11	-3	-1	21	-9
<b>F</b>	13	-42	4	-6	14	-35
<b>IRL</b>	9	-6	-4	-6	16	3
<b>I</b>	64	-17	3	-7	65	-15
<b>NL</b>	33	-11	16	-8	47	-15
<b>P</b>	31	18	10	3	32	21
<b>UK</b>	36	-6	8	-11	36	-3
<b>EUR</b>	28	-12	6	-4	29	-10

Table 3e: Prospective trend of employment in companies with fewer than 200 employees (balances)

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	42	− 4	2	0	39	− 2
<b>D</b>	16	1	6	2	18	3
<b>GR</b>	23	13	2	4	11	10
<b>E</b>	29	− 9	0	− 1	24	− 8
<b>F</b>	25	− 13	− 1	− 3	24	− 12
<b>IRL</b>	37	18	− 2	1	41	26
<b>I</b>	20	− 9	2	0	19	− 7
<b>NL</b>	56	1	10	4	54	8
<b>UK</b>	52	17	6	3	41	16
<b>EUR</b>	29	0	4	1	26	1

Table 3f: Prospective trend of employment in companies with 200 to 499 employees (balances)

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	44	− 15	9	− 7	44	− 10
<b>D</b>	22	− 6	10	2	23	− 2
<b>GR</b>	12	8	3	0	8	9
<b>E</b>	34	− 19	− 2	− 5	35	− 14
<b>F</b>	25	− 34	3	− 1	26	− 33
<b>IRL</b>	18	− 5	5	0	28	10
<b>I</b>	30	− 14	7	8	29	− 14
<b>NL</b>	53	− 23	23	− 27	53	− 35
<b>UK</b>	43	11	4	6	34	15
<b>EUR</b>	31	− 10	6	1	29	− 8

Table 3g: Prospective trend of employment in companies with 500 to 999 employees (balances)

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	40	-31	11	3	45	-22
<b>D</b>	33	-10	16	-2	33	-9
<b>GR</b>	0	-24	-6	0	13	-13
<b>E</b>	23	-19	0	4	11	-12
<b>F</b>	28	-38	7	1	27	-38
<b>IRL</b>	-31	-42	-10	-10	-26	-32
<b>I</b>	16	-30	-8	1	25	-30
<b>NL</b>	53	-23	23	-27	53	-35
<b>UK</b>	27	-15	17	-7	33	-8
<b>EUR</b>	27	-21	9	-2	29	-19

Table 3h: Prospective trend of employment in companies with 1 000 or more employees (balances)

	Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees		Prospective trend of total employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	44	-22	-32	-37	41	-37
<b>D</b>	1	-43	27	-8	2	-43
<b>GR</b>	33	-11	0	0	22	0
<b>E</b>	-12	-63	0	-5	-16	-63
<b>F</b>	12	-62	6	-12	13	-56
<b>IRL</b>	0	50	0	50	0	50
<b>I</b>	62	-30	-2	-9	63	-31
<b>NL</b>	53	-23	23	-23	53	-35
<b>UK</b>	18	-18	-3	-13	8	-24
<b>EUR</b>	18	-38	8	-11	16	-39

Source: Special EC labour market survey.

**Table 4****Obstacles to employing more people in industry**

Question: Are the following reasons for not employing more people in your company very important, important or not (so) important?

**Table 4a: Obstacles to employing more people (all sectors)**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>											
<b>competition</b>											
very important	27	26	38	38	27	39	43	44	43	25	31
important	44	35	26	30	30	20	34	22	39	38	34
not (so) important	24	27	16	12	26	29	23	31	19	35	26
no reply	6	12	20	20	17	12	0	3	0	2	9
<b>wage and salary levels</b>											
very important	18	18	12	9	5	21	8	34	12	7	12
important	50	48	34	46	30	27	62	32	38	48	46
not (so) important	27	22	31	15	49	35	30	32	50	43	33
no reply	5	12	23	30	16	17	0	2	0	2	10
<b>non-wage labour costs</b>											
very important	54	33	21	44	32	29	25	44	24	6	28
important	30	40	34	33	38	23	59	25	31	37	40
not (so) important	11	15	22	5	17	32	16	29	45	56	24
no reply	5	12	23	19	13	16	0	1	0	2	8
<b>other costs</b>											
very important	5	8	30	20	7	21	36	22	21	8	14
important	39	36	30	32	23	25	38	33	33	34	33
not (so) important	50	41	18	20	42	37	26	42	46	51	39
no reply	6	15	22	28	28	17	0	3	0	7	13
<b>Insufficient flexibility in hiring and shedding labour</b>											
very important	27	21	27	35	32	29	45	44	29	9	27
important	32	42	28	33	30	21	33	27	25	35	35
not (so) important	35	33	26	15	26	37	22	28	46	54	33
no reply	7	4	19	18	12	13	0	1	0	2	6
<b>Present and expected levels of demand</b>											
very important	33	37	20	22	25	54	46	69	25	53	39
important	39	24	32	34	26	19	39	16	43	32	30
not (so) important	21	35	28	23	28	18	15	14	32	14	24
no reply	6	4	20	20	21	9	0	1	0	2	7
<b>Shortage of adequately skilled applicants</b>											
very important	23	25	19	14	21	11	13	47	35	27	23
important	40	41	31	23	32	17	62	23	32	35	39
not (so) important	31	30	30	40	33	56	25	29	33	37	32
no reply	6	4	20	23	14	16	0	1	0	2	6



Table 4a (continued)

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Increase in contracting out</b>											
very important	9	4	3	4	7	11	6	19	4	2	5
important	30	12	11	15	22	23	27	22	23	19	19
not (so) important	55	78	53	53	53	51	67	58	73	77	68
no reply	7	6	33	28	18	15	0	1	0	2	8
<b>Rationalization and/or introduction of new technologies</b>											
very important	31	19	16	8	32	40	27	55	25	16	23
important	41	44	28	26	33	20	62	21	30	39	41
not (so) important	22	33	32	38	25	25	11	24	45	43	30
no reply	6	4	24	28	11	14	0	1	0	2	6
<b>Insufficient production capacity</b>											
very important	5	3	8	4	5	10	3	29	13	9	6
important	25	15	16	17	12	19	42	14	31	17	20
not (so) important	64	75	46	51	64	51	55	56	56	71	65
no reply	7	7	30	28	19	20	0	1	0	3	9
<b>Other reasons</b>											
very important	7	3	12	7	6	3	25	0	51	4	9
important	1	2	2	2	3	0	8	0	6	2	3
not (so) important	20	0	1	7	15	4	67	0	43	2	16
no reply	72	95	85	85	76	93	0	0	0	92	71

Table 4b: Obstacles to employing more people in the intermediate goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>											
<b>competition</b>											
very important	20	23	48	40	26	41	30	39	46	18	27
important	48	34	20	31	23	21	43	19	38	57	37
not (so) important	24	29	12	9	28	27	27	37	16	25	26
no reply	8	14	20	20	23	11	0	5	0	0	10
<b>wage and salary levels</b>											
very important	15	8	17	11	5	21	7	35	13	8	9
important	49	54	33	43	29	28	52	28	44	51	46
not (so) important	30	25	27	15	46	31	41	33	43	41	34
no reply	6	13	23	31	20	20	0	4	0	1	11
<b>non-wage labour costs</b>											
very important	57	25	26	45	32	22	43	35	25	6	28
important	26	38	31	34	38	24	42	30	36	36	37
not (so) important	11	23	22	3	13	34	15	33	39	56	26
no reply	6	14	21	18	17	20	0	2	0	1	9
<b>other costs</b>											
very important	5	3	34	23	6	25	20	19	26	7	11
important	23	33	27	30	29	23	49	35	36	46	37
not (so) important	65	48	16	20	35	31	31	40	38	38	38
no reply	7	16	23	27	30	21	0	5	0	9	14
<b>Insufficient flexibility in hiring and shedding labour</b>											
very important	22	15	29	35	32	34	31	42	34	9	23
important	44	30	25	31	31	21	35	25	26	28	31
not (so) important	27	53	27	13	21	31	34	32	40	62	41
no reply	7	2	19	21	16	14	0	2	0	1	6
<b>Present and expected levels of demand</b>											
very important	24	31	19	21	21	56	35	67	27	45	33
important	57	27	36	32	26	21	37	16	46	44	33
not (so) important	14	40	19	22	27	14	28	16	27	10	26
no reply	5	2	26	25	26	9	0	2	0	1	8
<b>Shortage of adequately skilled applicants</b>											
very important	26	13	13	13	23	13	18	56	37	19	19
important	30	47	35	22	28	16	41	26	35	40	38
not (so) important	39	36	31	37	27	49	41	16	28	40	35
no reply	5	4	21	28	22	22	0	2	0	1	8
<b>Increase in contracting out</b>											
very important	18	4	4	2	2	9	10	16	2	2	5
important	19	3	7	14	17	18	32	23	23	14	15
not (so) important	57	87	53	52	55	52	58	60	75	82	71
no reply	6	6	36	32	26	21	0	2	0	1	10

Table 4b (continued)

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>											
very important	37	16	22	9	33	42	45	54	25	21	26
important	39	41	23	25	32	18	41	26	31	42	37
not (so) important	18	41	32	36	21	21	14	18	44	37	31
no reply	6	2	22	30	14	19	0	2	0	1	6
<b>Insufficient production capacity</b>											
very important	5	5	5	6	7	10	7	32	16	4	7
important	21	9	14	16	16	20	26	18	25	24	18
not (so) important	68	82	48	46	52	44	67	49	59	69	66
no reply	6	4	33	32	25	27	0	2	0	3	10
<b>Other reasons</b>											
very important	9	2	10	8	3	1	16	0	57	5	8
important	1	6	1	1	1	0	9	0	2	0	4
not (so) important	35	0	0	6	17	1	75	0	41	1	18
no reply	55	92	89	85	79	97	0	0	0	94	71

Table 4c: Obstacles to employing more people in the investment goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>											
<b>competition</b>											
very important	25	25	26	36	27	38	14	47	44	40	29
important	61	35	26	32	43	14	47	22	22	28	36
not (so) important	8	28	22	11	21	33	39	29	34	27	27
no reply	6	12	26	21	9	14	0	2	0	5	8
<b>wage and salary levels</b>											
very important	20	18	4	12	5	19	5	31	15	8	12
important	53	49	48	45	30	29	56	36	44	48	46
not (so) important	20	22	22	13	56	33	39	31	41	40	34
no reply	7	11	26	30	9	19	0	2	0	4	9
<b>non-wage labour costs</b>											
very important	45	33	17	43	29	36	19	51	28	6	26
important	44	43	39	31	39	16	49	22	31	38	40
not (so) important	5	13	13	5	25	29	32	24	41	52	26
no reply	6	11	31	21	7	19	0	2	0	5	8
<b>other costs</b>											
very important	6	8	13	19	6	19	8	29	28	5	10
important	50	37	39	31	20	21	50	20	41	32	34
not (so) important	35	40	22	17	52	38	42	49	31	55	43
no reply	9	15	26	33	22	21	0	3	0	8	13
<b>Insufficient flexibility in hiring and shedding labour</b>											
very important	35	20	35	39	34	26	18	49	19	10	23
important	41	51	26	33	33	26	68	29	36	36	44
not (so) important	17	26	22	14	27	31	14	22	45	51	28
no reply	7	3	17	14	6	17	0	0	0	4	4
<b>Present and expected levels of demand</b>											
very important	28	37	22	19	40	62	17	73	23	57	37
important	50	21	35	42	19	9	72	18	46	31	34
not (so) important	13	38	26	19	23	17	11	9	31	7	22
no reply	9	4	17	20	18	12	0	0	0	5	7
<b>Shortage of adequately skilled applicants</b>											
very important	24	29	22	12	27	9	16	51	42	37	28
important	47	42	26	31	37	26	70	22	38	39	43
not (so) important	22	26	30	40	31	48	14	27	20	21	25
no reply	7	3	22	17	5	17	0	0	0	3	4
<b>Increase in contracting out</b>											
very important	16	3	0	7	11	12	6	20	9	2	6
important	38	16	26	28	38	26	43	24	15	26	28
not (so) important	38	76	44	39	43	45	51	56	76	67	59
no reply	8	5	30	26	8	17	0	0	0	5	7



Table 4c (continued)

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>											
very important	9	21	9	7	32	33	21	51	25	6	20
important	67	47	17	31	32	21	70	18	42	44	45
not (so) important	16	29	39	34	29	29	9	31	33	45	30
no reply	8	3	35	28	7	17	0	0	0	5	6
<b>Insufficient production capacity</b>											
very important	5	3	9	3	2	14	1	27	17	7	5
important	15	18	30	19	9	24	12	16	32	14	15
not (so) important	72	74	30	50	76	43	87	58	51	74	72
no reply	8	5	31	28	13	19	0	0	0	5	8
<b>Other reasons</b>											
very important	15	4	9	3	5	7	26	0	62	2	10
important	0	1	4	2	3	2	14	0	7	4	4
not (so) important	15	0	0	7	15	10	60	0	31	3	15
no reply	70	95	87	88	77	81	0	0	0	91	72

Table 4d: Obstacles to employing more people in the consumer goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>											
<b>competition</b>											
very important	31	31	31	39	31	39	66	49	40	16	35
important	42	36	31	24	27	22	22	24	43	34	31
not (so) important	26	24	18	17	27	30	12	27	17	40	27
no reply	1	9	20	20	15	10	0	0	0	0	7
<b>wage and salary levels</b>											
very important	18	26	10	8	5	23	11	35	10	5	14
important	61	43	31	44	32	26	71	33	31	42	45
not (so) important	20	20	37	18	48	38	18	31	59	53	33
no reply	1	11	22	30	15	13	0	0	0	1	9
<b>non-wage labour costs</b>											
very important	58	38	17	45	36	32	16	47	23	4	28
important	32	36	36	29	38	26	77	24	27	33	40
not (so) important	9	15	23	7	16	32	7	29	50	62	24
no reply	1	11	24	19	10	10	0	0	0	1	7
<b>other costs</b>											
very important	3	10	29	18	7	19	62	20	25	9	19
important	64	36	31	34	17	28	24	41	29	27	30
not (so) important	32	38	20	20	47	41	14	37	56	60	39
no reply	1	16	20	28	29	12	0	2	0	4	13
<b>Insufficient flexibility in hiring and shedding labour</b>											
very important	22	27	23	33	30	27	67	41	27	9	31
important	18	32	31	33	25	19	15	27	20	42	29
not (so) important	57	34	26	18	33	45	18	29	53	48	34
no reply	3	7	20	16	12	9	0	2	0	2	6
<b>Present and expected levels of demand</b>											
very important	45	41	19	24	20	49	69	69	23	51	42
important	21	28	27	35	31	23	23	16	40	27	28
not (so) important	32	27	38	25	34	22	8	16	37	21	24
no reply	2	4	16	16	15	6	0	0	0	0	5
<b>Shortage of adequately skilled applicants</b>											
very important	12	23	24	11	12	9	7	33	32	21	18
important	54	37	28	20	32	14	73	20	28	33	39
not (so) important	32	34	29	46	46	67	20	45	40	45	38
no reply	2	6	19	23	10	10	0	2	0	1	6
<b>Increase in contracting out</b>											
very important	3	5	2	5	13	13	3	22	4	1	6
important	48	11	12	11	16	26	15	18	25	20	16
not (so) important	46	76	56	56	57	54	82	59	71	78	70
no reply	3	8	30	28	14	8	0	2	0	1	8

Table 4d (continued)

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>											
very important	51	17	12	10	30	42	17	59	26	19	22
important	24	41	35	27	34	22	73	18	28	37	41
not (so) important	23	36	30	39	27	27	9	24	46	43	31
no reply	2	6	23	24	9	9	0	0	0	1	6
<b>Insufficient production capacity</b>											
very important	3	3	10	1	3	8	1	29	8	15	6
important	34	14	15	15	9	17	68	10	38	16	23
not (so) important	60	75	48	58	73	61	31	61	54	67	63
no reply	3	8	27	26	15	14	0	0	0	2	8
<b>Other reasons</b>											
very important	3	3	15	8	11	1	34	0	43	4	11
important	0	2	2	2	5	0	3	0	10	1	3
not (so) important	10	0	1	8	13	4	63	0	47	2	15
no reply	87	95	82	82	71	95	0	0	0	93	68

Table 4e: Obstacles to employing more people in companies with fewer than 200 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Insufficient profit margin due to:</b>										
<b>competition</b>										
very important	29	28	39	37	34	39	37	49	21	31
important	39	37	27	32	32	18	36	17	48	37
not (so) important	25	22	14	12	22	33	27	34	30	24
no reply	7	13	20	19	12	10	:	1	2	10
<b>wage and salary levels</b>										
very important	17	26	9	9	8	20	14	37	9	16
important	44	43	36	45	31	27	48	32	54	43
not (so) important	32	18	31	16	45	37	38	28	36	30
no reply	7	13	24	30	16	16	:	2	2	12
<b>non-wage labour costs</b>										
very important	47	22	22	45	44	31	43	48	11	31
important	32	34	36	31	33	25	42	25	42	36
not (so) important	14	12	18	5	13	30	15	26	45	20
no reply	7	12	24	19	11	14	:	1	2	10
<b>other costs</b>										
very important	7	9	30	21	7	24	22	23	11	13
important	30	36	29	31	22	25	46	27	35	34
not (so) important	55	37	18	20	47	35	32	39	45	38
no reply	8	18	23	28	24	16	:	1	9	17
<b>Insufficient flexibility in hiring and shedding labour</b>										
very important	31	27	24	36	36	31	37	45	13	29
important	34	34	29	33	29	17	34	23	37	33
not (so) important	27	30	26	14	23	39	29	31	57	33
no reply	8	9	21	16	12	13	:	1	3	9
<b>Present and expected levels of demand</b>										
very important	28	36	20	23	27	51	29	70	56	37
important	44	31	29	36	30	23	47	18	31	34
not (so) important	20	24	28	22	27	19	24	12	10	21
no reply	8	9	23	19	16	7	:	1	3	10
<b>Shortage of adequately skilled applicants</b>										
very important	31	30	23	13	33	13	21	51	36	29
important	33	35	30	24	28	17	38	17	40	33
not (so) important	29	27	27	40	28	55	41	31	22	30
no reply	7	8	20	23	12	16	:	1	2	9
<b>Increase in contracting out</b>										
very important	7	4	3	4	8	7	10	18	4	6
important	22	11	10	13	22	22	26	18	20	18
not (so) important	62	74	51	55	53	56	64	63	74	66
no reply	9	11	36	28	18	15	:	2	3	12



Table 4e (continued)

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>										
very important	23	15	13	9	18	33	30	54	13	19
important	41	37	25	27	31	19	45	18	33	35
not (so) important	28	38	34	36	35	32	25	28	51	37
no reply	8	10	28	28	15	16	:	1	2	11
<b>Insufficient production capacity</b>										
very important	8	3	7	5	6	13	5	29	9	6
important	23	16	20	19	15	22	27	11	26	20
not (so) important	60	67	41	49	60	46	67	60	61	62
no reply	9	14	32	27	19	19	:	1	4	14
<b>Other reasons</b>										
very important	7	6	11	6	4	3	25	:	3	8
important	2	1	3	2	2	0	8	:	1	2
not (so) important	17	0	1	8	19	4	67	:	2	15
no reply	74	93	85	84	76	93	:	:	95	84

Table 4f: Obstacles to employing more people in companies with 200 to 499 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Insufficient profit margin due to:</b>										
<b>competition</b>										
very important	27	27	33	35	35	44	32	31	26	29
important	41	35	22	27	30	23	38	29	46	35
not (so) important	23	25	17	15	24	15	30	35	28	24
no reply	9	13	28	23	11	18	:	6	0	10
<b>wage and salary levels</b>										
very important	24	20	22	10	4	23	13	31	11	13
important	40	48	33	50	30	23	52	24	48	43
not (so) important	31	19	25	16	49	31	35	43	40	30
no reply	5	13	20	25	18	23	:	2	0	12
<b>non-wage labour costs</b>										
very important	55	34	22	46	35	26	42	35	6	30
important	28	38	25	35	40	26	45	27	37	37
not (so) important	12	15	36	3	16	28	14	37	56	22
no reply	5	13	17	15	9	21	:	2	1	9
<b>other costs</b>										
very important	6	6	31	15	10	23	13	20	15	11
important	37	36	39	33	26	21	52	24	31	34
not (so) important	49	39	11	22	43	33	35	47	50	38
no reply	8	19	19	30	21	23	:	8	3	16
<b>Insufficient flexibility in hiring and shedding labour</b>										
very important	33	30	33	34	26	28	31	41	18	26
important	28	34	25	33	33	23	41	35	24	31
not (so) important	29	30	28	17	27	39	28	22	57	32
no reply	10	6	14	17	14	10	:	2	1	8
<b>Present and expected levels of demand</b>										
very important	38	40	25	17	22	59	27	67	58	35
important	34	28	31	31	34	15	46	16	23	30
not (so) important	19	28	30	29	30	8	27	16	19	25
no reply	9	4	14	23	14	18	:	0	0	7
<b>Shortage of adequately skilled applicants</b>										
very important	30	29	8	14	26	3	22	47	27	24
important	33	40	33	22	28	21	40	35	44	35
not (so) important	30	26	39	43	33	54	38	18	27	30
no reply	7	5	20	21	13	23	:	0	2	8
<b>Increase in contracting out</b>										
very important	6	5	0	3	9	15	9	20	1	5
important	23	14	6	17	23	23	31	29	15	18
not (so) important	62	75	72	55	54	46	60	51	82	65
no reply	9	6	22	25	15	15	:	0	2	9

**Table 4f** (*continued*)

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>										
very important	15	19	22	6	28	51	31	61	16	20
important	52	42	28	28	34	28	46	22	38	38
not (so) important	24	35	33	41	28	8	23	16	46	33
no reply	9	4	17	26	10	13	:	0	0	7
<b>Insufficient production capacity</b>										
very important	3	3	11	1	3	5	5	27	11	5
important	25	17	8	13	16	15	24	22	16	17
not (so) important	63	73	56	57	64	56	70	51	73	66
no reply	9	7	25	29	17	23	:	0	0	10
<b>Other reasons</b>										
very important	5	2	17	6	4	3	44	:	4	10
important	0	1	0	2	2	3	9	:	2	3
not (so) important	19	0	0	3	19	3	47	:	1	12
no reply	76	97	83	89	76	92	:	:	93	86

Table 4g: Obstacles to employing more people in companies with 500 to 999 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Insufficient profit margin due to:</b>										
<b>competition</b>										
very important	24	21	38	46	28	32	21	31	18	25
important	39	43	25	20	39	26	52	29	48	42
not (so) important	29	27	31	4	21	37	27	35	34	26
no reply	8	9	6	30	13	5	:	6	0	9
<b>wage and salary levels</b>										
very important	19	12	13	20	4	32	8	31	11	12
important	44	60	31	23	34	26	44	24	49	45
not (so) important	29	19	37	7	50	26	48	43	40	34
no reply	8	9	19	50	13	16	:	2	0	12
<b>non-wage labour costs</b>										
very important	64	25	13	40	30	21	38	35	6	27
important	13	52	37	20	40	11	44	27	29	39
not (so) important	15	12	31	13	40	53	41	47	55	32
no reply	8	11	19	36	12	16	:	2	0	11
<b>other costs</b>										
very important	9	4	25	30	8	0	13	20	11	11
important	21	45	25	23	30	32	46	24	27	35
not (so) important	62	39	31	13	40	53	41	47	55	41
no reply	8	12	19	34	22	16	:	8	7	15
<b>Insufficient flexibility in hiring and shedding labour</b>										
very important	25	16	31	33	24	21	39	41	11	23
important	26	43	44	27	38	37	41	35	44	40
not (so) important	38	38	12	4	30	26	20	22	44	31
no reply	11	3	13	36	8	16	:	2	0	7
<b>Present and expected levels of demand</b>										
very important	36	40	13	36	28	63	33	67	55	40
important	32	28	56	27	34	5	42	16	30	32
not (so) important	23	29	25	7	27	26	25	16	15	23
no reply	9	3	6	30	12	5	:	0	0	7
<b>Shortage of adequately skilled applicants</b>										
very important	18	19	12	20	26	11	24	47	20	22
important	51	48	19	20	33	16	41	35	39	39
not (so) important	22	32	50	24	34	63	35	18	41	34
no reply	9	1	19	36	7	11	:	0	0	6
<b>Increase in contracting out</b>										
very important	3	4	6	7	6	32	2	20	1	4
important	23	14	31	13	23	21	40	29	11	20
not (so) important	66	79	38	40	61	32	58	51	88	69
no reply	8	3	25	40	11	16	:	0	1	8



Table 4g (continued)

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>										
very important	26	19	38	11	27	68	36	61	14	24
important	52	52	37	20	42	16	51	22	26	41
not (so) important	14	27	12	30	27	11	13	16	60	31
no reply	8	2	13	39	5	5	:	0	0	6
<b>Insufficient production capacity</b>										
very important	4	5	6	7	2	0	2	27	5	5
important	19	20	0	11	19	11	16	22	10	16
not (so) important	69	71	69	39	64	68	82	51	85	71
no reply	8	4	25	43	14	21	:	0	0	10
<b>Other reasons</b>										
very important	5	1	13	13	11	0	15	:	14	9
important	0	1	0	4	1	0	10	:	0	2
not (so) important	20	0	0	7	21	11	75	:	3	17
no reply	66	98	87	77	67	89	:	:	83	68

Table 4h: Obstacles to employing more people in companies with 1 000 or more employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Insufficient profit margin due to:</b>										
<b>competition</b>										
very important	23	25	45	63	20	:	54	31	31	33
important	58	30	11	17	25	:	28	29	23	27
not (so) important	19	33	11	11	30	:	18	35	43	30
no reply	0	12	33	9	25	:	:	6	3	12
<b>wage and salary levels</b>										
very important	15	12	22	0	4	:	5	31	2	7
important	72	48	11	58	29	:	74	24	43	48
not (so) important	13	28	34	17	53	:	21	43	52	35
no reply	0	12	33	25	15	:	:	2	3	11
<b>non-wage labour costs</b>										
very important	62	28	22	19	24	:	10	35	1	20
important	35	41	34	58	42	:	75	27	36	46
not (so) important	3	19	11	6	19	:	15	37	59	25
no reply	0	12	33	17	15	:	:	2	4	11
<b>other costs</b>										
very important	0	9	33	21	5	:	54	20	1	15
important	66	32	11	56	22	:	29	24	38	33
not (so) important	34	47	22	6	40	:	17	47	54	38
no reply	0	12	34	18	34	:	:	8	7	16
<b>Insufficient flexibility in hiring and shedding labour</b>										
very important	15	12	33	26	33	:	53	41	3	23
important	32	53	0	31	28	:	28	35	37	38
not (so) important	53	34	33	26	26	:	19	22	58	34
no reply	0	1	34	17	14	:	:	2	3	6
<b>Present and expected levels of demand</b>										
very important	38	34	11	32	25	:	63	67	47	40
important	38	15	33	32	18	:	32	16	36	25
not (so) important	24	51	34	26	29	:	5	16	15	28
no reply	0	0	22	9	28	:	:	0	3	8
<b>Shortage of adequately skilled applicants</b>										
very important	6	20	0	11	9	:	4	47	21	15
important	55	46	67	17	35	:	84	35	27	44
not (so) important	39	34	0	47	38	:	12	18	49	35
no reply	0	0	33	25	18	:	:	0	3	8
<b>Increase in contracting out</b>										
very important	17	3	0	6	7	:	5	20	1	5
important	53	12	22	36	22	:	23	29	24	22
not (so) important	30	84	45	36	50	:	72	51	72	66
no reply	0	1	33	22	21	:	:	0	3	8

**Table 4h** (*continued*)

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Rationalization and/or introduction of new technologies</b>										
very important	62	22	11	0	45	:	23	61	19	26
important	26	48	56	21	31	:	76	22	49	46
not (so) important	12	30	22	59	15	:	1	16	28	24
no reply	0	0	11	21	9	:	:	0	3	5
<b>Insufficient production capacity</b>										
very important	0	2	0	6	4	:	2	27	11	5
important	30	11	11	6	8	:	58	22	14	19
not (so) important	70	85	56	63	68	:	40	51	71	68
no reply	0	2	33	26	20	:	:	0	4	9
<b>Other reasons</b>										
very important	8	2	11	6	7	:	0	:	0	3
important	0	4	0	0	4	:	0	:	3	2
not (so) important	23	0	0	0	10	:	100	:	2	18
no reply	69	94	89	94	79	:	:	:	95	73

Source: Special EC labour market survey.

**Table 5****Obstacles to employing more people in industry**

Question: See Table 4.

The figures below are characteristic values calculated from Table 4.

**Table 5a: Obstacles to employing more people in industry (characteristic values)**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
Insufficient profit margin due to:											
competition	49	44	51	53	42	49	60	55	63	44	48
wage and salary levels	43	42	29	32	20	35	39	40	31	31	34
non-wage labour costs	69	53	38	61	51	41	55	57	40	25	48
other costs	25	26	45	36	19	34	55	39	38	25	31
Insufficient flexibility in hiring and shedding labour	43	42	41	52	47	40	62	58	42	27	44
Present and expected levels of demand	53	49	36	39	38	65	66	77	47	69	54
Shortage of adequately skilled applicants	43	46	35	26	37	20	44	59	51	45	43
Increase in contracting out	24	10	9	12	18	23	20	30	16	12	15
Rationalization and/or introduction of new technologies	52	40	30	21	49	50	58	66	40	36	43
Insufficient production capacity	18	11	16	13	11	20	24	36	29	18	16
Other reasons	8	4	13	8	8	3	29	0	54	5	11

**Table 5b: Obstacles to employing more people in the intermediate goods industry (characteristic values)**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
Insufficient profit margin due to:											
competition	44	40	58	56	38	52	49	65	47	44	45
wage and salary levels	40	35	34	33	20	35	33	49	35	34	32
non-wage labour costs	70	42	62	51	34	64	50	43	24	25	40
other costs	17	20	48	38	21	37	45	37	44	30	29
Insufficient flexibility in hiring and shedding labour	44	30	42	51	48	45	49	55	47	23	38
Present and expected levels of demand	53	45	37	37	34	67	54	75	50	67	50
Shortage of adequately skilled applicants	41	37	31	24	37	21	39	69	55	39	38
Increase in contracting out	28	6	8	9	11	18	26	28	14	9	12
Rationalization and/or introduction of new technologies	57	37	34	22	49	51	66	67	41	42	45
Insufficient production capacity	16	10	12	14	15	20	20	41	29	16	16
Other reasons	10	5	11	9	4	1	21	0	58	5	9



**Table 5c: Obstacles to employing more people in the investment goods industry (characteristic values)**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
Insufficient profit margin due to:											
competition	56	43	39	52	49	45	38	58	55	54	47
wage and salary levels	47	43	28	35	20	34	33	49	37	32	35
non-wage labour costs	67	55	37	59	49	44	44	62	44	25	47
other costs	31	27	33	35	16	30	33	39	49	21	27
Insufficient flexibility in hiring and shedding labour	56	46	48	56	51	39	52	64	37	28	46
Present and expected levels of demand	53	48	40	40	50	67	53	82	46	73	55
Shortage of adequately skilled applicants	48	50	35	28	46	22	51	62	61	57	49
Increase in contracting out	35	11	13	21	30	25	28	32	17	15	20
Rationalization and/or introduction of new technologies	43	45	18	23	48	44	56	60	46	28	42
Insufficient production capacity	13	12	24	13	7	26	7	35	33	14	13
Other reasons	15	5	11	4	7	8	33	0	66	4	12

**Table 5d: Obstacles to employing more people in the consumer goods industry (characteristic values)**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
Insufficient profit margin due to:											
competition	52	49	47	51	45	50	77	61	62	33	51
wage and salary levels	49	48	26	30	21	36	47	52	26	26	37
non-wage labour costs	74	56	35	60	55	45	55	59	37	21	49
other costs	35	28	45	35	16	33	74	41	30	23	34
Insufficient flexibility in hiring and shedding labour	31	43	39	40	43	37	75	55	37	30	45
Present and expected levels of demand	56	55	33	42	36	61	81	77	43	65	57
Shortage of adequately skilled applicants	39	42	38	21	28	16	44	43	46	38	37
Increase in contracting out	27	11	8	11	21	26	11	31	17	11	14
Rationalization and/or introduction of new technologies	63	38	30	24	47	53	54	68	40	38	43
Insufficient production capacity	20	10	18	9	8	17	35	34	27	23	18
Other reasons	3	4	16	9	14	1	36	0	48	5	13

**Table 5e: Obstacles to employing more people in companies with fewer than 200 employees**

	B	D	GR	E	F	IRL	I	NL	UK	EUR
Insufficient profit margin due to:										
competition	49	47	53	53	50	48	55	58	43	49
wage and salary levels	39	48	27	32	24	34	38	53	36	38
non-wage labour costs	63	39	40	61	61	44	64	61	32	49
other costs	22	27	45	37	18	37	45	37	29	30
Insufficient flexibility in hiring and shedding labour	48	44	39	53	51	40	54	57	32	46
Present and expected levels of demand	50	52	35	41	42	63	53	79	72	54
Shortage of adequately skilled applicants	48	48	38	25	47	22	40	60	56	46
Increase in contracting out	18	10	8	11	19	18	23	27	14	15
Rationalization and/or introduction of new technologies	44	34	26	23	34	43	53	63	30	37
Insufficient production capacity	20	11	17	15	14	24	19	59	22	18
Other reasons	8	7	13	7	5	3	29	:	4	9

**Table 5f: Obstacles to employing more people in companies with 200 to 499 employees**

	B	D	GR	E	F	IRL	I	NL	UK	EUR
Insufficient profit margin due to:										
competition	48	45	44	49	50	56	51	46	49	48
wage and salary levels	44	44	39	35	19	35	39	43	35	36
non-wage labour costs	69	53	35	64	55	39	65	49	25	50
other costs	25	24	51	32	23	34	39	332	31	29
Insufficient flexibility in hiring and shedding labour	47	47	46	51	43	40	52	59	30	44
Present and expected levels of demand	55	54	41	33	39	67	50	75	70	53
Shortage of adequately skilled applicants	47	49	25	25	40	14	42	65	49	44
Increase in contracting out	18	12	3	12	21	27	25	35	9	16
Rationalization and/or introduction of new technologies	41	40	36	20	45	65	54	72	35	42
Insufficient production capacity	16	12	15	8	11	13	17	38	19	15
Other reasons	5	3	17	7	5	5	49	:	3	11

**Table 5g: Obstacles to employing more people in companies with 500 to 999 employees**

	B	D	GR	E	F	IRL	I	NL	UK	EUR
Insufficient profit margin due to:										
competition	44	43	51	56	48	45	47	46	42	46
wage and salary levels	41	42	29	32	21	45	30	43	36	34
non-wage labour costs	71	51	32	50	50	27	60	49	21	46
other costs	20	27	38	42	23	16	36	32	25	29
Insufficient flexibility in hiring and shedding labour	38	38	53	47	43	40	60	59	33	43
Present and expected levels of demand	52	54	41	50	45	66	54	75	70	56
Shortage of adequately skilled applicants	44	43	22	30	43	19	45	65	40	42
Increase in contracting out	15	11	22	14	18	43	22	35	7	15
Rationalization and/or introduction of new technologies	52	45	57	21	48	76	62	72	27	44
Insufficient production capacity	14	15	6	13	12	6	10	38	10	13
Other reasons	5	2	13	15	12	:	20	:	14	10

**Table 5h: Obstacles to employing more people in companies with 1 000 or more employees**

	B	D	GR	E	F	IRL	I	NL	UK	EUR
Insufficient profit margin due to:										
competition	52	40	51	72	33	:	68	46	43	47
wage and salary levels	51	36	28	29	19	50	42	43	24	32
non-wage labour costs	80	49	39	48	45	100	48	49	19	43
other costs	33	25	39	49	16	25	69	32	20	32
Insufficient flexibility in hiring and shedding labour	31	39	33	42	47	50	67	59	22	42
Present and expected levels of demand	57	42	28	48	34	50	79	75	65	53
Shortage of adequately skilled applicants	34	43	34	20	27	:	46	65	35	37
Increase in contracting out	44	9	11	24	18	25	17	35	13	16
Rationalization and/or introduction of new technologies	75	46	39	11	61	25	61	72	44	49
Insufficient production capacity	15	8	6	9	8	:	31	38	18	15
Other reasons	8	4	11	6	9	0	0	0	2	4

Source: Special EC labour market survey.

**Table 6****Working hours and operating hours in industry**

Question: 1. What are the average operating hours per week in your company?

2. What are the average contracted weekly working hours for a full-time employee in your company?

**Table 6a: Working hours and operating hours in industry**

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	27	15	20	19	19	0	77	3	54	40	2	0	1	37
<b>D</b>	25	48	18	5	2	2	53	0	56	43	1	0	0	38
<b>GR</b>	45	24	3	9	18	1	64	9	2	3	79	7	0	40
<b>E</b>	23	38	9	14	14	2	69	3	6	13	69	7	2	40
<b>F</b>	28	24	15	16	13	4	69	1	11	81	4	1	2	39
<b>IRL</b>	19	61	2	5	12	2	61	4	4	13	78	2	0	41
<b>I</b>	11	50	5	20	14	0	73	:	:	:	:	:	:	39
<b>NL</b>	20	37	5	12	26	0	74	1	20	42	33	4	0	39
<b>P</b>	10	80	3	4	3	0	54	:	:	:	:	:	:	44
<b>UK</b>	18	34	13	13	21	1	76	1	50	36	8	2	4	37
<b>EUR</b>	22	40	13	12	12	2	66	1	37	45	14	2	2	39

**Table 6b: Working hours and operating hours in the intermediate goods industry**

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	21	8	10	35	26	0	91	0	63	31	2	1	3	37
<b>D</b>	6	49	21	16	7	1	68	0	21	78	1	0	0	38
<b>GR</b>	37	18	4	10	30	1	79	5	1	3	83	8	0	41
<b>E</b>	18	30	9	23	19	1	79	2	6	14	69	7	2	40
<b>F</b>	16	21	15	17	26	4	85	0	181	82	5	2	3	39
<b>IRL</b>	18	61	3	3	15	0	64	3	4	11	78	4	0	40
<b>I</b>	9	27	7	20	37	0	97	37	:	:	:	:	:	:
<b>NL</b>	19	23	7	16	35	0	91	0	23	42	32	4	0	40
<b>P</b>	6	80	3	5	6	0	58	45	:	:	:	:	:	:
<b>UK</b>	18	24	7	14	38	0	93	2	48	30	12	3	5	38
<b>EUR</b>	13	33	12	17	24	1	82	1	24	56	15	2	2	39

Table 6c: Working hours and operating hours in the investment goods industry

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	42	21	6	30	0	1	58	25	51	22	2	0	0	36
<b>D</b>	35	43	19	1	0	2	47	0	88	11	1	0	0	37
<b>GR</b>	61	17	0	18	4	0	51	4	9	4	78	5	0	40
<b>E</b>	27	52	7	3	6	5	54	3	8	15	59	13	2	40
<b>F</b>	44	33	10	7	3	3	50	0	12	83	3	1	1	39
<b>IRL</b>	19	59	0	5	17	0	66	0	0	12	88	0	0	41
<b>I</b>	11	44	5	39	1	0	69	40	:	:	:	:	:	:
<b>NL</b>	22	53	7	4	13	0	62	2	7	42	42	7	0	40
<b>P</b>	13	82	1	3	1	0	50	44	:	:	:	:	:	:
<b>UK</b>	17	61	3	7	9	3	60	1	46	43	4	2	5	38
<b>EUR</b>	28	46	9	10	4	2	55	2	47	35	12	2	2	39

Table 6d: Working hours and operating hours in the consumer goods industry

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	21	12	45	5	16	1	74	0	39	59	1	0	1	38
<b>D</b>	18	57	12	9	2	2	55	0	15	85	0	0	0	39
<b>GR</b>	48	32	3	7	9	1	54	13	1	2	75	9	0	40
<b>E</b>	28	45	8	8	8	3	58	4	2	8	77	5	3	40
<b>F</b>	33	21	20	21	2	3	60	1	17	76	4	1	1	39
<b>IRL</b>	19	62	3	6	6	4	56	6	5	15	73	0	0	39
<b>I</b>	12	23	52	7	6	0	68	:	:	:	:	:	:	40
<b>NL</b>	18	37	2	16	27	0	82	0	29	43	25	2	0	38
<b>P</b>	14	79	3	3	1	0	50	:	:	:	:	:	:	44
<b>UK</b>	22	18	25	17	18	0	77	1	57	32	9	1	2	38
<b>EUR</b>	22	36	22	12	8	1	64	1	25	58	14	1	1	39



Table 6e: Working hours and operating hours in companies with fewer than 200 employees

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	38	20	16	12	14	0	66	1	48	46	3	1	2	37
<b>D</b>	42	50	4	2	1	1	44	0	41	57	2	0	0	38
<b>GR</b>	53	28	3	5	10	1	53	11	3	1	75	10	0	40
<b>E</b>	25	43	8	11	11	2	63	3	4	11	73	8	1	40
<b>F</b>	46	25	9	10	6	5	54	1	3	82	9	3	2	38
<b>IRL</b>	19	64	2	3	10	2	58	3	4	13	80	1	0	41
<b>I</b>	24	49	6	11	9	60	41	:	:	:	:	:	:	:
<b>NL</b>	24	38	4	11	24	0	76	0	17	47	32	4	0	39
<b>UK</b>	29	46	6	8	10	0	59	1	39	35	16	3	6	38
<b>EUR</b>	35	43	6	7	7	2	55	1	27	50	18	3	2	39

Table 6f: Working hours and operating hours in companies with 200 to 499 employees

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	21	18	8	28	23	2	85	0	62	34	4	0	0	38
<b>D</b>	29	53	10	4	3	1	51	0	51	48	1	0	0	38
<b>GR</b>	31	17	5	8	36	3	86	3	0	8	83	6	0	41
<b>E</b>	15	28	9	24	22	3	84	2	9	15	67	3	5	41
<b>F</b>	29	25	15	14	14	3	69	1	7	85	5	1	2	39
<b>IRL</b>	18	59	0	5	18	0	67	0	5	10	82	3	0	41
<b>I</b>	13	43	7	12	21	6	79	40	:	:	:	:	:	:
<b>NL</b>	10	24	8	20	37	0	96	2	29	37	31	2	0	39
<b>UK</b>	21	31	9	14	24	1	79	1	45	39	7	2	6	38
<b>EUR</b>	23	37	10	12	16	2	70	1	34	48	14	1	2	39

Table 6g: Working hours and operating hours in companies with 500 to 999 employees

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	17	13	14	9	47	0	101	0	84	16	0	0	0	37
<b>D</b>	9	52	20	11	4	4	62	0	56	44	0	0	0	38
<b>GR</b>	19	19	0	19	43	0	99	0	0	6	94	0	0	41
<b>E</b>	24	20	24	13	13	6	71	7	16	16	56	0	4	39
<b>F</b>	21	20	18	26	13	3	77	0	11	79	4	1	5	39
<b>IRL</b>	26	42	5	5	16	5	65	16	5	16	58	5	0	39
<b>I</b>	13	34	8	21	24	84	39	:	:	:	:	:	:	:
<b>NL</b>	10	24	8	20	37	0	96	2	29	37	31	2	0	39
<b>UK</b>	12	25	21	20	23	0	85	0	60	32	6	2	0	38
<b>EUR</b>	14	33	17	18	20	3	76	1	42	43	12	1	1	38

Table 6h: Working hours and operating hours in companies with 1 000 or more employees

	Average operating hours per week							Average contracted weekly working hours for a full-time employee						
	< 40	40-60	60-80	80-120	≥ 120	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	14	3	40	29	14	0	84	9	45	44	0	0	2	37
<b>D</b>	15	43	33	7	1	1	58	0	73	27	0	0	0	37
<b>GR</b>	11	0	0	56	33	0	109	0	0	0	100	0	0	41
<b>E</b>	43	20	6	11	20	0	68	0	11	42	31	11	6	40
<b>F</b>	16	25	19	19	18	3	79	0	19	79	0	0	2	39
<b>IRL</b>	0	0	0	100	0	0	100	0	0	50	50	0	0	40
<b>I</b>	3	16	40	25	13	3	84	39	:	:	:	:	:	:
<b>NL</b>	10	24	8	20	37	0	96	2	29	37	31	2	0	39
<b>UK</b>	12	30	15	14	27	2	85	1	55	37	3	2	2	38
<b>EUR</b>	15	28	24	16	15	1	76	1	46	42	8	2	2	38

Source: Special EC labour market survey.

**Table 7****Holiday shutdowns**

- Question: 1. Do you regularly close your company in the course of the year for holidays?  
 2. How many weeks does the holiday shutdown last?  
 3. Do you have plans for changing the length of the holiday shutdown in your company?

**Table 7a: Holiday shutdowns in industry**

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	29	71	1	11	27	25	5	0	1	59	11	1	29
<b>D</b>	64	36	1	7	20	6	1	1	0	83	5	2	10
<b>GR</b>	45	55	0	6	16	30	3	0	0	77	7	3	13
<b>E</b>	0	67	1	4	7	48	5	1	0	89	3	4	4
<b>F</b>	36	54	5	7	10	18	19	2	4	53	15	1	31
<b>IRL</b>	44	56	1	13	25	14	2	0	1	50	3	1	46
<b>I</b>	15	85	5	7	33	38	2	0	0	83	13	4	0
<b>NL</b>	51	49	2	9	26	8	3	0	0	80	9	8	3
<b>P</b>	48	52	2	8	11	31	0	0	0	95	3	2	0
<b>UK</b>	27	71	9	17	13	14	10	9	1	90	7	2	1
<b>EUR</b>	37	58	4	9	18	20	6	2	1	79	8	2	10

**Table 7b: Holiday shutdowns in the intermediate goods industry**

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	26	74	0	18	30	20	5	1	0	55	18	1	26
<b>D</b>	72	28	1	4	15	7	1	0	0	92	3	4	1
<b>GR</b>	44	56	0	7	15	32	2	0	0	74	11	4	11
<b>E</b>	0	63	1	1	5	48	6	2	0	90	1	4	5
<b>F</b>	26	61	7	5	9	17	18	1	4	50	19	1	30
<b>IRL</b>	37	63	0	18	23	17	4	0	1	58	3	1	38
<b>I</b>	23	77	7	11	26	30	2	1	0	83	11	5	0
<b>NL</b>	37	63	2	9	40	11	2	0	0	86	6	8	0
<b>P</b>	47	53	1	8	6	36	0	0	0	95	2	3	0
<b>UK</b>	28	71	12	10	9	20	11	7	1	92	5	1	1
<b>EUR</b>	39	56	5	7	15	20	6	2	1	82	8	3	7

Table 7c: Holiday shutdowns in the investment goods industry

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	11	89	2	30	18	34	5	0	0	59	27	3	11
<b>D</b>	67	33	1	7	20	5	1	0	0	78	8	1	1
<b>GR</b>	48	52	0	9	22	21	0	0	0	70	4	9	17
<b>E</b>	0	80	3	7	7	56	6	1	0	87	3	6	4
<b>F</b>	39	51	3	8	8	15	14	0	3	52	11	1	35
<b>IRL</b>	36	64	0	19	29	14	0	0	0	55	7	0	38
<b>I</b>	20	80	9	10	56	10	2	0	0	61	33	6	0
<b>NL</b>	42	58	4	11	29	9	4	0	0	85	8	0	8
<b>P</b>	43	57	0	10	10	37	0	0	0	96	4	0	0
<b>UK</b>	21	75	12	28	22	6	9	3	1	82	13	3	3
<b>EUR</b>	37	59	5	13	23	14	5	1	1	73	13	3	12

Table 7d: Holiday shutdowns in the consumer goods industry

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	32	68	1	4	32	27	3	0	1	64	4	0	32
<b>D</b>	54	45	0	8	24	8	3	2	0	87	3	2	8
<b>GR</b>	45	55	0	4	16	31	4	0	0	81	3	1	15
<b>E</b>	0	69	1	4	8	46	8	1	1	88	3	4	5
<b>F</b>	49	45	5	1	8	12	16	5	2	59	12	0	29
<b>IRL</b>	55	45	3	4	24	10	0	0	0	41	1	0	58
<b>I</b>	6	94	6	3	23	61	1	0	0	92	6	2	0
<b>NL</b>	75	25	0	8	8	6	4	0	0	54	23	23	0
<b>P</b>	49	51	2	8	17	24	0	0	0	94	4	2	0
<b>UK</b>	36	64	6	12	7	15	9	15	0	95	4	0	0
<b>EUR</b>	38	58	3	6	16	22	6	4	0	83	6	2	9

Table 7e: Holiday shutdowns in companies with fewer than 200 employees

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	29	71	1	9	24	27	8	1	1	60	9	2	29
<b>D</b>	55	44	1	11	23	6	2	1	0	83	7	3	7
<b>GR</b>	44	56	0	6	14	33	3	0	0	75	9	3	13
<b>E</b>	0	67	2	4	7	47	6	1	0	88	3	4	5
<b>F</b>	27	71	2	5	10	24	30	1	0	68	13	1	18
<b>IRL</b>	43	57	13	25	15	1	1	2	52	2	1	46	:
<b>I</b>	11	89	10	10	32	34	4	0	86	8	6	:	:
<b>NL</b>	45	55	1	8	32	8	6	0	0	80	11	9	0
<b>UK</b>	26	73	14	14	12	16	12	7	1	89	7	3	1
<b>EUR</b>	32	65	5	10	19	20	10	2	0	81	8	3	9

Table 7f: Holiday shutdowns in companies with 200 to 499 employees

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	34	66	3	8	21	24	8	0	2	54	10	2	34
<b>D</b>	60	40	1	7	24	5	1	2	0	83	5	4	8
<b>GR</b>	44	56	0	8	20	22	6	0	0	81	3	0	16
<b>E</b>	30	70	0	4	6	51	6	2	2	87	3	6	4
<b>F</b>	32	67	6	9	10	24	17	1	0	61	15	2	22
<b>IRL</b>	44	56	5	8	28	13	3	0	51	5	0	44	:
<b>I</b>	13	87	6	7	32	37	3	0	0	81	9	10	:
<b>NL</b>	63	37	2	8	18	8	0	0	0	83	6	0	11
<b>UK</b>	21	75	8	18	11	22	11	8	0	86	10	2	2
<b>EUR</b>	34	63	4	9	18	22	7	3	0	79	8	4	11



Table 7g: Holiday shutdowns in companies with 500 to 999 employees

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	39	51	0	7	32	22	0	0	0	57	4	0	39
<b>D</b>	69	31	0	5	21	4	1	0	0	100	0	0	0
<b>GR</b>	44	56	0	6	31	18	0	0	0	81	0	6	13
<b>E</b>	40	60	0	0	3	57	0	0	0	93	4	0	4
<b>F</b>	41	56	1	8	12	22	14	0	0	66	17	1	16
<b>IRL</b>	58	42	0	16	11	5	5	0	32	5	0	63	:
<b>I</b>	19	81	4	14	32	28	3	0	0	78	13	9	:
<b>NL</b>	63	37	2	8	18	8	0	0	0	83	6	0	11
<b>UK</b>	30	69	8	14	17	12	9	9	1	93	5	1	0
<b>EUR</b>	45	55	2	9	19	18	5	2	0	86	7	2	6

Table 7h: Holiday shutdowns in companies with 1 000 or more employees

(%)

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter shutdown	Longer shutdown	No reply
<b>B</b>	19	81	0	21	35	25	0	0	0	62	19	0	19
<b>D</b>	72	28	1	3	15	8	0	1	0	75	5	0	20
<b>GR</b>	67	33	0	0	11	22	0	0	0	78	0	11	11
<b>E</b>	0	57	0	0	5	52	0	0	0	100	0	0	0
<b>F</b>	42	35	5	3	6	6	8	2	5	36	16	0	48
<b>IRL</b>	50	50	0	0	50	0	0	0	50	0	0	50	:
<b>I</b>	16	84	3	4	34	42	0	0	0	83	17	0	:
<b>NL</b>	63	37	2	8	18	8	0	0	0	83	6	0	11
<b>UK</b>	29	69	5	20	12	12	9	1	1	90	8	0	2
<b>EUR</b>	41	51	3	7	16	18	3	1	1	75	9	0	19

Source: Special EC labour market survey.

**Table 8****Shift work in industry**

Question: Do you have shift work?

1. Is your shift work:
  - continuous day and night
  - interrupted every day
  - interrupted every week
2. How many shifts per week do you use?
  - 2, 3, 4, 5, 6 or more
  - (for Germany, shifts per working day)

**Table 8a: Shift work in industry**

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
<b>B</b>	20	80	22	37	21	0	19	22	7	6	5	4	16	3.3
<b>D</b>	35	65	6	42	16	1	46	19	0	0	0	0	0	2.3
<b>GR</b>	47	52	14	14	24	0	21	24	4	2	0	0	1	2.8
<b>E</b>	31	68	17	27	24	0	1	25	33	6	3	1	0	3.8
<b>F</b>	26	74	10	40	24	0	25	19	8	4	1	2	15	2.9
<b>IRL</b>	45	55	16	15	14	10	:	:	:	:	:	:	:	:
<b>I</b>	17	83	9	35	38	0	37	31	12	1	2	0	0	2.8
<b>NL</b>	37	63	11	19	33	0	27	21	2	5	5	2	1	3.0
<b>P</b>	81	19	4	6	9	0	10	7	2	0	0	0	0	2.6
<b>UK</b>	22	73	14	22	17	20	34	29	6	4	0	0	0	2.7
<b>EUR</b>	30	70	10	33	22	4	32	23	7	2	1	1	3	2.8

**Table 8b: Shift work in the intermediate goods industry**

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
<b>B</b>	10	90	30	23	38	0	10	38	11	10	5	6	10	3.5
<b>D</b>	24	76	24	25	27	0	35	41	0	0	0	0	0	3.5
<b>GR</b>	30	69	24	13	33	0	20	34	9	4	0	0	2	3.0
<b>E</b>	17	83	26	25	32	0	1	21	46	9	5	1	0	4.0
<b>F</b>	16	84	18	36	30	0	24	25	13	8	1	2	11	3.2
<b>IRL</b>	35	65	21	11	16	17	:	:	:	:	:	:	:	:
<b>I</b>	17	83	28	23	33	0	24	41	12	2	4	0	0	3.0
<b>NL</b>	25	75	15	19	41	0	19	33	4	7	7	4	2	3.3
<b>P</b>	76	24	5	8	11	0	12	9	2	0	1	0	0	2.7
<b>UK</b>	21	78	33	18	22	5	18	53	5	2	0	0	0	2.9
<b>EUR</b>	22	78	25	24	28	1	23	38	9	3	2	1	2	3.0

Table 8c: Shift work in the investment goods industry

	(%)													
	No	Yes	Continuous day and night	Interrupted every day	Interrupted every week	Not specified	Number of shifts					Other arrangements	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
B	25	75	25	39	11	0	19	29	4	0	1	0	21	2.7
D	32	68	1	54	12	1	57	11	0	0	0	0	0	2.2
GR	74	26	6	12	9	0	13	13	0	0	0	0	0	2.5
E	47	51	6	34	10	1	0	32	17	2	0	0	0	3.4
F	33	67	4	41	21	0	28	13	6	2	1	1	17	2.6
IRL	48	52	9	17	21	5	:	:	:	:	:	:	:	:
I	17	83	2	40	40	0	23	54	4	0	2	0	0	2.8
NL	51	49	9	11	23	0	31	13	0	2	0	0	2	2.4
P	91	9	2	2	6	0	5	4	0	0	0	0	0	2.4
UK	34	66	3	20	13	30	40	25	2	0	0	0	0	2.4
EUR	35	65	4	38	18	6	35	23	4	1	0	0	4	2.5

Table 8d: Shift work in the consumer goods industry

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
B	18	82	16	59	7	0	34	7	3	1	10	9	17	3.0
D	46	54	7	30	17	0	30	23	1	0	0	0	0	2.5
GR	58	42	7	16	20	0	24	17	1	0	0	0	0	2.5
E	48	51	5	26	18	2	2	26	20	1	1	1	0	3.5
F	36	64	3	44	17	0	22	15	1	2	1	2	21	2.6
IRL	53	47	15	17	8	8	:	:	:	:	:	:	:	:
I	16	84	3	40	41	0	57	13	12	1	1	0	0	2.5
NL	39	61	10	19	32	0	33	14	2	4	6	2	0	2.9
P	86	14	3	4	7	0	7	5	2	0	0	0	0	2.6
UK	24	75	13	26	15	21	41	15	9	10	0	0	0	2.8
EUR	36	63	7	32	20	4	32	17	6	3	1	1	4	2.7

Table 8e: Shift work in companies with fewer than 200 employees

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
B	35	65	15	34	16	0	14	15	5	2	2	1	26	3.0
D	69	31	2	21	8	0	21	10	0	0	0	0	0	2.3
GR	58	41	6	12	22	0	19	20	0	1	0	0	1	2.6
E	42	57	15	26	17	0	1	22	28	5	1	1	0	3.8
F	50	49	3	32	14	0	13	9	1	1	0	0	24	2.5
IRL	53	47	11	14	12	10	:	:	:	:	:	:	:	:
I	50	50	6	24	19	0	30	18	3	1	0	0	0	3.0
NL	39	61	10	19	32	0	33	22	3	3	0	1	1	3.4
UK	65	35	7	19	7	2	24	12	0	0	0	0	0	2.4
EUR	57	42	6	23	13	0	20	13	3	1	0	0	5	2.6

Table 8f: Shift work in companies with 200 to 499 employees

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	(%)
							2	3	4	5	≥ 6			Average number of shifts
<b>B</b>	11	89	17	33	37	1	17	32	9	12	6	0	14	3.5
<b>D</b>	40	60	7	40	14	0	39	20	1	0	0	0	0	2.0
<b>GR</b>	28	72	33	17	22	0	17	33	17	6	0	0	0	3.2
<b>E</b>	11	88	21	24	42	1	1	25	46	8	6	3	0	4.0
<b>F</b>	28	71	13	35	22	0	24	17	3	7	0	0	18	2.8
<b>IRL</b>	39	61	23	13	15	10	:	:	:	:	:	:	:	:
<b>I</b>	23	77	31	26	31	0	39	29	7	2	0	0	0	2.6
<b>NL</b>	18	82	15	25	41	0	31	22	0	8	14	4	2	3.5
<b>UK</b>	28	71	18	21	25	6	23	38	8	0	1	0	0	2.8
<b>EUR</b>	29	71	16	30	24	1	28	25	8	3	1	0	4	2.7

Table 8g: Shift work in companies with 500 to 999 employees

(%)

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
<b>B</b>	10	90	48	22	20	0	7	28	25	20	0	0	9	3.7
<b>D</b>	11	89	9	44	30	6	51	38	0	0	0	0	0	2.4
<b>GR</b>	12	88	42	14	33	0	29	50	7	7	0	0	7	3.3
<b>E</b>	4	91	17	44	30	0	0	36	36	8	12	0	0	4.0
<b>F</b>	19	81	13	33	35	:	25	24	4	9	0	1	19	3.0
<b>IRL</b>	16	84	37	21	16	:	:	:	:	:	:	:	:	:
<b>I</b>	17	83	18	27	37	0	29	39	7	2	5	0	0	2.9
<b>NL</b>	18	82	15	25	41	0	31	22	0	8	14	4	2	3.3
<b>UK</b>	13	85	12	43	20	10	38	40	7	0	0	0	0	2.6
<b>EUR</b>	13	86	15	37	30	4	33	35	7	4	2	0	4	2.8

Table 8h: Shift work in companies with 1 000 or more employees

(%)

	No	Yes	Continu- ous day and night	Inter- rupted every day	Inter- rupted every week	Not specified	Number of shifts					Other arrange- ments	No detail of number of shifts	Average number of shifts
							2	3	4	5	≥ 6			
<b>B</b>	0	100	28	54	18	0	38	27	2	2	14	16	0	3.0
<b>D</b>	9	91	10	64	17	0	71	20	0	0	0	0	0	2.2
<b>GR</b>	0	100	21	36	43	0	56	22	22	0	0	0	0	2.7
<b>E</b>	6	94	31	42	21	0	0	50	38	6	0	0	0	3.5
<b>F</b>	9	92	13	49	30	0	34	28	16	5	1	2	6	2.9
<b>IRL</b>	0	100	0	50	50	50	:	:	:	:	:	:	:	:
<b>I</b>	1	99	8	44	47	0	46	35	16	0	3	0	0	2.8
<b>NL</b>	18	82	15	25	41	0	31	22	0	8	14	4	2	3.3
<b>UK</b>	2	95	19	16	21	39	40	36	8	11	0	0	0	2.9
<b>EUR</b>	6	94	15	44	27	8	45	30	11	4	2	1	1	2.7

Source: Special EC labour market survey.



**Table 9****Trend in operating hours**

Question: 1. Have the average weekly operating hours changed in the last five years?

2. Do you envisage a change in operating hours in the next 12 to 24 months?

**Table 9a: Trend in operating hours**

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	45	32	21	2	3	80	16	0
<b>D</b>	43	42	15	0	27	53	18	2
<b>GR</b>	14	61	23	2	1	83	13	3
<b>E</b>	48	29	22	1	36	44	17	3
<b>F</b>	23	30	43	4	10	52	34	4
<b>IRL</b>	20	62	15	3	35	50	14	2
<b>I</b>	13	71	16	0	7	50	43	0
<b>NL</b>	17	52	30	2	4	71	26	0
<b>P</b>	3	92	5	0	11	82	7	0
<b>UK</b>	24	28	43	5	20	47	33	1
<b>EUR</b>	29	43	26	2	18	53	27	2

**Table 9b: Trend in operating hours in the intermediate goods industry**

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	36	32	31	1	2	86	12	0
<b>D</b>	15	61	23	1	29	52	17	2
<b>GR</b>	15	61	22	2	2	83	15	0
<b>E</b>	46	31	22	1	33	48	16	3
<b>F</b>	18	29	48	5	9	50	36	5
<b>IRL</b>	17	69	14	0	32	56	11	0
<b>I</b>	26	54	20	0	15	57	28	0
<b>NL</b>	20	53	27	2	5	74	21	0
<b>P</b>	5	90	5	0	15	79	6	0
<b>UK</b>	28	31	41	1	22	55	23	1
<b>EUR</b>	23	46	30	2	20	56	22	2

Table 9c: Trend in operating hours in the investment goods industry

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	46	19	34	1	3	73	24	0
<b>D</b>	56	30	14	0	18	59	21	2
<b>GR</b>	22	56	22	0	0	74	21	5
<b>E</b>	61	14	21	4	49	28	19	4
<b>F</b>	36	21	39	4	14	51	31	4
<b>IRL</b>	7	67	24	2	35	41	24	0
<b>I</b>	8	66	26	0	5	66	29	0
<b>NL</b>	16	56	26	2	2	69	29	0
<b>P</b>	10	83	7	0	24	64	12	0
<b>UK</b>	21	28	38	13	26	33	38	3
<b>EUR</b>	35	35	26	4	18	52	27	2

Table 9d: Trend in operating hours in the consumer goods industry

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	61	28	7	4	5	78	16	1
<b>D</b>	33	55	12	0	44	41	14	1
<b>GR</b>	12	63	24	1	1	86	10	3
<b>E</b>	48	33	17	2	35	47	16	2
<b>F</b>	19	39	40	3	8	55	34	3
<b>IRL</b>	29	53	11	6	38	49	11	4
<b>I</b>	7	85	8	0	2	35	63	0
<b>NL</b>	16	47	36	2	4	69	28	0
<b>P</b>	1	96	3	0	6	88	6	0
<b>UK</b>	24	29	46	0	10	56	33	0
<b>EUR</b>	25	51	24	1	20	50	29	1

Table 9e: Trend in operating hours in companies with fewer than 200 employees

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	41	37	21	1	3	80	16	1
<b>D</b>	47	45	7	1	39	51	7	3
<b>GR</b>	15	61	22	2	2	81	15	2
<b>E</b>	44	32	22	1	34	47	16	3
<b>F</b>	28	37	28	6	7	58	29	6
<b>IRL</b>	17	62	17	5	33	49	15	2
<b>I</b>	17	70	13	4	73	18	9	:
<b>NL</b>	18	53	29	0	4	73	23	0
<b>UK</b>	29	28	43	1	17	52	30	1
<b>EUR</b>	33	44	22	2	21	58	19	3

Table 9f: Trend in operating hours in companies with 200 to 499 employees

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	45	36	19	0	3	80	17	0
<b>D</b>	46	42	12	0	35	50	13	2
<b>GR</b>	11	67	22	0	0	89	8	3
<b>E</b>	50	24	24	3	36	36	24	3
<b>F</b>	19	35	43	3	6	54	37	4
<b>IRL</b>	31	56	13	0	36	54	10	0
<b>I</b>	20	64	16	4	66	26	18	:
<b>NL</b>	14	47	36	6	2	69	29	0
<b>UK</b>	26	39	35	0	15	51	33	0
<b>EUR</b>	32	43	25	1	19	55	25	2

Table 9g: Trend in operating hours in companies with 500 to 999 employees

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	37	45	13	5	4	81	15	0
<b>D</b>	42	43	15	0	27	51	21	1
<b>GR</b>	19	37	38	6	6	81	13	0
<b>E</b>	66	23	11	0	40	43	15	3
<b>F</b>	13	20	63	5	3	56	37	4
<b>IRL</b>	16	74	5	5	42	47	5	5
<b>I</b>	17	60	23	6	70	25	20	:
<b>NL</b>	14	47	26	6	2	69	29	0
<b>UK</b>	37	17	45	1	29	42	29	0
<b>EUR</b>	32	35	31	2	19	54	25	2

Table 9h: Trend in operating hours in companies with 1 000 or more employees

	Trend in operating hours in the last five years (%)				Expected trend in operating hours in the next 12 to 24 months (%)			
	Decrease	No change	Increase	No reply	Decrease	No change	Increase	No reply
<b>B</b>	59	14	24	3	4	80	16	0
<b>D</b>	36	41	23	0	11	58	31	0
<b>GR</b>	0	89	11	0	0	100	0	0
<b>E</b>	73	26	0	0	48	43	9	0
<b>F</b>	23	25	50	3	15	46	36	3
<b>IRL</b>	50	0	50	0	0	50	50	0
<b>I</b>	8	74	18	10	31	62	55	:
<b>NL</b>	14	47	36	6	2	69	29	0
<b>UK</b>	13	31	46	11	19	44	35	2
<b>EUR</b>	27	40	30	4	15	50	35	1

Source: Special EC labour market survey.

**Table 10****Reasons for not increasing weekly operating hours**

Question: Are the following reasons for not increasing weekly operating hours in your company very important, important or not (so) important?

lack of demand  
 lack of qualified employees  
 lack of qualified applicants  
 administrative (legal) rules  
 collective agreements  
 costs of reorganization  
 already continuous work  
 other reasons

**Table 10a: Reasons for not increasing weekly operating hours in industry**

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Lack of demand</b>											
very important	17	17	28	35	35	43	30	16	32	26	26
important	22	20	24	24	19	22	19	4	31	23	21
not (so) important	57	56	21	18	24	21	51	79	37	49	45
no reply	3	7	27	23	22	14	0	1	0	3	9
<b>Lack of qualified employees</b>											
very important	9	13	10	5	9	7	5	10	26	10	10
important	25	39	17	12	22	17	24	10	23	22	26
not (so) important	63	42	39	46	43	57	71	80	51	65	54
no reply	3	6	34	37	26	19	0	0	0	3	11
<b>Lack of qualified applicants</b>											
very important	12	17	9	7	11	5	9	10	25	10	12
important	31	32	18	15	21	13	29	9	22	30	26
not (so) important	55	44	39	41	41	62	62	81	53	58	51
no reply	2	7	34	37	27	20	0	0	0	3	11
<b>Administrative (legal) rules</b>											
very important	15	24	22	8	27	5	42	16	22	1	21
important	20	34	24	13	25	14	29	7	23	4	22
not (so) important	63	36	23	41	29	61	29	77	55	92	48
no reply	2	6	31	37	19	20	0	0	0	3	9
<b>Collective agreements</b>											
very important	28	43	19	17	19	11	44	23	28	2	27
important	33	31	19	19	21	19	35	5	32	8	23
not (so) important	36	21	30	33	36	50	21	72	40	87	41
no reply	3	5	32	32	24	20	0	0	0	3	9
<b>Costs of reorganization</b>											
very important	4	4	11	6	9	10	14	10	17	6	8
important	27	21	21	17	19	20	23	8	24	11	18
not (so) important	66	66	31	39	40	50	63	82	59	81	62
no reply	3	9	38	39	31	20	0	0	0	3	12
<b>Already continuous work</b>											
very important	15	11	13	13	10	18	16	:	3	9	11
important	17	9	20	14	12	12	17	:	3	20	14
not (so) important	64	56	15	39	34	45	67	:	94	62	54
no reply	4	24	52	34	44	25	0	:	0	8	21
<b>Other reasons</b>											
very important	5	1	6	5	6	9	7	:	29	6	5
important	2	0	0	1	2	1	76	:	5	1	13
not (so) important	84	0	1	7	8	5	17	:	66	6	11
no reply	9	99	93	87	84	85	0	:	0	87	72



Table 10b: Reasons for not increasing weekly operating hours in the intermediate goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Lack of demand</b>											
very important	18	12	31	33	29	38	41	19	38	28	26
important	20	19	19	22	16	31	27	5	19	28	21
not (so) important	59	58	17	16	30	16	32	76	42	39	41
no reply	3	11	33	29	25	15	0	0	0	5	11
<b>Lack of qualified employees</b>											
very important	8	7	7	5	11	10	10	7	34	10	9
important	24	26	14	11	20	20	29	16	19	17	22
not (so) important	65	55	40	42	41	49	61	77	47	67	55
no reply	3	12	39	42	28	21	0	0	0	6	14
<b>Lack of qualified applicants</b>											
very important	9	10	5	7	10	9	13	7	34	10	11
important	24	24	13	14	24	17	28	12	19	21	22
not (so) important	63	54	44	38	37	53	59	81	47	64	53
no reply	4	12	38	41	29	21	0	0	0	5	14
<b>Administrative (legal) rules</b>											
very important	13	17	27	6	33	9	16	19	33	0	16
important	23	25	19	14	23	8	34	11	13	6	20
not (so) important	63	47	19	38	25	61	50	70	44	88	52
no reply	2	11	35	42	19	22	0	0	0	6	12
<b>Collective agreements</b>											
very important	24	18	19	16	25	13	32	25	35	3	19
important	31	34	12	18	18	16	42	4	35	10	25
not (so) important	42	38	33	31	36	49	26	71	30	81	45
no reply	3	10	36	35	21	22	0	0	0	6	11
<b>Costs of reorganization</b>											
very important	4	3	7	5	6	11	14	12	17	3	6
important	20	22	21	15	20	16	36	11	23	13	21
not (so) important	73	63	29	38	41	51	50	77	60	78	58
no reply	3	12	43	42	33	22	0	0	0	5	14
<b>Already continuous work</b>											
very important	19	32	14	18	17	25	29	:	5	19	23
important	21	14	21	14	13	14	18	:	6	16	15
not (so) important	57	34	15	35	33	34	53	:	89	57	44
no reply	3	20	50	33	37	27	0	:	0	8	18
<b>Other reasons</b>											
very important	9	1	4	5	3	9	39	:	28	3	9
important	5	0	0	2	1	1	0	:	4	0	1
not (so) important	77	0	0	7	9	1	61	:	68	9	18
no reply	9	99	96	86	87	89	0	:	0	88	72

Table 10c: Reasons for not increasing weekly operating hours in the investment goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Lack of demand</b>											
very important	17	15	18	37	44	50	35	9	21	28	28
important	18	18	26	23	19	14	17	7	42	18	19
not (so) important	63	62	17	19	14	24	48	84	37	51	45
no reply	2	5	39	21	23	12	0	0	0	3	8
<b>Lack of qualified employees</b>											
very important	15	13	17	3	10	5	3	9	17	11	10
important	25	46	22	21	25	21	35	7	29	22	31
not (so) important	57	38	26	44	36	55	62	84	54	64	49
no reply	3	3	35	32	29	19	0	0	0	3	10
<b>Lack of qualified applicants</b>											
very important	17	19	17	8	17	2	7	13	17	12	14
important	26	36	26	17	19	14	55	7	35	32	32
not (so) important	56	41	22	43	35	64	38	80	48	53	44
no reply	1	4	35	32	30	19	0	0	0	2	10
<b>Administrative (legal) rules</b>											
very important	23	24	22	11	15	5	44	18	27	1	20
important	17	39	35	18	33	19	42	0	31	3	27
not (so) important	57	35	13	39	32	57	14	82	42	93	45
no reply	3	2	30	32	21	19	0	0	0	3	8
<b>Collective agreements</b>											
very important	35	56	13	22	9	19	29	24	35	0	27
important	34	29	17	20	24	21	42	2	28	14	25
not (so) important	40	14	26	31	37	45	29	74	37	83	39
no reply	1	1	44	27	30	14	0	0	0	3	9
<b>Costs of reorganization</b>											
very important	1	3	9	6	11	12	27	11	11	2	9
important	22	23	26	16	17	24	19	4	36	8	18
not (so) important	76	69	17	42	37	48	54	85	53	88	62
no reply	1	5	48	37	35	17	0	0	0	3	12
<b>Already continuous work</b>											
very important	1	4	17	8	3	19	3	:	1	4	4
important	3	8	4	11	11	12	16	:	4	9	10
not (so) important	92	65	22	46	36	48	81	:	95	78	64
no reply	4	23	57	34	50	21	0	:	0	10	22
<b>Other reasons</b>											
very important	3	2	13	6	9	2	17	:	34	2	7
important	1	0	0	0	1	2	1	:	7	0	1
not (so) important	89	0	0	7	6	7	82	:	59	10	21
no reply	7	98	87	87	84	88	0	:	0	88	71

Table 10d: Reasons for not increasing weekly operating hours in the consumer goods industry

	B	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Lack of demand</b>											
very important	12	24	28	37	37	44	18	20	27	20	25
important	25	24	29	28	23	18	14	0	42	24	22
not (so) important	61	45	25	18	21	24	68	78	31	54	45
no reply	2	7	18	17	19	14	0	2	0	2	8
<b>Lack of qualified employees</b>											
very important	3	17	12	4	6	5	4	16	18	9	10
important	18	33	19	14	21	13	14	6	26	24	23
not (so) important	77	43	41	51	53	64	82	78	56	69	59
no reply	2	7	28	31	20	18	0	0	0	1	9
<b>Lack of qualified applicants</b>											
very important	5	18	11	4	7	4	7	10	17	8	11
important	46	30	20	17	19	9	13	8	24	32	24
not (so) important	48	44	40	47	51	68	80	82	59	58	56
no reply	1	8	29	32	23	19	0	0	0	1	10
<b>Administrative (legal) rules</b>											
very important	9	30	18	11	28	1	60	12	8	1	25
important	11	31	26	13	21	16	18	10	21	3	19
not (so) important	79	31	30	45	32	64	22	78	71	95	48
no reply	1	8	26	31	19	19	0	0	0	1	9
<b>Collective agreements</b>											
very important	34	32	19	18	18	6	62	20	18	3	26
important	43	34	28	18	21	20	26	8	30	5	23
not (so) important	22	26	28	37	37	53	12	72	52	91	42
no reply	1	8	25	26	24	21	0	0	0	1	9
<b>Costs of reorganization</b>											
very important	4	6	14	6	13	8	7	6	17	12	9
important	39	18	20	22	20	22	16	8	23	14	18
not (so) important	55	63	36	37	41	50	77	86	60	73	61
no reply	2	13	30	35	26	20	0	0	0	1	12
<b>Already continuous work</b>											
very important	10	10	11	7	6	11	10	:	1	4	8
important	22	8	23	13	13	9	18	:	1	33	16
not (so) important	65	53	13	43	34	54	72	:	98	56	53
no reply	3	29	53	37	47	26	0	:	0	7	23
<b>Other reasons</b>											
very important	2	1	5	5	10	13	2	:	28	12	6
important	0	0	0	1	2	0	91	:	7	1	15
not (so) important	92	0	2	7	9	8	7	:	66	3	9
no reply	6	99	93	87	79	79	0	:	0	84	70

Table 10e: Reasons for not increasing weekly operating hours in companies with fewer than 200 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Lack of demand</b>										
very important	21	21	32	38	40	46	44	18	34	32
important	24	26	27	25	23	22	31	5	26	25
not (so) important	49	42	15	14	19	16	25	78	36	33
no reply	6	11	26	22	18	16	:	0	4	10
<b>Lack of qualified employees</b>										
very important	12	20	12	4	20	8	13	10	19	17
important	33	32	22	14	28	22	35	12	29	29
not (so) important	49	40	35	44	35	50	52	79	48	45
no reply	6	8	31	37	18	20	:	0	3	10
<b>Lack of qualified applicants</b>										
very important	15	25	10	6	20	7	17	10	20	19
important	30	31	24	15	25	15	39	12	33	29
not (so) important	51	35	34	41	35	58	44	78	44	41
no reply	4	9	32	38	21	21	:	0	3	11
<b>Administrative (legal) rules</b>										
very important	18	25	21	7	23	5	18	20	2	17
important	25	30	23	13	25	13	22	9	8	21
not (so) important	53	37	24	42	35	60	50	72	86	51
no reply	4	8	32	37	17	22	:	0	4	10
<b>Collective agreements</b>										
very important	25	33	17	14	17	10	18	28	2	19
important	29	34	21	17	22	18	42	4	2	24
not (so) important	42	27	30	36	41	52	40	68	92	48
no reply	4	6	32	33	21	20	:	0	5	10
<b>Costs of reorganization</b>										
very important	7	6	12	6	11	10	13	11	4	8
important	24	21	22	17	28	18	40	8	9	22
not (so) important	64	59	30	38	39	51	47	81	84	57
no reply	5	14	36	39	22	22	:	0	4	13
<b>Already continuous work</b>										
very important	13	5	11	12	8	14	11	:	9	8
important	15	5	20	13	12	12	23	:	9	11
not (so) important	66	57	17	40	39	46	66	:	70	54
no reply	6	33	52	35	41	28	:	:	12	24
<b>Other reasons</b>										
very important	5	3	6	5	4	8	23	:	3	6
important	1	1	0	1	1	1	1	:	0	1
not (so) important	80	0	1	7	12	5	76	:	9	19
no reply	14	96	93	86	83	87	:	:	87	70

Table 10f: Reasons for not increasing weekly operating hours in companies with 200 to 499 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Lack of demand</b>										
very important	13	19	14	27	34	36	41	12	29	27
important	23	23	16	23	25	23	28	2	26	24
not (so) important	57	52	34	28	29	26	31	74	41	41
no reply	2	6	36	22	12	15	:	2	5	8
<b>Lack of qualified employees</b>										
very important	7	13	3	8	12	5	11	10	11	11
important	35	43	5	9	27	8	40	6	23	30
not (so) important	58	39	53	51	45	69	49	84	60	50
no reply	0	5	39	32	17	18	:	0	5	9
<b>Lack of qualified applicants</b>										
very important	12	18	6	9	14	3	20	8	13	15
important	31	38	0	19	37	13	33	6	33	32
not (so) important	57	38	56	42	41	67	47	86	50	46
no reply	0	6	38	30	17	18	:	0	3	9
<b>Administrative (legal) rules</b>										
very important	16	22	22	9	22	3	19	10	1	15
important	29	42	25	14	26	21	38	6	3	26
not (so) important	55	30	25	42	37	69	43	84	92	50
no reply	0	6	28	35	15	18	:	0	4	9
<b>Collective agreements</b>										
very important	20	32	17	22	14	10	24	18	2	19
important	37	43	17	23	14	10	24	18	2	23
not (so) important	42	21	36	30	48	41	25	80	85	43
no reply	1	4	30	25	16	21	:	0	4	8
<b>Costs of reorganization</b>										
very important	5	4	8	6	7	10	11	8	2	6
important	23	26	11	19	27	23	41	6	13	24
not (so) important	72	62	36	43	47	49	48	66	82	60
no reply	0	8	45	38	19	18	:	0	3	10
<b>Already continuous work</b>										
very important	17	8	18	13	17	23	17	:	13	13
important	19	12	25	19	11	8	22	:	11	14
not (so) important	60	55	6	38	38	44	61	:	68	51
no reply	4	25	51	30	33	26	:	:	7	18
<b>Other reasons</b>										
very important	10	1	8	6	5	13	10	:	5	5
important	0	0	0	0	3	8	7	:	1	2
not (so) important	80	0	3	5	9	3	83	:	8	19
no reply	10	99	89	90	83	77	:	:	87	71



Table 10g: Reasons for not increasing weekly operating hours in companies with 500 to 999 employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Lack of demand</b>										
very important	20	14	31	24	39	26	36	12	31	27
important	20	22	19	13	26	21	33	2	21	23
not (so) important	60	59	25	24	22	42	31	74	47	43
no reply	0	5	25	40	13	11	:	2	1	8
<b>Lack of qualified employees</b>										
very important	21	17	13	5	8	0	5	10	12	11
important	8	36	6	11	23	5	31	6	26	26
not (so) important	67	43	44	30	53	68	64	84	61	53
no reply	4	4	37	54	16	26	:	0	1	10
<b>Lack of qualified applicants</b>										
very important	21	16	13	7	9	0	11	8	10	12
important	14	38	6	11	22	0	32	6	38	29
not (so) important	61	42	44	30	49	74	57	86	51	49
no reply	4	4	37	53	20	26	:	0	1	10
<b>Administrative (legal) rules</b>										
very important	20	25	25	13	24	5	18	10	2	17
important	16	34	25	11	37	11	34	6	1	24
not (so) important	61	38	19	23	27	58	48	84	94	50
no reply	3	3	31	54	12	26	:	0	3	9
<b>Collective agreements</b>										
very important	30	40	25	24	22	26	33	18	1	25
important	30	35	13	13	24	0	51	2	9	26
not (so) important	36	22	31	16	36	47	16	80	89	39
no reply	4	3	31	47	17	26	:	0	1	9
<b>Costs of reorganization</b>										
very important	0	2	6	7	7	11	14	8	2	5
important	23	20	31	9	26	16	38	6	11	21
not (so) important	73	74	25	27	48	47	48	66	87	63
no reply	4	4	38	56	19	26	:	0	0	10
<b>Already continuous work</b>										
very important	40	19	13	16	7	37	22	:	6	14
important	11	16	25	7	25	11	32	:	19	20
not (so) important	46	45	6	27	35	37	46	:	67	44
no reply	3	20	56	50	33	16	:	:	8	19
<b>Other reasons</b>										
very important	0	0	0	4	2	11	46	:	3	9
important	0	0	0	4	6	0	0	:	0	1
not (so) important	92	0	0	9	9	5	54	:	3	14
no reply	8	100	100	84	83	84	:	:	94	73

Table 10h: Reasons for not increasing weekly operating hours in companies with 1 000 or more employees

	B	D	GR	E	F	IRL	I	NL	UK	EUR
<b>Lack of demand</b>										
very important	8	13	11	42	31	:	19	12	15	20
important	20	11	11	17	12	:	9	2	21	13
not (so) important	72	71	45	19	26	:	72	74	61	57
no reply	0	5	33	22	32	:	:	2	2	12
<b>Lack of qualified employees</b>										
very important	0	5	0	0	1	:	1	10	2	3
important	9	44	11	6	15	:	15	6	14	22
not (so) important	91	46	45	57	47	:	84	84	82	63
no reply	0	5	44	37	37	:	:	0	2	14
<b>Lack of qualified applicants</b>										
very important	0	11	0	0	3	:	2	8	2	5
important	42	28	0	6	17	:	24	6	21	21
not (so) important	58	57	56	59	43	:	74	86	74	62
no reply	0	4	44	35	37	:	:	0	2	14
<b>Administrative (legal) rules</b>										
very important	6	23	44	17	32	:	61	10	0	25
important	6	35	34	11	22	:	25	6	2	20
not (so) important	88	38	0	43	22	:	14	84	95	46
no reply	0	4	22	29	24	:	:	0	2	9
<b>Collective agreements</b>										
very important	38	59	45	26	22	:	60	18	3	36
important	41	22	22	26	19	:	26	2	13	21
not (so) important	21	16	0	26	29	:	14	80	82	35
no reply	0	3	33	23	31	:	:	0	2	9
<b>Costs of reorganization</b>										
very important	0	1	0	0	9	:	16	8	11	7
important	36	20	33	6	8	:	9	6	12	14
not (so) important	64	72	22	57	37	:	75	66	74	64
no reply	0	7	45	37	45	:	:	0	2	14
<b>Already continuous work</b>										
very important	6	14	33	26	11	:	18	:	9	14
important	23	8	0	6	10	:	5	:	33	13
not (so) important	71	61	22	43	28	:	77	:	52	52
no reply	0	17	45	26	51	:	:	:	6	18
<b>Other reasons</b>										
very important	5	1	0	5	10	:	3	:	10	5
important	5	0	0	0	1	:	90	:	1	14
not (so) important	90	0	0	16	4	:	7	:	4	6
no reply	0	99	100	78	85	:	:	:	85	70

Source: Special EC labour market survey.

**Table 11****Operating hours in industry (balances)**

Question: See Tables 6, 9 and 10.

**Table 11a: Operating hours in industry (all sectors)**

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	77	– 24	13	28	22	28	25	45	18	24	6
<b>D</b>	53	– 28	– 9	27	33	33	41	59	15	16	1
<b>GR</b>	64	9	12	40	19	18	34	29	22	23	6
<b>E</b>	69	–26	–19	47	11	15	15	27	15	20	6
<b>F</b>	69	20	24	45	20	22	40	30	19	16	7
<b>IRL</b>	62	–5	–21	54	16	12	12	21	20	24	10
<b>I</b>	77	3	36	40	17	24	57	62	26	25	45
<b>NL</b>	79	13	22	18	15	15	20	26	14	:	:
<b>P</b>	54	2	–4	48	38	36	34	44	29	5	32
<b>UK</b>	77	19	13	38	21	25	3	6	12	19	7
<b>EUR</b>	67	–3	9	36	23	25	32	38	17	18	12

**Table 11b: Operating hours in the intermediate goods industry**

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	91	–5	10	28	20	21	25	40	14	30	12
<b>D</b>	68	8	–12	22	20	22	30	35	14	39	1
<b>GR</b>	79	7	13	41	14	12	37	25	18	25	4
<b>E</b>	79	–24	–17	44	11	14	13	25	13	25	6
<b>F</b>	85	30	27	37	21	22	45	34	16	24	4
<b>IRL</b>	64	–3	–21	54	20	18	13	21	19	32	10
<b>I</b>	97	–6	13	55	25	27	33	53	32	38	39
<b>NL</b>	91	7	16	22	15	13	25	27	18	:	:
<b>P</b>	58	0	–9	48	44	44	40	53	29	8	30
<b>UK</b>	93	13	1	42	19	21	3	8	10	27	3
<b>EUR</b>	82	7	2	36	20	22	26	32	17	31	10

Table 11c: Operating hours in the investment goods industry

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	58	-12	21	26	28	30	32	47	12	3	4
<b>D</b>	47	-42	3	24	36	37	44	71	15	8	2
<b>GR</b>	51	0	21	31	28	30	40	22	22	19	13
<b>E</b>	54	-40	-30	49	14	17	20	32	14	14	6
<b>F</b>	50	3	17	54	23	27	32	21	20	9	10
<b>IRL</b>	66	17	-11	57	16	9	15	30	24	25	3
<b>I</b>	69	18	24	44	21	35	65	50	37	11	18
<b>NL</b>	62	10	27	13	13	17	18	25	13	:	:
<b>P</b>	50	-3	-12	42	32	35	43	49	29	3	38
<b>UK</b>	60	17	12	37	22	28	3	7	6	9	2
<b>EUR</b>	55	-9	9	37	25	30	33	40	18	9	8

Table 11d: Operating hours in the consumer goods industry

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	74	-54	11	25	12	28	15	56	24	21	2
<b>D</b>	55	-21	-30	36	34	33	46	49	15	14	1
<b>GR</b>	54	12	9	43	22	21	31	33	24	23	5
<b>E</b>	58	-31	-19	51	11	13	18	27	17	14	6
<b>F</b>	60	21	26	49	17	17	39	29	23	13	11
<b>IRL</b>	56	-18	-27	53	12	9	9	16	19	16	13
<b>I</b>	68	1	61	25	11	14	69	75	15	19	48
<b>NL</b>	82	20	24	20	19	14	17	24	10	:	:
<b>P</b>	50	2	0	48	31	29	19	33	29	2	32
<b>UK</b>	77	22	23	32	21	24	3	6	19	21	13
<b>EUR</b>	64	-1	9	37	21	23	34	37	18	16	14

Table 11e: Operating hours in companies with fewer than 200 employees

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	66	-20	13	33	29	30	31	40	19	21	6
<b>D</b>	44	-40	-32	34	36	41	40	50	17	8	4
<b>GR</b>	53	7	13	46	23	22	33	28	23	21	6
<b>E</b>	63	-22	-18	51	11	14	14	23	15	19	6
<b>F</b>	54	0	22	52	34	33	36	28	25	14	5
<b>IRL</b>	58	0	-18	57	19	15	12	19	19	20	9
<b>I</b>	60	-4	9	60	31	37	29	39	33	23	24
<b>NL</b>	76	11	19	21	16	16	25	30	15	:	:
<b>UK</b>	59	14	13	47	34	37	6	3	9	14	3
<b>EUR</b>	55	-11	-2	45	31	34	27	31	19	14	7

Table 11f: Operating hours in companies with 200 to 499 employees

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	85	-26	14	25	25	28	31	39	17	27	10
<b>D</b>	51	-34	-22	31	35	37	43	54	17	14	1
<b>GR</b>	-86	11	8	22	6	6	35	26	14	31	8
<b>E</b>	84	-26	-12	39	13	19	16	34	16	23	6
<b>F</b>	69	24	31	47	26	33	35	21	21	23	7
<b>IRL</b>	67	-18	-26	48	9	10	14	15	22	27	17
<b>I</b>	79	-4	18	55	31	37	38	36	32	28	14
<b>NL</b>	96	22	27	13	13	11	13	27	11	:	:
<b>UK</b>	79	9	18	42	23	30	3	3	9	19	6
<b>EUR</b>	70	-7	6	39	26	31	29	31	18	20	6

Table 11g: Operating hours in companies with 500 to 999 employees

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	101	-24	11	30	25	28	28	45	12	46	0
<b>D</b>	62	-27	-6	25	35	35	42	58	12	27	0
<b>GR</b>	99	19	7	41	16	16	38	32	22	26	0
<b>E</b>	71	-55	-25	31	11	13	19	31	12	20	6
<b>F</b>	77	50	34	52	20	20	43	34	20	20	5
<b>IRL</b>	65	-11	-37	37	3	0	11	26	19	43	11
<b>I</b>	84	6	20	53	21	27	35	59	33	38	46
<b>NL</b>	96	12	27	13	13	11	13	19	11	:	:
<b>UK</b>	85	8	0	42	25	29	3	6	8	16	3
<b>EUR</b>	76	-1	6	38	24	26	29	38	16	24	9

Table 11h: Operating hours in companies with 1 000 or more employees

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative (legal) rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	84	-35	12	18	5	21	9	59	18	18	8
<b>D</b>	58	-13	20	19	27	25	41	70	11	18	1
<b>GR</b>	109	11	0	17	6	0	61	56	17	33	0
<b>E</b>	68	-73	-39	51	3	3	23	39	3	29	5
<b>F</b>	79	27	21	37	9	12	43	32	13	16	11
<b>IRL</b>	100	0	50	50	0	0	0	25	50	25	0
<b>I</b>	84	10	55	24	9	14	74	73	21	21	48
<b>NL</b>	96	22	27	13	13	11	13	11	:	:	:
<b>UK</b>	85	33	16	26	9	13	1	10	17	26	11
<b>EUR</b>	76	3	20	27	14	15	35	46	14	20	12

Source: Special EC labour market survey.



**Table 12****Structure of workforce in retail trade**

Question: What is the present employment structure of your company?

1. How many men and women does your company employ?
2. How many are full-time and how many part-time employed?
3. How many are skilled and how many unskilled?

	Structure of male workforce (% of employees)				Structure of female workforce (% of employees)				Structure of total workforce (% of employees)			
	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled	Full-time	Part-time	Skilled	Unskilled
<b>B</b>	70	30	74	26	45	55	61	39	56	44	72	28
<b>D</b>	95	5	91	9	58	42	86	14	70	30	88	12
<b>E</b>	81	19	64	36	94	6	60	40	91	9	64	36
<b>F</b>	93	7	80	20	51	49	72	28	65	35	75	25
<b>I</b>	96	4	88	12	64	36	85	15	76	24	87	13
<b>NL</b>	50	50	65	35	40	60	63	37	44	56	64	36
<b>P</b>	98	2	56	44	97	4	41	59	98	2	50	50
<b>UK</b>	71	29	70	30	42	58	65	35	51	49	66	34
<b>EUR</b>	84	16	78	22	55	45	72	28	64	36	75	25

Source: Special EC labour market survey.

**Table 13****Prospective trend of employment in retail trade**

Question: How do you expect the number of employees in your company to vary over the next 24 months?

1. Will the number of full-time and part-time employees and the total workforce increase, remain constant or decrease?
2. How will the number of skilled and unskilled employees change?

**Table 13a: Prospective trend of employment in retail trade**

	B	D	E	F	I	NL	P	UK	EUR
<b>Total</b>									
The number of <b>skilled employees</b> will									
increase	62	23	36	27	20	36	17	50	34
remain constant	12	63	35	57	77	59	65	33	51
decrease	1	11	4	10	3	3	4	1	5
don't know	25	3	24	6	0	2	14	16	9
The number of <b>unskilled employees</b> will									
increase	78	21	18	6	17	9	11	40	24
remain constant	10	45	33	50	65	67	72	33	45
decrease	6	3	3	12	18	11	3	5	8
don't know	6	31	46	32	0	13	14	22	24
<b>Full-time</b>									
The number of <b>skilled employees</b> will									
increase	63	13	37	13	20	36	17	52	30
remain constant	13	69	38	74	72	59	66	41	58
decrease	1	15	4	11	8	3	6	3	8
don't know	23	3	21	3	0	2	11	4	5
The number of <b>unskilled employees</b> will									
increase	24	13	17	3	17	3	16	41	20
remain constant	11	53	35	49	65	71	60	35	47
decrease	61	2	3	14	18	13	13	6	10
don't know	4	32	44	35	0	12	11	19	23
<b>Full-time</b>									
The number of <b>skilled employees</b> will									
increase	56	34	6	18	18	26	7	38	28
remain constant	9	56	10	71	79	66	54	43	54
decrease	0	4	0	2	3	2	4	2	2
don't know	35	6	84	9	0	6	35	16	16
The number of <b>unskilled employees</b> will									
increase	79	17	5	11	16	3	9	37	22
remain constant	9	48	10	50	78	75	58	39	47
decrease	1	2	1	6	6	8	5	6	5
don't know	12	33	84	34	0	13	28	18	26

**Table 13b: Prospective trend of employment in retail trade (balances)**

Question: See Table 13a.

	Prospective trend of total employment Number of employees		Prospective trend of full-time employment Number of employees		Prospective trend of part-time employment Number of employees	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
<b>B</b>	61	72	62	– 37	56	78
<b>D</b>	12	18	– 2	11	30	15
<b>E</b>	32	14	33	14	6	4
<b>F</b>	17	– 6	2	– 11	16	5
<b>I</b>	17	– 1	12	– 1	15	12
<b>NL</b>	33	– 2	33	– 10	24	– 5
<b>P</b>	13	8	11	3	3	4
<b>UK</b>	49	35	49	35	36	31
<b>EUR</b>	29	16	22	10	25	17

Source: Special EC labour market survey.

**Table 14****Obstacles to employing more people in retail trade**

Question: Are the following reasons for not employing more people in your company very important, important or not (so) important?

**Table 14a: Obstacles to employing more people in retail trade**

	B	D	E	F	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>									
<b>competition</b>									
very important	6	38	30	25	10	48	46	15	24
important	83	39	36	18	52	13	25	43	37
not (so) important	6	17	34	22	38	37	29	40	30
no reply	5	6	0	35	0	3	0	3	9
<b>wage and salary levels</b>									
very important	3	34	22	3	46	51	24	16	23
important	85	41	41	29	46	21	38	52	43
not (so) important	7	19	37	27	8	27	38	30	24
no reply	5	6	0	41	0	1	0	2	10
<b>non-wage labour costs</b>									
very important	13	52	48	39	80	60	35	15	41
important	84	34	31	24	13	19	24	29	28
not (so) important	2	8	22	7	7	19	41	55	24
no reply	1	6	0	31	0	1	0	1	8
<b>other costs</b>									
very important	1	19	23	4	31	19	3	14	16
important	4	40	30	26	52	39	25	38	36
not (so) important	87	32	47	30	17	39	72	39	36
no reply	8	9	0	40	0	3	0	9	13
<b>Insufficient flexibility in hiring and shedding labour</b>									
very important	60	28	19	26	15	55	23	5	21
important	31	28	27	25	42	17	13	32	30
not (so) important	7	38	54	27	43	27	64	59	43
no reply	2	6	0	22	0	1	0	3	6
<b>Present and expected levels of demand</b>									
very important	9	40	26	22	49	66	26	55	41
important	84	31	30	22	38	12	30	33	31
not (so) important	5	21	44	30	13	20	44	10	20
no reply	2	8	0	27	0	2	0	3	8
<b>Shortage of adequately skilled applicants</b>									
very important	4	28	28	14	6	48	27	34	25
important	33	33	25	36	44	20	21	26	31
not (so) important	61	33	47	27	50	32	52	37	37
no reply	2	6	0	23	0	0	0	3	7

Table 14a (continued)

	B	D	E	F	I	NL	P	UK	EUR
<b>Increase in contracting out</b>									
very important	56	8	14	:	1	8	1	:	10
important	26	11	19	:	39	17	4	:	20
not (so) important	16	74	78	:	60	72	95	:	68
no reply	2	7	0	:	0	3	0	:	3
<b>Rationalization and/or introduction of new technologies</b>									
very important	6	5	15	13	38	35	4	4	13
important	87	21	17	19	55	20	29	22	27
not (so) important	5	66	68	43	7	44	67	70	52
no reply	2	8	0	26	0	1	0	3	8
<b>Insufficient production capacity</b>									
very important	0	12	6	:	33	17	20	:	17
important	3	25	18	:	46	13	7	:	26
not (so) important	95	57	76	:	21	64	73	:	54
no reply	2	6	0	:	0	6	0	:	3
<b>Other reasons</b>									
very important	1	8	9	8	57	:	39	2	13
important	1	3	0	1	1	:	10	0	1
not (so) important	4	0	91	11	42	:	51	2	16
no reply	94	89	0	80	0	:	0	96	69

Table 14b: Obstacles to employing more people in retail trade (characteristic values)

Question: See Table 14a.

	B	D	E	F	I	NL	P	UK	EUR
<b>Insufficient profit margin due to:</b>									
competition	48	58	48	34	36	55	59	37	43
wage and salary levels	46	55	43	18	69	62	43	42	45
non-wage labour costs	55	69	64	51	87	70	47	30	55
other costs	3	39	38	17	57	39	16	33	34
<b>Insufficient flexibility in hiring and shedding labour</b>	76	42	33	39	36	64	30	21	36
Present and expected levels of demand	51	56	41	33	68	72	41	72	57
Shortage of adequately skilled applicants	21	45	40	32	28	58	38	47	40
Increase in contracting out	69	14	14	0	21	17	3	0	10
<b>Rationalization and/or introduction of new technologies</b>	50	16	24	23	66	45	19	15	27
<b>Insufficient production capacity</b>	2	25	15	0	56	10	24	0	15
<b>Other reasons</b>	2	10	9	9	57	0	44	2	13

Source: Special EC labour market survey.

**Table 15****Working hours and opening hours in retail trade**

Question: 1. What are the average opening hours per week in your firm?

2. What are the average contracted weekly working hours for a full-time employee in your firm?

	Average opening hours per week									Average contracted weekly working hours for a full-time employee						
	< 45	46-50	51-55	56-60	61-65	66-75	≥ 76	No reply	Average	< 35	35-38	38-40	40-42	≥ 42	No reply	Average
<b>B</b>	12	7	79	0	0	0	0	2	51	0	87	10	1	0	2	38
<b>D</b>	37	27	16	4	10	0	0	6	48	0	12	83	0	1	4	39
<b>E</b>	57	23	6	6	4	2	1	1	45	:	:	:	:	:	:	43
<b>F</b>	12	17	17	17	17	16	2	3	56	6	11	78	4	1	0	38
<b>I</b>	33	7	57	3	0	0	0	0	49	:	:	:	:	:	:	38
<b>NL</b>	19	19	44	7	1	2	7	1	52	2	12	52	17	10	7	40
<b>P</b>	2	32	32	31	1	0	2	0	51	0	0	0	0	44	0	44
<b>UK</b>	13	15	22	17	8	11	14	1	58	1	24	44	7	5	19	39
<b>EUR</b>	24	31	26	11	8	7	5	2	53	2	19	60	5	4	9	39

Source: Special EC labour market survey.



**Table 16****Holiday closure in retail trade**

Question: 1. Do you regularly close your firm in the course of the year for holidays?  
 2. How many weeks does the holiday closure last?  
 3. Do you have plans for changing the length of the holiday closure of your firm?

	No	Yes	Weeks							Planned changes			
			1	2	3	4	5	6	≥ 7	None	Shorter closure	Longer closure	No reply
<b>B</b>	91	9	3	1	3	1	1	0	0	5	4	0	91
<b>D</b>	85	15	1	5	6	3	0	0	0	92	3	2	3
<b>E</b>	74	25	3	8	3	9	0	0	1	77	7	2	14
<b>F</b>	94	3	0	2	0	1	0	0	0	71	1	0	28
<b>I</b>	71	29	4	13	9	3	0	0	0	78	3	19	0
<b>NL</b>	91	8	2	2	3	1	0	0	0	92	8	0	0
<b>P</b>	83	17	2	38	24	36	0	0	0	100	0	0	0
<b>UK</b>	87	11	1	1	1	0	1	2	5	90	7	0	2
<b>EUR</b>	85	14	1	5	4	3	0	1	2	82	4	3	10

Source: Special EC labour market survey.

**Table 17****Trend in retail trade opening hours**

Question: 1. Have the average weekly opening hours changed in the last five years?  
 2. Do you envisage a change in opening hours in the next 12 to 24 months?

	Trend in opening hours in the last five years						Expected trend in opening hours in the next 12 to 24 months					
	Significant decrease	Slight decrease	No change	Slight increase	Significant increase	No reply	Significant decrease	Slight decrease	No change	Slight increase	Significant increase	No reply
<b>B</b>	5	4	88	2	0	1	0	0	97	3	0	0
<b>D</b>	9	9	72	4	4	2	3	2	84	4	3	4
<b>E</b>	1	11	71	10	6	1	1	8	55	9	9	18
<b>F</b>	1	4	55	32	6	3	1	1	82	12	1	3
<b>I</b>	1	3	21	67	8	0	0	3	20	18	60	0
<b>NL</b>	1	7	77	8	5	2	0	2	85	7	2	4
<b>P</b>	0	2	94	2	2	0	0	3	95	1	1	0
<b>UK</b>	0	5	34	35	24	2	0	1	61	34	3	1
<b>EUR</b>	3	6	52	27	11	2	1	2	67	17	10	3

Source: Special EC labour market survey.

Table 18

## Reasons for not increasing retail trade opening hours

Question: Are the following reasons for not increasing weekly opening hours in your firm very important, important or not (so) important?

lack of demand  
 lack of qualified employees  
 lack of qualified applicants  
 administrative (legal) rules  
 collective agreements  
 costs of reorganization  
 already continuous work  
 other reasons

	B	D	E	F	I	NL	P	UK	EUR
<b>Lack of demand</b>									
very important	3	43	30	12	11	38	46	25	25
important	8	24	19	17	46	19	22	39	29
not (so) important	86	31	28	50	43	29	32	31	38
no reply	3	2	23	21	0	14	0	5	8
<b>Lack of qualified employees</b>									
very important	0	38	8	2	31	24	0	15	15
important	3	22	12	10	42	24	21	18	20
not (so) important	93	37	57	66	56	48	74	63	57
no reply	4	3	23	22	0	4	0	3	8
<b>Lack of qualified applicants</b>									
very important	1	19	8	2	2	43	5	13	11
important	2	16	11	9	41	24	29	18	18
not (so) important	93	53	58	67	57	33	66	65	61
no reply	4	12	24	23	0	0	0	5	10
<b>Administrative (legal) rules</b>									
very important	56	13	13	46	72	77	35	22	35
important	7	20	14	30	19	6	15	16	19
not (so) important	33	54	45	9	9	11	50	58	37
no reply	4	13	27	16	0	6	0	5	10
<b>Collective agreements</b>									
very important	33	22	12	15	13	57	34	1	15
important	62	20	20	42	54	14	28	12	27
not (so) important	4	46	41	23	33	24	38	82	48
no reply	1	12	27	21	0	5	0	5	10
<b>Costs of reorganization</b>									
very important	2	27	18	19	15	29	11	5	16
important	9	26	20	14	78	19	16	16	26
not (so) important	85	38	35	38	7	52	73	70	46
no reply	4	9	27	30	0	0	0	8	12
<b>Already continuous work</b>									
very important	2	:	9	:	7	:	3	11	5
important	2	:	6	:	4	:	2	17	6
not (so) important	91	:	42	:	89	:	95	51	34
no reply	5	:	43	:	0	:	0	21	9
<b>Other reasons</b>									
very important	0	13	6	7	7	:	34	7	8
important	0	1	0	1	1	:	0	0	1
not (so) important	61	0	2	23	92	:	66	8	22
no reply	39	86	0	68	0	:	0	85	58

Source: Special EC labour market survey.

**Table 19**
**Retail trade opening hours (balances)**

Question: See Tables 15, 17 and 18.

	Operating hours			Reasons for not increasing weekly operating hours							
	Weekly operating hours	Trend in the last five years (balance)	Expected trend in the next 12 to 24 months (balance)	Lack of demand	Lack of qualified employees	Lack of qualified applicants	Administrative rules	Collective agreements	Costs of reorganization	Already continuous work	Other
<b>B</b>	51	- 6	2	7	2	2	60	64	7	3	0
<b>D</b>	48	- 8	2	55	49	27	23	32	40	:	14
<b>E</b>	45	5	9	35	14	13	20	22	28	12	6
<b>F</b>	56	20	6	21	7	7	51	36	26	:	7
<b>I</b>	49	39	68	34	24	23	82	40	54	9	7
<b>NL</b>	52	5	5	48	36	55	80	64	39	:	:
<b>P</b>	51	2	0	57	11	20	43	48	19	4	34
<b>UK</b>	58	39	20	45	24	22	30	7	13	20	7
<b>EUR</b>	53	19	17	40	25	21	42	28	29	15	9

Source: Special EC labour market survey.

**Table 20****Structure of the group of respondents (employees)**

Question: At the present time, what is your position?

1. You are still studying.
2. You are unemployed or looking for a job.
3. You are not in paid employment and not looking for a job, or you are retired.
4. You work for a government agency or public administration.
5. You work in industry, commerce, craftsmanship or in services.
6. You are working on your own.

**Table 20a: Structure of the group of respondents (overall)**

( % )

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
<b>B</b>	11	10	34	12	26	7	1
<b>DK</b>	9	5	28	21	28	9	0
<b>D</b>	11	3	30	13	35	7	1
<b>GR</b>	20	3	42	6	11	18	0
<b>E</b>	7	14	46	3	23	7	0
<b>F</b>	7	7	35	20	24	7	0
<b>IRL</b>	3	8	45	11	19	14	0
<b>I</b>	4	5	40	15	21	15	0
<b>NL</b>	7	7	47	9	27	2	1
<b>P</b>	6	3	40	7	26	18	0
<b>UK</b>	5	8	37	13	28	8	0
<b>EUR</b>	7	7	37	13	26	9	0

**Table 20b: Structure of the group of respondents (men)**

( % )

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
<b>B</b>	11	10	23	15	31	9	1
<b>DK</b>	7	4	20	16	39	13	1
<b>D</b>	12	2	14	16	40	10	0
<b>GR</b>	:	:	:	:	:	:	:
<b>E</b>	7	16	26	4	35	11	1
<b>F</b>	7	6	22	23	27	26	0
<b>IRL</b>	3	19	12	13	27	26	0
<b>I</b>	4	5	23	18	28	22	0
<b>NL</b>	9	7	36	10	33	3	1
<b>P</b>	6	3	21	8	37	25	0
<b>UK</b>	5	10	23	13	28	8	0
<b>EUR</b>	7	7	22	15	32	15	0

Table 20c: Structure of the group of respondents (women)

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
							(%)
<b>B</b>	10	10	44	9	21	6	1
<b>DK</b>	8	6	31	27	21	7	0
<b>D</b>	10	5	44	10	25	4	2
<b>GR</b>	:	:	:	:	:	:	:
<b>E</b>	6	12	65	1	12	4	0
<b>F</b>	7	9	47	17	15	5	0
<b>IRL</b>	2	4	70	10	11	3	0
<b>I</b>	4	5	57	12	15	7	0
<b>NL</b>	6	7	55	7	22	2	0
<b>P</b>	6	3	57	6	15	13	0
<b>UK</b>	6	7	49	12	18	7	1
<b>EUR</b>	7	7	51	11	18	6	1

Table 20d: Structure of the group of respondents: younger employees (up to 30 years old)

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
							(%)
<b>B</b>	26	17	7	11	33	6	1
<b>DK</b>	32	8	8	12	38	2	0
<b>D</b>	36	4	9	10	35	4	1
<b>GR</b>	:	:	:	:	:	:	:
<b>E</b>	17	25	14	2	35	6	0
<b>F</b>	23	14	9	22	28	5	:
<b>IRL</b>	14	15	14	14	40	3	0
<b>I</b>	21	16	7	16	30	10	:
<b>NL</b>	24	13	19	9	33	2	1
<b>P</b>	15	6	15	7	39	17	:
<b>UK</b>	13	13	15	18	33	7	0
<b>EUR</b>	23	13	11	14	33	6	0



Table 20e: Structure of the group of respondents: employees aged between 30 and 49

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
							(%)
<b>B</b>	1	12	16	24	35	12	1
<b>DK</b>	3	5	4	35	39	14	0
<b>D</b>	1	4	21	19	45	9	2
<b>GR</b>	:	:	:	:	:	:	:
<b>E</b>	0	11	37	8	31	12	1
<b>F</b>	0	8	15	31	38	8	:
<b>IRL</b>	0	9	37	17	19	18	:
<b>I</b>	0	4	17	28	34	17	:
<b>NL</b>	3	6	42	12	35	2	0
<b>P</b>	0	3	28	14	31	23	:
<b>UK</b>	1	8	15	18	39	16	2
<b>EUR</b>	1	7	21	21	37	12	2

Table 20f: Structure of the group of respondents: older employees (aged 49 upwards)

	Student	Unemployed or looking for a job	Not in paid employment or retired	Public servant	Other	Self-employed	No reply
							(%)
<b>B</b>	4	8	25	15	36	11	0
<b>DK</b>	0	4	33	26	22	15	0
<b>D</b>	1	2	50	10	29	7	1
<b>GR</b>	:	:	:	:	:	:	:
<b>E</b>	0	9	59	2	19	12	0
<b>F</b>	0	3	51	19	17	10	:
<b>IRL</b>	0	5	55	8	11	21	:
<b>I</b>	0	2	28	21	27	22	:
<b>NL</b>	3	1	63	8	21	4	1
<b>P</b>	0	2	36	9	23	30	:
<b>UK</b>	0	7	39	12	31	11	0
<b>EUR</b>	0	4	44	13	25	13	0

Source: Special EC labour market survey.

**Table 21****Contracted working time**

Question: What is your present working time (working hours per week) according to your contract of employment?

How many days/shifts do you regularly work per week?

Does your employment include shift work, night work, Saturday work or Sunday work?

**Table 21a: Contracted working time (total)**

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Contracted weekly working time</b>												
less than 20 hours	7	3	6	2	2	6	3	4	13	3	11	7
20-24 hours	11	5	7	3	2	5	4	5	9	1	7	6
25-29 hours	3	5	2	3	2	7	7	2	4	1	2	3
30-34 hours	7	7	3	4	5	5	3	4	8	4	5	5
35-40 hours	60	71	71	70	63	59	62	76	54	36	51	63
41-45 hours	7	3	8	9	13	9	8	4	5	38	8	9
more than 45 hours	6	6	3	9	12	9	13	5	7	17	14	8
average	35	36	36	38	38	36	37	36	34	40	35	36
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	8	4	6	0	1	2	1	10	6	10	5	5
3 days/shifts	4	3	3	0	1	3	4	6	6	2	4	4
4 days/shifts	6	5	2	1	2	9	2	1	13	1	6	5
5 days/shifts	67	83	75	78	67	71	80	82	68	54	64	71
6 days/shifts	12	5	11	16	27	11	11	1	3	29	13	11
7 days/shifts	3	0	1	5	2	4	2	0	3	4	7	3
less than 5 days/shifts	18	12	11	1	4	14	7	17	25	23	15	13
more than 5 days/shifts	15	4	14	16	29	15	13	1	6	3	20	14
<b>Contracted shiftwork</b>												
never	70	86	76	73	67	78	77	78	71	80	64	73
sometimes	10	5	7	8	9	11	8	11	3	11	8	9
regular	19	8	11	19	24	11	13	11	15	6	25	16
no reply	1	1	5	0	0	0	2	1	11	3	3	3
average	24	11	15	23	29	18	17	17	17	12	29	20
<b>Contracted night work</b>												
never	80	82	81	79	79	81	77	84	72	79	68	78
sometimes	10	9	9	10	14	10	12	14	7	13	12	11
regular	8	8	4	12	7	9	9	2	9	5	19	9
no reply	2	1	6	0	0	0	2	0	12	2	1	2
average	13	13	9	17	14	15	15	9	12	12	25	15
<b>Contracted Saturday work</b>												
never	58	61	55	57	51	47	49	36	52	45	33	45
sometimes	23	23	28	18	23	27	30	32	16	29	34	28
regular	19	16	12	25	28	26	19	32	21	24	32	25
no reply	0	0	5	0	0	0	2	0	11	2	1	2
average	31	28	26	34	39	38	34	48	27	39	49	38
<b>Contracted Sunday work</b>												
never	74	71	80	71	76	75	74	80	65	76	54	72
sometimes	13	17	10	13	15	13	14	17	10	15	25	16
regular	12	12	4	15	8	12	10	3	13	7	19	10
no reply	1	0	6	8	0	0	2	0	12	2	2	2
average	19	21	9	22	16	18	17	12	17	15	32	18

Table 21b: Contracted working time (men)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>Contracted weekly working time</b>												
less than 20 hours	2	0	0	2	1	2	1	3	3	3	10	3
20-24 hours	4	0	0	8	1	2	2	2	1	1	7	3
25-29 hours	2	0	1	6	1	4	3	1	3	1	2	2
30-34 hours	6	1	2	7	4	2	2	2	5	4	5	3
35-40 hours	70	85	83	66	68	69	81	81	71	36	53	70
41-45 hours	8	5	10	7	13	12	5	5	7	38	9	10
more than 45 hours	8	8	4	4	12	9	6	6	9	17	14	9
average	37	39	39	36	39	38	38	38	37	40	36	38
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	5	4	4	0	1	1	1	10	2	10	2	4
3 days/shifts	2	1	0	1	1	2	1	7	2	1	1	2
4 days/shifts	5	1	0	1	1	5	2	1	7	1	5	3
5 days/shifts	72	87	85	83	67	77	79	82	80	53	65	76
6 days/shifts	12	6	10	13	29	12	14	0	4	31	17	12
7 days/shifts	4	1	1	2	1	3	3	0	5	4	10	4
less than 5 days/shifts	12	6	4	2	3	8	4	18	11	12	8	8
more than 5 days/shifts	16	7	11	15	30	15	17	0	9	35	27	16
<b>Contracted shiftwork</b>												
never	64	85	76	70	65	78	74	76	75	77	58	71
sometimes	12	5	7	10	9	11	9	12	3	14	12	10
regular	22	8	14	20	26	11	14	12	14	5	30	18
no reply	2	1	3	0	0	0	3	0	9	4	0	1
average	28	11	18	25	31	17	19	18	16	12	36	23
<b>Contracted night work</b>												
never	75	81	79	75	79	78	74	79	73	76	60	74
sometimes	14	12	12	12	14	11	13	18	6	16	17	14
regular	10	6	6	13	7	11	10	3	10	5	23	11
no reply	1	1	3	0	0	0	0	0	1	3	0	1
average	17	12	12	19	14	17	17	12	13	13	32	18
<b>Contracted Saturday work</b>												
never	54	59	54	51	49	50	45	34	54	42	21	42
sometimes	28	30	34	22	30	25	31	38	16	33	42	33
regular	18	10	10	27	21	25	22	28	19	23	37	24
no reply	9	1	2	0	0	0	2	0	11	2	0	1
average	32	25	27	38	36	38	38	44	27	40	58	40
<b>Contracted Sunday work</b>												
never	72	70	83	65	75	76	72	76	65	73	44	69
sometimes	15	23	10	17	17	12	13	21	11	17	31	18
regular	12	6	4	18	8	12	12	3	13	8	23	11
no reply	1	1	3	0	0	0	3	0	11	2	2	2
average	20	18	9	27	17	18	19	14	19	17	39	20

Table 21c: Contracted working time (women)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>Contracted weekly working time</b>												
less than 20 hours	14	6	14	2	4	13	6	7	24	4	26	14
20-24 hours	19	11	19	8	8	9	10	10	16	1	19	14
25-29 hours	5	10	5	6	4	10	15	3	5	3	6	6
30-34 hours	8	13	4	7	8	9	6	7	11	6	10	8
35-40 hours	46	55	53	66	52	45	56	66	36	42	33	48
41-45 hours	5	1	4	7	10	4	6	3	3	33	4	5
more than 45 hours	3	3	1	4	12	9	1	4	4	11	2	5
average	31	33	31	36	36	33	33	35	29	39	28	32
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	11	3	9	0	0	3	2	10	11	11	5	6
3 days/shifts	7	4	8	1	1	3	8	6	11	4	4	5
4 days/shifts	8	10	5	1	4	16	1	0	19	0	6	7
5 days/shifts	61	77	64	82	68	63	82	82	56	55	64	67
6 days/shifts	12	5	13	13	23	10	6	2	3	26	14	12
7 days/shifts	1	0	1	3	4	5	1	0	1	4	7	3
less than 5 days/shifts	26	17	22	2	5	22	11	16	31	15	15	18
more than 5 days/shifts	13	5	14	16	27	15	7	2	4	30	21	15
<b>Contracted shiftwork</b>												
never	78	86	76	78	72	80	82	83	67	87	76	78
sometimes	7	5	7	4	9	10	6	8	3	5	4	7
regular	15	8	7	18	19	10	11	9	17	7	17	12
no reply	0	1	10	0	0	0	1	0	13	1	3	3
average	19	12	11	20	24	15	14	13	19	10	19	13
<b>Contracted night work</b>												
never	87	85	83	86	81	88	83	92	72	86	81	84
sometimes	5	5	4	5	12	6	10	7	8	8	4	6
regular	6	10	1	9	7	6	6	1	7	5	12	6
no reply	2	0	12	0	0	0	1	0	13	1	3	4
average	9	13	3	12	12	9	11	5	11	9	14	9
<b>Contracted Saturday work</b>												
never	63	63	56	68	55	46	56	39	49	51	51	51
sometimes	16	14	20	10	23	27	30	22	16	22	24	22
regular	21	23	14	22	22	27	13	39	24	26	23	24
no reply	0	0	10	0	0	0	1	0	11	1	2	3
average	29	30	24	27	34	41	28	40	37	37	35	34
<b>Contracted Sunday work</b>												
never	59	71	76	83	80	76	77	87	65	82	71	76
sometimes	8	10	9	6	11	12	15	10	9	10	13	11
regular	8	19	4	11	9	12	7	3	13	6	12	8
no reply	25	0	11	0	0	0	1	0	12	2	4	5
average	12	24	9	14	15	18	15	8	18	11	19	14

Table 21d: Contracted working time: younger employees (up to 30 years old)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>Contracted weekly working time</b>												
less than 20 hours	5	1	2	1	3	8	1	4	12	4	6	5
20-24 hours	10	2	4	1	3	8	4	6	8	1	2	5
25-29 hours	4	2	09	3	1	8	6	3	3	2	2	3
30-34 hours	6	4	3	3	6	8	2	3	12	3	2	4
35-40 hours	64	84	79	70	62	54	67	73	57	34	62	66
41-45 hours	8	3	8	11	12	9	9	5	6	42	12	10
more than 45 hours	3	3	3	10	13	6	10	6	1	15	14	8
average	35	37	37	38	38	35	37	36	33	40	38	37
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	7	5	4	0	1	4	1	:	7	11	2	4
3 days/shifts	4	1	3	1	1	6	3	:	7	2	2	3
4 days/shifts	6	4	1	1	2	7	2	:	14	1	5	4
5 days/shifts	79	83	80	74	67	70	76	:	65	51	69	72
6 days/shifts	11	6	11	21	28	10	14	:	5	30	13	13
7 days/shifts	2	1	1	2	1	4	3	:	3	4	9	4
less than 5 days/shifts	17	10	8	2	4	17	6	:	28	14	9	11
more than 5 days/shifts	13	7	12	23	29	14	17	:	8	34	22	17
<b>Contracted shiftwork</b>												
never	68	82	75	76	65	76	77	83	65	86	60	72
sometimes	10	5	6	6	13	12	8	9	2	7	10	9
regular	21	12	12	18	23	12	13	8	21	5	27	16
no reply	i	2	7	0	:	:	2	:	13	2	3	4
average	26	15	15	21	30	18	17	13	22	9	32	21
<b>Contracted night work</b>												
never	71	78	78	81	79	81	77	89	63	85	65	77
sometimes	10	11	9	4	15	10	14	9	8	9	11	10
regular	9	11	7	14	5	10	8	2	17	4	20	10
no reply	9	1	7	0	:	:	1	:	12	2	4	4
average	14	17	12	16	13	15	15	7	21	9	26	15
<b>Contracted Saturday work</b>												
never	42	56	52	52	46	47	49	36	56	43	27	42
sometimes	17	20	31	16	29	25	32	31	14	30	33	29
regular	15	20	16	31	24	25	18	32	22	27	36	26
no reply	26	5	0	0	:	3	1	:	8	1	4	4
average	24	30	32	39	39	38	34	48	29	42	53	41
<b>Contracted Sunday work</b>												
never	76	70	78	79	76	75	79	82	63	78	49	71
sometimes	13	12	10	5	16	13	11	15	7	15	26	15
regular	12	18	5	16	7	12	9	3	18	5	22	11
no reply	0	0	7	0	:	:	1	:	13	2	3	4
average	19	24	10	19	15	19	15	11	22	13	35	19

Table 21e: Contracted working time: employees aged between 30 and 49

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>Contracted weekly working time</b>												
less than 20 hours	8	2	6	2	2	6	4	5	14	1	12	7
20-24 hours	11	5	9	4	2	3	5	5	11	0	8	6
25-29 hours	3	7	3	3	5	6	6	2	3	0	4	4
30-34 hours	10	10	3	6	6	6	3	6	4	6	5	5
35-40 hours	56	65	68	70	64	58	61	74	56	41	46	60
41-45 hours	5	3	8	8	17	12	7	3	4	35	8	9
more than 45 hours	7	7	3	7	5	9	13	5	7	17	18	9
average	34	36	35	37	38	37	37	36	33	41	36	36
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	8	3	8	0	0	1	2	:	4	7	5	4
3 days/shifts	3	4	3	1	3	2	5	:	4	1	5	3
4 days/shifts	8	5	3	0	5	11	2	:	8	0	9	7
5 days/shifts	68	84	74	80	71	69	82	:	77	58	65	70
6 days/shifts	9	4	11	16	22	14	8	:	2	30	10	12
7 days/shifts	4	0	1	3	0	2	1	:	4	4	5	3
less than 5 days/shifts	19	12	14	1	8	14	9	:	16	8	19	14
more than 5 days/shifts	13	4	12	19	22	16	9	:	6	34	15	15
<b>Contracted shiftwork</b>												
never	73	86	75	71	75	79	75	78	74	79	67	75
sometimes	7	6	9	9	5	11	8	8	5	13	7	8
regular	17	8	12	20	20	10	14	14	9	7	25	15
no reply	3	0	5	0	:	:	2	:	11	2	1	3
average	21	11	17	25	23	16	18	18	12	14	29	20
<b>Contracted night work</b>												
never	82	84	79	78	82	82	77	84	77	78	62	77
sometimes	10	7	11	10	12	9	11	12	6	16	15	12
regular	8	8	3	11	6	9	10	4	4	5	21	9
no reply	0	1	7	0	:	:	2	:	13	1	2	3
average	13	12	9	16	12	14	16	10	7	13	29	15
<b>Contracted Saturday work</b>												
never	64	64	52	58	65	47	48	35	54	44	31	46
sometimes	22	23	31	18	22	27	32	32	22	32	38	30
regular	13	13	12	24	14	26	20	33	11	24	30	22
no reply	1	0	5	0	:	:	0	:	13	1	1	3
average	24	25	28	33	25	40	36	49	22	40	49	38
<b>Contracted Sunday work</b>												
never	74	73	79	69	83	76	71	79	65	76	63	72
sometimes	15	17	10	16	12	12	16	16	14	13	29	16
regular	11	10	5	15	5	12	11	5	7	10	16	9
no reply	0	0	6	0	:	:	2	:	15	1	2	4
average	19	19	10	23	11	18	19	13	14	17	31	18



Table 21f: Contracted working time: older employees (aged 49 upwards)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)												
<b>Contracted weekly working time</b>												
less than 20 hours	4	7	9	1	0	7	4	4	11	2	14	8
20-24 hours	11	10	8	2	0	2	5	5	2	0	14	7
25-29 hours	1	3	3	5	4	7	14	1	7	0	3	4
30-34 hours	5	4	2	4	4	2	4	3	2	7	9	4
35-40 hours	62	66	70	69	68	63	45	77	49	42	41	61
41-45 hours	6	3	5	7	14	9	9	3	5	34	5	7
more than 45 hours	11	6	4	11	11	11	18	7	23	16	14	10
average	36	35	35	38	39	37	36	37	36	41	33	36
<b>Number of working days/shifts per week</b>												
less than 3 days/shifts	7	4	6	0	0	0	0	:	5	7	8	4
3 days/shifts	5	2	4	0	0	2	2	:	5	1	6	4
4 days/shifts	4	7	3	2	0	10	2	:	18	0	6	6
5 days/shifts	63	78	73	80	75	74	80	:	63	65	57	68
6 days/shifts	17	7	14	9	21	6	12	:	5	21	16	13
7 days/shifts	5	1	1	8	4	8	4	:	5	6	7	5
less than 5 days/shifts	16	13	13	2	0	12	4	:	28	8	20	14
more than 5 days/shifts	22	8	15	17	25	14	16	:	10	27	23	18
<b>Contracted shiftwork</b>												
never	67	89	82	73	64	82	84	73	80	67	69	75
sometimes	10	4	6	8	4	9	7	15	0	13	8	8
regular	20	5	10	19	32	9	7	12	9	11	22	15
no reply	2	1	3	0	:	:	2	:	11	9	1	3
average	25	7	13	23	34	14	11	20	9	18	26	19
<b>Contracted night work</b>												
never	73	86	90	76	75	85	79	81	80	71	74	81
sometimes	14	10	5	12	4	8	11	18	2	17	9	9
regular	9	3	2	12	21	7	9	1	2	4	16	8
no reply	3	1	3	0	:	:	2	:	16	8	1	3
average	16	8	5	18	23	11	15	10	3	13	21	13
<b>Contracted Saturday work</b>												
never	48	61	66	59	50	51	59	33	45	54	40	49
sometimes	27	26	23	20	29	25	20	33	18	25	33	28
regular	24	11	9	21	21	24	20	34	25	16	26	22
no reply	2	1	3	0	:	:	2	:	11	5	1	2
average	38	24	21	31	36	37	30	51	34	29	43	36
<b>Contracted Sunday work</b>												
never	72	67	87	68	64	77	61	77	63	72	55	72
sometimes	13	26	8	15	21	12	14	21	11	15	17	15
regular	16	6	2	16	14	11	11	2	14	7	15	9
no reply	0	1	4	0	:	:	13	:	13	6	12	4
average	23	19	6	24	25	17	18	13	20	15	24	17

Source: Special EC labour market survey.

**Table 22****Preferred working time and working hours**

Question: 1. Assuming that your present hourly rate remained unchanged, would you like to work less, as long or longer?  
 2. How many hours per week would you prefer to work?  
 3. If the choice were offered in the next wage round between an increase in pay for the same hours of work and shorter working time for the same pay you get now, which would you prefer?  
 4. Would you be willing to work different hours if you were offered higher wages or additional leisure time?

**Table 22a: Preferred working time and working hours (overall)**

	(%)											
	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>1. Preferred working time</b>												
less	28	29	38	28	42	39	18	39	31	49	33	37
as long	43	61	55	57	44	52	65	50	56	46	50	51
longer	7	9	4	15	12	9	11	8	8	2	12	9
no reply	23	1	3	0	2	0	6	4	5	3	5	4
balance	21	20	34	13	30	30	7	31	23	47	21	28
<b>2. Preferred working time in hours</b>												
less than 20 hours	7	3	7	2	2	5	4	5	11	3	13	7
20-24 hours	13	7	9	2	3	8	5	5	12	4	9	8
25-29 hours	7	7	6	5	4	8	4	3	2	2	6	5
30-34 hours	16	19	24	16	12	14	8	14	12	19	16	17
35-40 hours	47	55	50	55	60	53	55	64	46	48	37	51
41-45 hours	8	6	3	11	12	6	9	3	8	21	10	7
more than 45 hours	3	3	2	9	8	6	15	6	9	3	10	6
average	34	35	34	37	38	35	37	36	34	37	34	35
<b>3. Choice of one of the two options</b>												
increase in pay	50	39	42	82	53	53	79	66	55	64	64	56
shorter working time	29	55	44	17	26	42	16	31	29	15	26	34
undecided	15	5	10	1	21	3	3	2	11	13	6	8
no reply	6	1	3	0	0	2	2	1	5	8	3	2
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	51	63	45	61	72	68	67	57	60	56	69	61
no	34	29	51	39	20	25	25	43	35	31	31	35
no reply	15	8	4	0	8	7	8	0	5	13	0	4
<b>night shift</b>												
yes	19	24	10	4	28	30	32	10	10	3	39	22
no	67	70	85	96	64	62	62	90	90	84	61	74
no reply	14	7	5	0	8	8	5	0	0	13	0	4
<b>Saturday work</b>												
yes	42	41	33	8	40	56	58	51	9	2	56	44
no	44	52	62	91	52	40	35	49	91	85	44	52
no reply	14	7	5	1	8	4	7	0	0	13	0	4
<b>Sunday work</b>												
yes	24	31	10	2	19	30	30	12	1	0	39	21
no	62	63	85	98	73	66	63	88	99	87	61	75
no reply	14	7	5	0	8	4	7	0	0	13	0	4
<b>changing working time</b>												
yes	52	34	34	24	47	74	61	66	17	26	55	52
no	34	58	61	76	42	21	31	34	88	61	45	44
no reply	14	8	5	0	11	5	8	0	0	13	0	4

Table 22b: Preferred working time and working hours (men)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>1. Preferred working time</b>												
less	29	26	41	26	41	39	20	40	32	53	37	38
as long	43	61	54	57	44	53	62	52	56	42	46	50
longer	7	12	4	17	12	8	10	8	7	2	12	8
no reply	21	1	1	0	3	0	8	:	5	3	5	3
balance	22	14	37	11	29	31	10	32	25	51	25	30
<b>2. Preferred working time in hours</b>												
less than 20 hours	2	0	1	1	2	2	1	4	2	3	6	3
20-24 hours	5	1	1	1	2	4	2	2	5	3	2	2
25-29 hours	6	2	4	3	1	7	2	2	1	2	1	3
30-34 hours	18	13	23	12	9	13	10	10	11	20	17	15
35-40 hours	54	69	62	60	61	57	57	71	56	49	46	58
41-45 hours	10	9	6	11	15	8	11	4	11	20	14	9
more than 45 hours	5	6	3	12	10	9	17	7	15	3	14	9
average	36	38	36	38	38	37	39	37	38	37	37	37
<b>3. Choice of one of the two options</b>												
increase in pay	54	45	45	84	56	56	79	69	57	67	67	59
shorter working time	27	49	44	14	26	40	14	27	31	16	25	32
undecided	13	5	11	2	28	4	7	2	8	12	8	9
no reply	6	1	0	0	0	0	0	2	5	5	0	1
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	55	62	50	59	75	66	68	62	:	57	75	64
no	31	29	47	40	19	27	21	38	:	32	25	32
no reply	14	9	3	1	6	7	11	0	:	11	0	4
<b>night shift</b>												
yes	26	24	13	3	30	35	35	13	8	4	44	25
no	60	69	83	96	63	57	57	87	92	86	56	71
no reply	14	7	4	1	7	8	8	0	0	10	0	4
<b>Saturday work</b>												
yes	43	40	37	10	41	55	60	54	9	1	62	47
no	43	52	60	89	53	41	31	46	91	89	38	51
no reply	14	8	3	1	6	4	9	0	0	10	0	3
<b>Sunday work</b>												
yes	26	28	12	2	19	29	30	15	1	2	47	24
no	60	65	84	97	69	68	62	85	99	87	53	73
no reply	14	7	4	1	12	3	8	0	0	11	0	3
<b>changing working time</b>												
yes	52	32	37	24	47	74	59	65	19	25	61	53
no	33	61	60	76	43	22	31	35	81	65	39	43
no reply	15	7	3	0	10	4	10	0	0	10	0	3

Table 22c: Preferred working time and working hours (women)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>1. Preferred working time</b>												
less	26	33	35	32	44	39	16	41	30	42	27	35
as long	42	61	55	56	44	50	70	52	56	52	56	53
longer	7	5	4	12	10	11	13	7	9	2	12	8
no reply	25	1	6	0	2	0	1	:	5	3	5	4
balance	19	28	31	20	34	28	3	34	21	39	15	27
<b>2. Preferred working time in hours</b>												
less than 20 hours	13	6	15	3	1	9	9	7	20	3	28	13
20-24 hours	22	13	21	4	4	13	9	11	19	5	20	15
25-29 hours	8	13	7	10	10	11	9	5	3	4	11	9
30-34 hours	13	25	24	23	18	15	11	20	14	17	13	18
35-40 hours	39	40	31	48	57	48	55	52	36	46	23	40
41-45 hours	4	2	1	9	5	2	6	1	4	22	3	3
more than 45 hours	1	1	1	3	5	2	1	4	4	3	2	2
average	30	32	29	35	36	32	33	33	30	36	27	31
<b>3. Choice of one of the two options</b>												
increase in pay	45	31	39	77	47	48	79	60	53	59	60	51
shorter working time	43	62	45	22	25	46	20	38	28	13	29	39
undecided	18	5	16	1	28	6	1	2	14	16	11	11
no reply	5	2	0	0	0	0	0	0	6	12	0	1
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	47	64	38	64	67	70	64	47	:	54	60	55
no	38	29	57	36	21	23	33	53	:	28	40	40
no reply	15	7	5	0	12	7	3	0	:	18	0	5
<b>night shift</b>												
yes	9	24	5	5	23	23	37	4	6	0	31	16
no	76	70	88	95	67	70	71	96	94	82	69	79
no reply	15	6	7	0	10	7	2	0	0	18	0	5
<b>Saturday work</b>												
yes	41	42	26	5	37	58	55	45	9	2	47	40
no	45	51	67	94	50	38	42	55	91	80	53	56
no reply	14	7	1	1	13	4	3	0	0	18	0	3
<b>Sunday work</b>												
yes	20	34	8	1	19	31	31	7	1	0	27	18
no	65	61	85	98	69	65	66	93	99	82	73	78
no reply	15	5	7	1	12	4	3	0	0	18	0	4
<b>changing working time</b>												
yes	51	35	30	23	48	74	65	67	8	25	45	48
no	36	56	61	77	39	21	30	33	92	57	55	46
no reply	13	9	9	0	13	5	5	0	0	18	0	5

Table 22d: Preferred working time and working hours: younger employees (up to 30 years old)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)												
<b>1. Preferred working time</b>												
less	25	30	44	31	43	36	16	29	35	51	27	35
as long	39	58	49	54	43	44	70	61	48	46	49	49
longer	7	11	4	15	12	20	11	10	15	2	20	13
no reply	28	1	3	0	2	0	4	:	3	1	5	3
balance	18	19	40	16	31	16	5	19	20	49	7	22
<b>2. Preferred working time in hours</b>												
less than 20 hours	5	1	4	1	2	4	1	6	10	3	6	5
20-24 hours	10	2	7	1	3	10	3	5	10	5	6	7
25-29 hours	6	5	4	4	4	9	4	4	2	2	4	5
30-34 hours	11	15	23	12	12	15	7	12	15	20	11	15
35-40 hours	60	67	56	64	56	49	67	61	48	45	44	53
41-45 hours	6	7	4	10	13	6	10	4	7	22	17	9
more than 45 hours	3	2	2	7	9	8	8	8	8	4	12	7
average	35	36	35	37	37	35	38	36	34	37	36	36
<b>3. Choice of one of the two options</b>												
increase in pay	53	42	41	83	51	59	85	:	64	67	70	57
shorter working time	26	55	45	16	27	38	10	:	25	12	21	32
undecided	15	1	14	1	21	2	3	:	9	11	5	9
no reply	6	2	0	0	0	2	2	:	3	9	5	2
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	58	72	47	64	71	79	75	63	:	53	76	66
no	30	18	48	35	20	16	16	37	:	33	25	30
no reply	11	9	5	1	9	6	9	:	:	14	0	5
<b>night shift</b>												
yes	24	33	13	2	27	39	37	9	10	3	44	25
no	77	58	81	97	64	53	58	91	90	83	56	70
no reply	0	9	6	1	9	8	5	:	0	14	0	5
<b>Saturday work</b>												
yes	48	55	36	7	40	50	60	51	13	3	61	45
no	42	36	58	92	52	50	32	49	87	83	39	52
no reply	10	10	6	1	9	0	8	:	0	14	0	4
<b>Sunday work</b>												
yes	26	38	9	1	17	27	26	9	1	0	43	21
no	63	54	84	98	75	70	66	91	99	86	57	75
no reply	11	8	7	1	8	4	8	:	0	14	0	5
<b>changing working time</b>												
yes	55	41	34	23	49	79	70	68	14	27	57	54
no	34	49	61	76	42	16	20	32	86	59	43	42
no reply	11	9	5	1	10	5	9	:	0	14	0	5

Table 22e: Preferred working time and working hours: employees aged between 30 and 49

	(%)											
	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>1. Preferred working time</b>												
less	27	33	37	28	39	43	19	46	26	53	37	39
as long	47	57	57	56	51	51	61	48	61	42	49	52
longer	8	8	4	16	9	6	12	6	5	3	6	6
no reply	19	1	3	0	2	0	8	:	7	2	7	4
balance	19	25	33	12	30	37	7	40	21	50	31	33
<b>2. Preferred working time in hours</b>												
less than 20 hours	8	3	7	2	1	5	7	5	8	1	19	8
20-24 hours	15	8	10	3	2	6	4	7	14	2	7	7
25-29 hours	10	8	7	6	4	7	5	4	1	2	5	6
30-34 hours	18	23	24	18	14	14	12	16	8	14	22	18
35-40 hours	38	51	47	51	57	60	55	61	50	57	30	49
41-45 hours	9	4	3	11	14	4	7	2	11	20	5	6
more than 45 hours	3	4	2	9	9	4	11	5	9	3	12	6
average	33	35	33	37	38	35	36	35	35	37	32	34
<b>3. Choice of one of the two options</b>												
increase in pay	47	35	44	78	60	50	78	:	55	61	63	54
shorter working time	32	60	44	20	26	46	18	:	33	17	28	36
undecided	15	5	12	2	14	2	2	:	9	18	5	8
no reply	6	0	0	0	0	2	2	:	3	4	4	2
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	44	62	46	57	73	64	63	52	:	57	70	59
no	39	30	51	42	19	29	28	49	:	31	30	37
no reply	17	8	3	1	8	7	9	:	:	12	0	5
<b>night shift</b>												
yes	15	22	10	6	27	27	32	9	3	2	41	21
no	70	71	86	93	66	68	62	91	97	86	59	75
no reply	16	7	4	1	7	5	6	:	0	12	0	4
<b>Saturday work</b>												
yes	36	36	34	7	32	56	55	54	7	2	56	43
no	47	57	63	92	57	38	38	46	93	86	44	53
no reply	18	7	4	1	11	5	7	:	0	12	0	5
<b>Sunday work</b>												
yes	19	28	11	2	16	31	35	11	0	0	40	21
no	64	66	85	97	75	66	59	89	100	88	60	75
no reply	16	7	4	1	10	3	6	:	0	12	0	4
<b>Changing working time</b>												
yes	48	32	365	27	42	76	59	63	19	28	57	52
no	36	59	59	72	47	20	35	37	81	60	43	44
no reply	16	8	5	1	12	4	7	:	0	12	0	5



Table 22f: Preferred working time and working hours: older employees (aged 49 upwards)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>1. Preferred working time</b>												
less	30	20	36	25	42	34	23	46	30	41	39	37
as long	47	70	57	60	40	64	64	44	64	51	51	53
longer	6	9	4	15	14	2	11	10	2	3	5	5
no reply	18	1	3	0	4	0	2	:	5	6	4	4
balance	24	11	32	10	28	32	12	36	28	38	34	32
<b>2. Preferred working time in hours</b>												
less than 20 hours	5	6	9	1	4	5	2	6	12	2	24	10
20-24 hours	12	10	11	3	1	9	9	5	3	0	15	9
25-29 hours	4	7	5	5	2	6	7	1	3	4	7	5
30-34 hours	15	15	23	17	9	11	13	15	9	24	18	16
35-40 hours	51	50	49	52	60	58	35	65	41	44	31	50
41-45 hours	7	8	2	11	17	3	15	2	5	24	2	5
more than 45 hours	5	3	1	11	6	7	19	6	27	1	4	5
average	34	34	32	37	37	34	37	35	37	37	29	33
<b>3. Choice of one of the two options</b>												
increase in pay	53	43	41	87	52	58	70	:	48	59	58	53
shorter working time	28	45	44	12	22	35	25	:	30	17	34	34
undecided	14	10	15	1	26	4	3	:	13	15	4	10
no reply	6	2	0	0	0	4	2	:	9	9	4	3
<b>4. In favour of/against a change in working hours linked to:</b>												
<b>early or afternoon shift</b>												
yes	50	50	41	65	77	57	59	57	:	67	60	56
no	34	42	58	34	18	35	38	43	:	19	40	40
no reply	16	8	1	1	5	8	4	0	:	14	0	4
<b>night shift</b>												
yes	15	13	7	1	32	24	21	11	7	0	28	18
no	69	83	90	98	63	69	77	89	93	86	72	79
no reply	16	4	3	1	5	7	2	:	0	14	0	4
<b>Saturday work</b>												
yes	40	33	27	14	46	50	64	50	7	1	48	40
no	42	63	70	85	49	47	34	50	93	85	52	57
no reply	18	3	3	1	6	3	2	:	0	14	0	3
<b>Sunday work</b>												
yes	20	28	9	2	33	29	27	14	0	0	34	21
no	62	69	88	97	61	66	71	86	100	86	66	76
no reply	18	3	3	1	6	5	2	:	0	14	0	4
<b>changing working time</b>												
yes	53	24	32	16	49	66	46	73	12	18	50	49
no	30	69	65	83	41	33	46	27	88	68	50	48
no reply	17	6	4	1	10	1	7	:	0	14	0	4

Source: Special EC labour market survey.

**Table 23****Present and preferred jobs**

- Question: 1. Is your present job permanent or temporary?  
 2. If your job is temporary, what is the expected duration in months?  
 3. If you are in full-time employment, would you rather have part-time employment with corresponding pay?  
 If you are in part-time employment, would you rather have full-time employment?  
 If you are unemployed, would you rather have full-time or part-time employment?

**Table 23a: Present and preferred jobs (overall)**

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>1. Present job</b>												
permanent	92	93	90	89	69	93	86	88	87	81	91	88
temporary	7	7	74	10	30	7	12	11	7	13	6	9
no reply	1	0	6	1	1	0	3	1	7	6	3	3
<b>2. Expected duration of temporary jobs</b>												
less than 1 month	0	9	6	7	11	0	5	:	32	0	0	6
1-3 months	0	10	7	28	19	13	9	:	16	15	33	18
3-6 months	0	10	7	22	32	26	14	:	16	19	11	21
0-6 months	0	29	20	57	62	39	28	:	64	34	44	45
6-9 months	0	10	9	28	6	6	5	:	16	3	4	7
9-12 months	26	11	8	9	11	32	4	:	11	4	12	14
6-12 months	26	21	17	37	17	38	9	:	27	7	16	21
1 year or less	26	50	37	94	79	77	37	25	90	41	60	59
more than 1 year	45	44	48	6	6	10	5	75	10	8	9	26
no reply	28	7	14	0	16	13	58	0	0	50	31	16
<b>Nature of jobs (overall)</b>												
full-time	71	83	82	97	85	92	87	94	69	94	78	85
part-time	22	17	18	2	15	8	7	6	27	5	21	15
no reply	7	0	0	1	0	0	6	0	5	1	1	1
<b>3. Preferred job</b>												
<b>Full-time workers</b>												
full-time	77	84	83	86	73	79	90	68	86	70	75	77
part-time	13	13	17	14	24	17	7	32	12	24	25	21
no reply	10	4	0	0	4	4	3	:	2	7	:	3
<b>Part-time workers</b>												
full-time	19	6	8	78	63	57	:	49	18	40	6	30
part-time	47	89	92	22	35	32	:	51	78	29	94	66
no reply	34	5	0	0	2	11	:	0	4	31	:	5
<b>Unemployed</b>												
full-time	51	52	22	87	72	28	87	:	39	76	71	52
part-time	30	27	19	10	24	70	11	:	54	23	20	34
no reply	19	21	59	2	4	2	1	:	8	1	9	14

Table 23b: Present and preferred jobs (men)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>1. Present job</b>												
permanent	94	94	93	99	68	94	89	92	87	81	94	91
temporary	5	6	5	0	32	6	7	8	5	13	6	8
no reply	1	0	2	1	0	0	4	0	7	6	0	1
<b>2. Expected duration of temporary jobs</b>												
less than 1 month	0	8	0	6	13	0	0	:	0	:	0	5
1-3 months	0	8	4	26	20	23	22	:	13	:	22	18
3-6 months	0	9	36	26	33	39	17	:	39	:	13	25
0-6 months	0	25	7	58	66	62	39	:	52	:	35	48
6-9 months	35	6	12	28	8	15	3	:	12	:	9	11
9-12 months	35	5	12	11	10	0	3	:	13	:	14	10
6-12 months	70	11	24	39	18	15	6	:	23	:	23	21
1 year or less	70	36	31	97	84	77	45	6	75	:	58	57
more than 1 year	30	58	50	3	6	10	5	94	25	:	15	32
no reply	0	6	19	0	10	13	50	0	0	:	27	12
<b>Nature of jobs (overall)</b>												
full-time	82	99	97	98	89	:	90	97	89	90	86	92
part-time	13	1	3	2	11	:	6	3	6	3	14	7
no reply	5	0	0	0	0	:	4	0	5	7	0	1
<b>3. Preferred job</b>												
<b>Full-time workers</b>												
full-time	79	90	88	85	76	89	90	77	90	69	79	83
part-time	11	6	12	15	22	7	6	23	7	24	21	16
no reply	10	4	0	0	2	3	4	:	3	7	:	2
<b>Part-time workers</b>												
full-time	14	40	22	85	65	83	80	92	44	48	97	67
part-time	24	60	78	15	30	0	20	8	56	27	3	27
no reply	62	0	0	0	4	17	:	:	0	25	:	10
<b>Unemployed</b>												
full-time	70	70	38	95	81	12	90	:	26	85	85	56
part-time	8	0	6	5	17	85	9	:	74	13	8	31
no reply	22	30	56	0	2	3	1	:	0	2	7	13

Table 23c: Present and preferred jobs (women)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
(%)												
<b>1. Present job</b>												
permanent	89	91	86	91	68	91	79	92	86	80	87	87
temporary	11	8	4	8	32	9	20	8	8	15	7	9
no reply	1	1	10	1	0	0	1	0	6	5	6	4
<b>2. Expected duration of temporary jobs</b>												
less than 1 month	0	10	14	14	4	0	0	:	55	:	0	6
1-3 months	0	10	14	32	16	4	8	:	18	:	41	18
3-6 months	0	11	15	11	36	14	12	:	9	:	9	20
0-6 months	0	31	43	57	56	18	21	:	82	:	50	45
6-9 months	0	15	6	25	0	14	6	:	18	:	0	5
9-12 months	21	15	6	3	12	52	6	:	0	:	10	17
6-12 months	21	30	12	28	12	66	12	:	18	:	10	23
1 year or less	21	61	49	85	68	84	32	41	100	:	60	62
more than 1 year	51	33	46	14	0	4	4	59	0	:	5	20
no reply	27	6	5	1	32	12	64	0	0	:	35	19
<b>Nature of jobs (overall)</b>												
full-time	56	64	58	96	73	89	89	47	85	41	41	62
part-time	35	36	42	3	26	10	11	48	7	59	59	37
no reply	9	0	0	1	1	1	0	5	8	0	0	1
<b>3. Preferred job</b>												
<b>Full-time workers</b>												
full-time	71	74	67	89	63	62	89	51	79	71	63	64
part-time	18	23	33	11	33	35	10	49	21	22	37	35
no reply	11	3	0	0	4	3	1	:	0	7	:	2
<b>Part-time workers</b>												
full-time	22	7	6	70	60	57	45	30	15	35	7	26
part-time	59	91	94	30	40	32	55	70	81	30	93	70
no reply	19	2	0	0	0	11	0	:	4	35	:	6
<b>Unemployed</b>												
full-time	32	38	15	82	62	38	80	:	47	69	51	45
part-time	53	47	24	17	32	60	20	:	41	29	37	39
no reply	15	15	61	1	6	2	0	:	12	2	12	15

Source: Special EC labour market survey.

**Table 24****Unemployment**

Question: 1. Since 1980 have you been unemployed for four weeks or longer?  
 2. If yes, how often?  
 3. Since 1980 how long have you been unemployed in total?

**Table 24a: Unemployment (overall)**

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>4 weeks unemployment since 1980</b>												
yes	33	28	17	39	55	32	41	27	36	25	:	30
no	53	71	83	60	44	67	56	72	62	72	:	69
no reply	14	1	0	1	1	1	3	1	1	3	:	1
<b>Number of periods of unemployment since 1980</b>												
one	56	54	60	41	40	65	42	30	57	48	:	51
two	17	19	18	15	17	16	18	20	10	19	:	17
three or more	20	24	20	43	43	19	40	48	21	30	:	29
no reply	7	3	3	0	0	0	0	2	13	3	:	2
<b>Duration of unemployment since 1980</b>												
less than 3 months	14	25	25	10	6	24	8	5	17	34	:	17
3-6 months	12	28	22	19	13	13	17	11	14	23	:	16
7-11 months	11	11	13	17	8	15	12	8	9	10	:	11
12-24 months	18	12	19	19	14	24	21	21	10	10	:	19
more than 24 months	40	16	20	35	58	24	37	23	40	19	:	28
no reply	4	8	1	0	1	0	4	43	10	4	:	8

**Table 24b: Unemployment (men)**

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>4 weeks unemployment since 1980</b>												
yes	30	28	14	36	52	24	39	24	30	23	:	26
no	54	71	86	63	46	75	58	76	68	74	:	73
no reply	16	1	0	1	2	1	3	0	2	3	:	1
<b>Number of periods of unemployment since 1980</b>												
one	53	53	58	35	38	62	42	31	54	43	:	49
two	18	18	17	16	17	17	16	20	13	23	:	18
three or more	22	29	23	48	44	21	42	49	25	30	:	32
no reply	7	0	2	1	1	0	0	0	8	4	:	1
<b>Duration of unemployment since 1980</b>												
less than 3 months	17	30	34	11	5	33	10	1	21	43	:	22
3-6 months	14	27	20	21	17	15	20	3	19	20	:	15
7-11 months	12	13	8	18	7	12	10	2	13	12	:	8
12-24 months	18	10	18	18	15	23	24	5	6	12	:	15
more than 24 months	34	12	20	32	56	17	35	5	38	13	:	22
no reply	5	8	0	0	1	0	1	84	2	4	:	18

Table 24c: Unemployment (women)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
	(%)											
<b>4 weeks unemployment since 1980</b>												
yes	37	18	21	45	59	43	45	42	29	72	:	38
no	51	71	79	54	39	56	53	57	69	28	:	60
no reply	12	1	0	1	2	1	3	1	2	0	:	1
<b>Number of periods of unemployment since 1980</b>												
one	59	66	61	50	43	67	42	29	59	56	:	53
two	16	21	19	14	17	14	21	20	7	15	:	17
three or more	17	22	16	36	40	19	37	51	18	28	:	28
no reply	8	1	4	0	0	0	0	0	16	1	:	2
<b>Duration of unemployment since 1980</b>												
less than 3 months	11	19	16	10	9	17	10	7	14	24	:	13
3-6 months	10	29	24	16	8	11	20	13	11	29	:	16
7-11 months	10	9	17	15	9	18	10	12	5	7	:	14
12-24 months	18	15	19	21	11	25	25	32	14	9	:	21
more than 24 months	47	21	20	38	63	29	35	36	41	31	:	34
no reply	4	7	3	0	0	0	0	0	16	0	:	2

Table 24d: Unemployment: younger employees (up to 30 years old)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>4 weeks unemployment since 1980</b>												
yes	46	39	21	65	61	55	50	49	50	33	:	44
no	41	59	79	33	38	45	46	51	50	65	:	55
no reply	13	2	0	1	1	0	4	:	0	2	:	1
<b>Number of periods of unemployment since 1980</b>												
one	53	49	58	47	40	63	47	28	59	48	57	51
two	18	24	17	18	17	16	21	20	9	20	18	17
three or more	21	22	23	35	42	22	32	52	23	31	24	30
no reply	9	5	3	0	1	0	0	:	10	0	:	2
<b>Duration of unemployment since 1980</b>												
less than 3 months	18	30	31	16	8	25	9	:	16	38	2	18
3-6 months	10	27	29	15	13	12	23	:	21	21	30	22
7-11 months	14	12	13	19	8	16	13	:	12	10	10	12
12-24 months	20	11	10	20	13	24	24	:	16	10	15	16
more than 24 months	34	14	17	29	57	24	28	:	32	20	44	32
no reply	5	5	0	0	1	0	2	:	4	2	0	1

Table 24e: Unemployment: employees aged between 30 and 49

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>4 weeks unemployment since 1980</b>												
yes	28	27	17	32	44	21	37	24	28	17	:	24
no	61	73	83	67	54	78	60	76	69	81	:	74
no reply	12	0	0	0	2	1	3	:	3	3	:	1
<b>Number of periods of unemployment since 1980</b>												
one	58	58	58	38	32	68	33	20	57	54	78	55
two	20	17	21	14	22	15	15	26	7	13	9	17
three or more	19	24	18	48	46	17	52	54	20	18	13	26
no reply	3	1	4	0	0	0	0	0	17	15	:	2
<b>Duration of unemployment since 1980</b>												
less than 3 months	9	25	23	6	3	19	5	:	27	22	18	18
3-6 months	17	29	18	22	16	13	10	:	7	26	0	12
7-11 months	6	10	13	15	5	17	13	:	0	12	4	10
12-24 months	11	14	22	19	16	23	19	:	0	6	18	18
more than 24 months	55	17	23	39	60	28	47	:	50	20	59	40
no reply	2	6	0	0	0	0	6	:	17	15	0	2

Table 24f: Unemployment: older employees (aged 49 upwards)

	B	DK	D	GR	E	F	IRL	I	NL	P	UK	EUR
<b>4 weeks unemployment since 1980</b>												
yes	22	14	11	20	45	10	30	16	11	9	:	17
no	61	84	89	80	52	90	70	84	87	85	:	82
no reply	17	2	0	0	2	0	0	:	2	6	:	1
<b>Number of periods of unemployment since 1980</b>												
one	70	52	73	28	43	85	52	47	20	47	69	63
two	7	8	9	9	11	15	14	15	40	17	5	12
three or more	21	32	18	63	46	0	33	38	20	36	26	24
no reply	2	9	0	0	0	0	0	:	20	0	:	1
<b>Duration of unemployment since 1980</b>												
less than 3 months	7	3	18	4	3	24	19	:	20	4	0	12
3-6 months	19	30	20	17	11	23	19	:	0	45	5	16
7-11 months	12	14	13	13	5	0	5	:	20	0	15	10
12-24 months	7	12	30	19	13	28	14	:	0	24	8	19
more than 24 months	49	19	19	48	65	15	43	:	40	21	72	40
no reply	7	22	0	0	3	10	0	:	20	7	0	4

Source: Special EC labour market survey.



Table 25

## Occupational qualification and nature of job (employed/unemployed)

Question: 1. Do you have any occupational training?

2. If yes, do you have in-house training or external training within the education system?

3. Are you at present employed as a skilled or an unskilled employee?

Table 25a: Occupational qualification and nature of job (overall)

	Occupational qualification					Nature of job			Occupational qualification (employed)				Occupational qualification (unemployed)			
	Yes	No	No reply	In-house training	External training	Skilled	Unskilled	No reply	Yes	No	No reply	In-house training	Yes	No	No reply	In-house training
<b>B</b>	63	31	5	24	49	49	32	19	69	26	5	28	44	51	5	9
<b>DK</b>	76	23	1	43	34	76	22	2	79	21	0	44	47	43	10	26
<b>D</b>	87	13	0	61	27	75	19	6	89	11	0	61	59	41	0	42
<b>GR</b>	63	37	0	22	40	62	22	16	:	:	:	:	:	:	:	:
<b>E</b>	57	42	1	23	32	42	32	26	63	36	1	26	45	54	1	17
<b>F</b>	74	26	0	32	47	69	21	10	77	23	0	34	51	48	1	17
<b>IRL</b>	50	48	3	30	30	57	38	5	53	45	2	27	37	57	6	26
<b>I</b>	62	38	0	40	37	68	32	0	63	37	0	38	49	51	0	21
<b>NL</b>	66	32	2	13	52	71	26	3	69	30	2	14	53	46	2	5
<b>P</b>	50	46	4	32	18	54	23	23	53	44	2	34	20	65	15	12
<b>UK</b>	48	52	0	26	17	57	31	12	53	47	0	30	25	75	0	10
<b>EUR</b>	66	33	0	36	32	64	26	10	69	30	0	38	45	54	1	21

Table 25b: Occupational qualification and nature of job (men)

	Occupational qualification					Nature of job		
	Yes	No	No reply	In-house training	External training	Skilled	Unskilled	No reply
<b>B</b>	67	26	7	30	49	53	28	19
<b>DK</b>	79	20	1	47	32	79	20	1
<b>D</b>	91	9	0	66	27	83	13	4
<b>GR</b>	62	38	0	24	37	64	21	15
<b>E</b>	61	38	1	19	30	49	30	21
<b>F</b>	80	20	0	38	50	78	14	8
<b>IRL</b>	47	50	3	33	23	56	38	6
<b>I</b>	63	37	0	43	36	70	30	0
<b>NL</b>	70	28	2	16	53	71	28	1
<b>P</b>	54	43	3	36	18	57	21	22
<b>UK</b>	55	45	0	37	14	64	24	12
<b>EUR</b>	70	29	1	41	32	70	22	8

Table 25c: Occupational qualification and nature of job (women)

	Occupational qualification					Nature of job		
	Yes	No	No reply	In-house training	External training	Skilled	Unskilled	No reply
<b>B</b>	59	37	4	16	49	43	37	20
<b>DK</b>	73	25	2	45	36	75	25	0
<b>D</b>	80	20	0	52	26	63	26	11
<b>GR</b>	63	37	0	18	45	57	24	19
<b>E</b>	49	51	0	10	37	28	36	36
<b>F</b>	64	36	0	23	42	56	31	13
<b>IRL</b>	55	42	3	55	46	59	38	3
<b>I</b>	59	41	0	34	38	64	36	0
<b>NL</b>	63	36	1	9	52	72	24	4
<b>P</b>	43	53	6	25	22	49	26	25
<b>UK</b>	37	63	0	11	21	64	24	12
<b>EUR</b>	59	41	0	27	33	58	29	12

Source: Special EC labour market survey.



## **Part II**

# **Quest — A macroeconomic model for the countries of the European Community as part of the world economy<sup>1</sup>**

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<sup>1</sup> The 1990 version has been prepared by Andries Brandsma, Juul op de Beke, Liam O'Sullivan and Werner Röger of the Econometric Modelling Division, under the direction of Anton Bakhoven, Economic Adviser, and André Dramais, Head of Division.



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## 1. Introduction

The 1990 version of the Quest model<sup>1</sup> covers the economies of all EC Member States, with the proviso that the model for Germany is based only on the 11 original *Länder* of Western Germany.<sup>2</sup> Procedures are being prepared for extending the coverage as soon as official data for the united Germany become available. Luxembourg is already modelled in a similar way, as part of the Belgium-Luxembourg Economic Union. The system therefore contains 11 structural models for the EC countries. A special feature is that the periodicity of the models for Denmark, Greece, Spain, Ireland and Portugal is annual, whereas the rest of the system is built on quarterly data. Each country model can be operated separately or in conjunction with the models for the other EC countries. Macroeconomic models for the United States and Japan are also included in the linked system. All country models are similar in structure, but have estimated parameters that make the magnitude and timing of their response to shocks quite different. The linkage is provided by a model of bilateral trade in goods.

The Quest model is constructed and maintained by the Directorate-General for Economic and Financial Affairs (DG II), mainly to assist in macroeconomic forecasting and policy analysis. A stated aim is also to enhance the understanding of the workings of the different economies and their interaction on a world level. For that purpose, the model should be kept as small as possible. With 12 key behavioural relations, the country module used to set up the structural models is of a moderate size. The actual number of equations in the operational country models is, of course, much larger. Definition equations have to be added to close the GDP identity in real and nominal terms, and also to set up a consistent accounting framework for sectoral incomes. More equations are added to provide the necessary detail for the forecasting tables and to define the linkage variables in a consistent way.

The linkage system itself distinguishes 26 zones, 20 of which correspond to individual countries, and so contains more than 600 bilateral trade relations. A similar number of equations is needed for the definition of import prices and competitors' export prices. That brings the total size of the system, including the 13 structural models for the EC

countries, Japan and the United States and trade-feedback models for the remaining 13 zones, to some 2 500 equations. Fortunately, the description may be restricted to a limited number of behavioural relations, which have the same structural form across countries.

Standard regression techniques have been used to estimate the parameters of these relations for each of the 13 structural models.<sup>3</sup> Most equations are linear with respect to the coefficients and their general form is derived within a theoretical context. Country-specific elements are introduced to a very limited extent and only when they are statistically significant.

The approach whereby structural differences between the countries are allowed for only when institutional arrangements or other information on the structure of the economy clearly point to it, is fairly common to the latest generation of multinational models. The older generation, of which the LINK project is still the prime representative, uses the approach of linking existing models of national economies. In recent years there has been a real proliferation of models of the world economy, which are usually built by a single modelling team but are transferable to other institutes.<sup>4</sup> None of the macromodels of the new generation contains separate submodels for all EC countries. They further differ as regards size, periodicity and level of disaggregation. It was already remarked above that the size of the model, although important for the manageability of the system, is not a distinctive feature. Neither is the periodicity. Quest combines annual and quarterly models, but as long as the user is only interested in year-to-year results these could equally well be obtained from a system in which the quarterly models are annualized. Distinctive features of a model are its geographical coverage, its level of disaggregation and, above all, its assignment of endogenous and exogenous variables. In a world system, because of the importance of

<sup>1</sup> The first version of the Quest model (1988 version) was presented in P. Bekx, A. Bucher, A. Italianer and M. Mors, *Economic Papers* No 75, March 1989.

<sup>2</sup> Throughout this section, references are made to the model for Germany. This model was estimated on data for the former Federal Republic but the terms Germany and Western Germany are used interchangeably to describe it.

<sup>3</sup> Throughout the study, the following mathematical symbols are used. A dot over a variable denotes a growth rate and a  $\Delta$  indicates a first difference.

<sup>4</sup> The Quest model is included in a SPES project entitled Macroanalysis and modelling of interdependencies between European economies. This project, which is supported by the Commission, uses three other world models:

(i) Mimosa, jointly developed by the Centre d'études prospectives et d'informations internationales and the Observatoire français des conjonctures économiques, both in Paris;

(ii) GEM, developed by the National Institute for Economic and Social Research and now jointly maintained with the London Business School;

(iii) Primo, under construction at Prometeia, Bologna.

Simulations with the Quest model are also performed at the Deutsches Institut für Wirtschaftsforschung in Berlin.

The project compares the results of standard simulations for Germany, France, Italy and the United Kingdom on each of these models.

linkages, it is especially important to know the role played by economic factors which are assigned as exogenous variables in order that the behavioural characteristics of the model may be fully understood. Accordingly, it is appropriate to discuss the exogenous variables in some detail at this point.

The exogenous variables of the Quest model consist of the demography variables, the international price of oil, the fiscal instruments, interest rates and exchange rates.

The first version of the Quest model included an estimated reaction function for interest rates but difficulty in establishing plausible simulation properties as well as changes in institutional arrangements have necessitated a more pragmatic approach this time. Further details regarding the monetary sector are given in Annex 1. For forecasting purposes, the standard assumption regarding the demography variables is that the profile will follow long-term trends in fertility, migration and participation in the labour force. The US dollar price of oil is normally assumed to remain constant in real terms but, given the volatility of the market for oil, circumstances may dictate a more definitive profile. For medium-term analysis, the framework within which assumptions or fiscal policy are couched reflects the stated intentions of governments regarding the share of the public sector in GDP. A typical assumption on monetary policy is that it accommodates any change in the underlying inflation rate but that real interest rates stay constant. Exchange rate assumptions are usually based on a hypothesis of constant real ECU/USD and YEN/USD exchange rates. For the Community currencies, assumptions are then based on the EMS constraint. It is conceivable that some of the exogenous variables could be made endogenous, for instance by including a model of labour supply and participation in the labour force,<sup>1</sup> and by re-examining the possibilities regarding reaction functions and other target-oriented approaches for the policy variables.<sup>2</sup>

The model may be simulated under different regimes for the policy instruments. Government expenditure may be fixed in real or nominal terms, and the same is possible for interest rates. More elaborate monetary regimes in which interest rates are set so as to fix the money supply are technically possible for the existing version of the model and will be developed further in the context of the revision of the monetary sector. The implementation of a regime of forward-looking exchange rates and open interest arbitrage is under investigation.

Two other models used by the Commission deserve to be mentioned here. First, there is the Compact model<sup>3</sup> in which all EC countries are aggregated into a single block and which served as a prototype for the Quest model. It is still used in the preparation of medium-term projections, but will be replaced by the Quest model in the near future. The second model is built by the Hermes group of national teams and maintained at the Directorate-General for Science, Research and Development (DG XII). It shares some features with the Quest model and it was used in the study on 'The economics of 1992'.<sup>4</sup> Because of its sectoral disaggregation it is well suited for *ad hoc* studies on energy and environmental issues, but its sheer size makes it less useful for macro-economic policy studies.

Procedures are in place for reproducing DG II's economic forecasts on the Quest model. These are short-term forecasts (up to eight quarters ahead). Similar procedures may be applied to reproduce medium-term forecasts as a baseline, but in this case the hands-off projection of the model itself may be allowed to play a more prominent role. Nevertheless, the main use of the model will be in policy evaluation. It has already been deployed in background studies of German unification, in analysing the effects of the oil-price shock and in the study on the costs and benefits of European monetary union.<sup>5</sup>

To conclude this section, an outline is sketched of the remainder of the study. Section 2 presents the general framework in which the equations of the model are embedded: the linkage system at international level and the sectoral income accounts for the national modules. The description of the equations of the international linkage block follows in Section 3. The next three sections describe the behavioural relations of the national models. The description starts in Section 4 with the supply block, which gives the model its medium-term character. This section highlights the role of investment, the capital stock accumulating from it and the derivation of labour demand from capacity output. The demand equations discussed in Section 5 are fairly conventional. Section 6 presents the wage-price block. The simultaneity between wages and prices seems to be a major determinant of the dynamic behaviour of the model and, consequently, is analysed in some depth. Section 7 presents the results of a simulation wherein government investment is increased by 1 % of real GDP both when nominal and when real interest rates are fixed at baseline levels. These simulations have been performed on all structural models in non-linked mode. Exchange rates remain fixed in nominal

<sup>1</sup> In the models for Ireland and Japan, the labour supply has already been endogenized.

<sup>2</sup> Some approaches are suggested in Brandsma (1989).

<sup>3</sup> A full description of the Compact model is given in Dramais (1986).

<sup>4</sup> *European Economy*, No 35, March 1988.

<sup>5</sup> One market, one money, *European Economy*, No 44, October 1990.

terms. A linked simulation then shows the effects of a depreciation of the US dollar by 10 % against all other currencies.

## 2. General framework

A macroeconomic model describes the behaviour of economic agents at aggregate level as they engage in activities such as production, consumption and trade. The grouping of agents and activities determines the level of aggregation of the model. In the Quest model, this is governed by the system of national accounts which identifies sectors of the economy that, as a group, generate a registered surplus or deficit. It is assumed that there is only one productive sector. Country models which are based on estimated relationships using the national accounts in this way are called **structural models** in the Quest terminology. The system is set up so that they can be operated in unlinked mode.

At the international level, the country as a whole is the basic unit of aggregation. It is important to recognize that, at this level, the Quest model may be operated without any reference to the sectoral disaggregation of the national economies. The linkage system could be closed by any country model which links import volumes to export volumes and export prices to import prices. In fact, models which do only that are included for all countries or zones which are not modelled in a structural way. These **trade-feedback** models provide an echo for the structural models in linked simulations. Since the scope for linking structural country models to the system is, in the first instance, limited by the choice of countries and zones in the trade linkage block, this section begins with a general description of this part of the model. In doing so, the minimum requirements to be imposed on the structural models become clear before the more elaborate modelling of the national economies is set out in general terms.

### 2.1. The trade linkage model<sup>1</sup>

The Quest model distinguishes 26 zones, 13 of which are represented by country models in structural form. The trade linkage model takes the import demand for each country or zone as given and then determines the exports of all zones from bilateral trade equations. An adding-up constraint is imposed to make sure that bilateral exports to each country sum to the total imports of that country. Apart from the

well-known discrepancy, which is attributed in the model to the internal trade of the rest of the world zone, world exports are therefore constrained to add up to world imports. The bilateral shares in the imports of each country are then used to determine import prices from the export prices given by the country models. These bilateral shares are also used as the basis for calculating an index of competitors' export prices used in the export price equations of the structural models.

The basic assumption behind the setting up of the trade linkage system is that the allocation of total imports over trading partners is independent of the division of final demand into imports and domestic production.<sup>2</sup> This separability theorem does not generally stand up against rigorous empirical testing. The most obvious example in which it does not hold is that of energy trade between countries which produce oil and countries which do not. For such cases, a special provision has been made in the Quest model which is discussed in more detail below. Non-energy goods, on the other hand, are produced and traded by all but a few countries. Therefore, for this category the convenient framework of the two-stage approach is taken to apply. Total non-energy imports are first derived from the country models and, in stage two, imports are allocated to trading partners taking account of their relative export prices.

**Services** cannot be included in the linkage system since no data for trade in services are available on a bilateral basis and so do not feature in the trade-feedback models either. The structural models contain equations for both imports and exports of services, which are needed to close the GDP identities and to properly define the balance of trade. To satisfy the adding-up constraint and in the absence of a complete trade linkage system, trade in services is assumed in principle to move in line with trade in goods. This is accomplished by establishing a direct relationship between the growth of imports and exports of services and that of goods, or at least by a close resemblance in specification between the equation for services and the aggregate equation for trade in goods.

### 2.2. The treatment of energy

Among traded goods, energy has a special role to play because it is a crucial input for many production processes and because in the short to medium term few substitutes are available for it. Moreover, while many countries are net importers of energy, some are net exporters and some almost

<sup>1</sup> This part of the model is described in general terms in Section 3. A full exposition is given in Italianer (1987).

<sup>2</sup> Italianer (1986).



exclusively export oil. In the Quest system five of the trade-feedback countries/zones are identified as regions for which energy exports are important (Canada, Australia, Norway, the CPEs and the rest of the world zone). The United Kingdom is a net exporter of energy for which a structural model is included, while OPEC only exports oil and is treated as the swing producer. The output of energy (natural gas) in the Netherlands is similar to that of the United Kingdom expressed as a percentage of GDP. In 1985, the Netherlands also became a net exporter of energy. Finally, France is a major producer of nuclear energy which is used strategically to replace energy imports.

Provisionally, the system has been set up as follows:

- (a) As a net exporter of oil represented by a structural model, a supply-determined equation for energy exports has been estimated for the United Kingdom.
- (b) In the trade linkage block, energy exports from the United Kingdom to the other EC countries, the United States and Japan are distributed to the bilateral export equation for total goods according to these countries' proper share in United Kingdom energy exports (taken together, they account for more than 80 % of the total).
- (c) The same is done for the Netherlands (almost 90 % of Dutch exports of energy go to the other EC countries).
- (d) The bilateral trade flow (consisting only of oil) from OPEC to these same countries is set equal to the difference between their imports of energy and exports from the United Kingdom and the Netherlands.
- (e) For bilateral exports from OPEC to the other countries/zones, the price elasticity is set equal to zero under the assumptions that OPEC only exports oil, that it only competes with other energy exporters and that the law of one price holds for energy products.

Since the relative price terms have all been redefined so as to relate to non-energy goods only, and the trade-feedback models contain no separate equations for energy imports, the trade linkage model mainly serves the purpose of reflecting changes in exports of non-energy goods. Energy exports follow directly from exogenous energy production in the structural models for the United Kingdom and the Netherlands. The other energy exporters, except OPEC, are assumed to maintain their market shares in each importing country. The market shares of OPEC are only affected in so far as the imports of energy derived from the structural models change. In this respect, the performance of the linkage system will improve as more structural models are added to the system.

## 2.3. The sectors of the national economy

On the income side, the Quest model distinguishes four sectors of the economy. Their accounts are modelled in line with the tables of DG II's economic forecasts.

### 2.3.1. Households

Households have different sources of income:

- they supply labour to firms and to the government;
- they obtain their share of the gross operating surplus of enterprises, either because they are self-employed or because they receive dividends on share ownership;
- they receive interest on holdings of government bonds;
- they are the beneficiaries of income transfers from the government and from abroad.

The wage bill paid by firms and by the government, including employees' social security contributions, corresponds to the first item. It follows from an estimated wage equation which is described in detail in Section 6. The next two items together constitute non-wage income. A semi-behavioural relationship has been estimated in order to determine non-wage income of households. The general form of the equation is

$$y_{nw} = a_0 + a_1 lse.wr + a_2 int + a_3 gos \quad (2.1)$$

where  $y_{nw}$  = non-wage income of households  
 $lse$  = number of self-employed  
 $wr$  = wage rate  
 $int$  = interest payments on government debt  
 $gos$  = gross operating surplus

The parameter which is of greatest interest from the point of view of estimation is that determining the household share in the gross operating surplus. A typical estimate of the share is of the order of one third. The coefficient on the income imputed to the self-employed is expected to be close to one. The number of self-employed is assumed to be determined exogenously. The wage rate variable is included in the equation in order to approximate the wage element of the income of the self-employed and is assumed to be the going rate for the economy as a whole. This is quite an important equation in determining the overall simulation properties of the model because of the role it plays in determining disposable income and therefore consumption expenditure.

Income transfers from the government to households are related to unemployment by a semi-behavioural relation. The sum of all the components of income net of taxes and

social security contributions paid by households is disposable income. The consumption function determines how much of it is spent on the purchase of goods and services and how much is saved.

### 2.3.2. Firms

Firms combine labour with capital to produce goods and services. Labour demand and investment may be derived from profit maximization under the constraint of a production function. Although this derivation is not followed rigorously in the investment function (in which an accelerator-type approach is used instead) it can be reconciled with a putty-clay decision framework in which substitution between production factors is possible before but not after capital has been installed.<sup>1</sup> The value added to inputs on a macro-level is distributed to the two production factors.

Firms are assumed to have access to both internal and external means of financing. The internal means correspond to the part of the gross operating surplus which does not accrue to households or the government, i.e. companies' after-tax profits. The external sources are household savings, public savings and foreign savings. Profitability and interest rates may therefore both be expected to play a role in determining investment, keeping in mind that full articulation of financial flows is not included in the Quest model.

### 2.3.3. Government

The government receives taxes and social security payments from households and firms, and has limited income sources of its own in the form of the trading surplus and profits of public companies. Government consumption is split into an (imputed) wage component and exogenous non-wage expenditure. Wages account for between 20 and 30 % of current government expenditure. The other outlays are interest payments on government debt, transfers to households, subsidies and investment expenditure. Current transfers to households in the EC countries range from 30 to almost 50 % of government expenditure.

An overview of the structure of the government sector is given in Table 2.1.

There are only three genuinely endogenous variables among those making up the government sector, namely, transfers to the household sector, interest payments on government debt and taxes on income. Government consumption and investment may be set in real or in nominal terms. The

**Table 2.1**

#### The government account

##### Expenditure

1. Government consumption	cg
2. Government investment	ig
3. Net subsidies	sub
4. Current transfers to households	tph
5. Interest payments on public debt	int

##### Revenue

6. Income tax	tyh
7. Corporate tax	tyc
8. Indirect taxes	ti
9. Employers' social security contributions	scc
10. Employees' social security contributions	sch
11. Other non-tax income	yg

$$\text{Government deficit} = cg + ig + sub + tph + int - tyh - tyc - ti - scc - sch - yg$$

same applies to subsidies. Social security contributions are determined by reference to an exogenous rate of contribution applied to the wage bill. A similar approach is used in the case of corporate taxes, the rate in this instance being applied to the level of profits. Indirect taxes have two components—value-added tax (VAT) and other indirect taxes. The VAT rate is exogenous and the base is assumed to be the level of consumption. Other indirect taxes are a function of total demand. The trading and investment income of the government is related to the gross operating surplus.

Income taxes are behaviourally determined in the model. The tax base is the sum of the wage bill, non-wage income and net income transfers received by households. An income elasticity greater than one may be taken to be an indicator of progressivity in the tax system. Estimates range from 1.02 to 1.36 in the structural models.

In determining transfers received by households, the rate of unemployment and, in some cases, the population not of working age are used as explanatory variables. The range of estimates from across the models indicates that, on average, a one percentage point increase in the rate of unemployment results in an increase of 0.4 percentage points of GDP in transfer payments.

Finally, a behavioural equation for the implicit rate of interest on government bonds is estimated wherein the long-term rate of interest is the explanatory variable. Interest payments are then set equal to the product of this interest rate and

<sup>1</sup> Catinat *et al.* (1987).

government debt which in turn is the accumulation of the deficit over time.

### 2.3.4. The foreign sector and the balance of payments

The sectoral income accounts for each country are closed by their current transactions with the rest of the world. The balance of trade is defined in Quest so as to include trade in both goods and services. The current account of the balance of payments is then given by the sum of the balance of trade and the exogenously set level of net international transfers.

Since data for the quarterly country models are extracted from national sources and national accounting conventions differ between countries, the uniform framework adopted for the country module had to be filled in using quite liberal assumptions on occasion.

## 3. The trade linkage equations

### 3.1. The bilateral trade relations

The trade linkage block contains bilateral export equations for trade in goods between 20 OECD countries and the rest of the world divided into six zones (the four most advanced newly industrializing economies in East Asia have been separated from the other newly industrialized countries (NICs) in the 1990 version of Quest). The architecture of the Quest system is such that the trade linkage block can be run without recourse to the structural models. To do so, the only requirements are import volumes and export prices for the 26 countries/zones.

The bilateral export equations are all of the form

$$\ln x_{ij} = a_{ij} + \ln m_j + b_{ij} \ln (x_{ij}(-1)/m_j(-1)) + c_{ij} (1 - b_{ij}) \ln (px_i/pm_j) \quad (3.1)$$

where  $x_{ij}$  are the bilateral exports from country  $i$  to country  $j$  in real terms,  $m_j$  are the real imports of country  $j$ ,  $px_i$  is the export price of country  $i$  and  $pm_j$  the import price of country  $j$ .

Table 3.1 summarizes the estimated long-term price elasticities for the bilateral trade flows. The importing countries have been grouped into blocks for which the range of price elasticities are given, excluding the outliers at both ends. Export price elasticities for trade with the USA are given separately. Outliers are excluded because the estimates were

found to be unreliable for small trade flows. No clear pattern arises regarding whether trade partners belong to the same block or not. Except for the UK, the ranges for the EC and the group of other countries overlap to a large extent. The average long-term elasticity is determined by the simulation of price shocks in the trade linkage model only, and is found to lie between  $-0.7$  and  $-1.2$  for all OECD countries. This range is extended to  $-1.5$  if non-OECD zones are included. The world average is very close to  $-1.0$ . This value has been imposed on the NICs following the separation of the four Asian newly industrializing countries from the other countries in the NI zone.

**Table 3.1**

**Long-term bilateral price elasticities<sup>1</sup>**

Exporting country zone	Importing country zone			Simulated average
	EC (range)	US	Others (range)	
<i>EC:</i>				
B/L	0.4—1.3	1.9	0.1—1.3	0.7
DK	0.6—1.3	1.6	0.8—1.7	1.1
D	0.6—1.2	1.7	0.3—1.4	0.8
GR	0.3—2.4	0.6	0.6—1.7	0.7
E	0.5—1.4	0.0	0.1—1.4	0.9
F	0.7—1.5	0.9	0.0—1.5	0.7
IRL	0.7—2.6	1.6	0.7—2.8	1.2
I	0.5—1.5	1.2	0.6—2.0	1.1
NL	0.6—1.6	1.0	0.2—2.2	0.8
P	0.5—1.7	0.9	0.6—2.1	1.1
UK	0.5—1.0	1.6	0.7—2.3	1.1
US	1.0—1.8	—	0.6—1.7	1.0
JA	0.5—2.7	1.7	0.5—1.9	1.1
<i>Others:</i>				
CA	0.1—2.2	0.5	0.5—1.4	0.7
AU	0.1—1.7	0.9	0.2—1.5	1.1
AT	0.4—1.5	1.1	0.1—1.1	0.8
FI	0.5—2.0	1.2	0.3—1.6	0.9
NO	0.6—2.2	2.0	0.4—2.4	1.2
SE	0.5—1.3	1.2	0.1—1.0	0.8
SW	0.2—1.3	0.7	0.4—1.5	0.7
RO	0.7—1.9	1.2	0.8—2.4	1.5
OP	0.4—1.9	2.7	0.1—3.0	0.9
CP	0.8—2.2	2.2	0.1—1.5	0.8
TI/NI	0.1—2.2	2.0	0.5—2.4	1.3
RW	0.8—1.8	1.0	0.9—1.8	1.4

<sup>1</sup> Price elasticities are of course negative in all cases.

Import prices are a trade weighted average of export prices

$$pm_j = \frac{\sum_i x_{ij} p x_i}{\sum_i x_{ij}} \quad (3.2)$$

As long as relative prices remain constant, world exports are equal to world imports, since in accordance with the equations in Section 3.1 aggregate exports have an elasticity of one with respect to the weighted sum of imports (which corresponds to world trade). If relative prices do change, the adding-up constraint ensures that the total volume of world exports remains equal to the total volume of world imports. For this purpose, c.i.f. (cost, insurance and freight) imports are first made compatible with exports which are expressed on a f.o.b. (free on board) basis in the country models.

### 3.2. The trade-feedback equations

In order to close the model and to provide an echo for the structural models in linked simulation, reduced form equations linking the import volumes of goods to exports

and the export price to the import price have been estimated for the countries and zones which are not represented by structural models (13 in the 1990 version of Quest). In general, the import equations have the following error correction form

$$\ln m_j = a + k \{b \Delta \ln x_j + c \Delta \ln (pm_j/px_j)\} + (1-d) \{b \ln x_j (-1) + c \ln (pm_j (-1)/px_j (-1)) - \ln m_j (-1)\}. \quad (3.3)$$

Assuming that  $k = 1 - d$ , this reduces to the partial adjustment form

$$\ln m_j = a + (1-d) b \ln x_j + (1-d) c \ln (pm_j/px_j) + d \ln m_j (-1). \quad (3.4)$$

The long-term elasticities  $b$  and  $c$  are estimated to be not greater than one for all countries. Their absolute value mostly varies between 0.5 and 1.0. Unit elasticities have been imposed for the zones covering OPEC, NICs and the LDCs (rest of the world).

#### Box 1: Countries and zones in the Quest model

##### Complete country models

1. B/L Belgium-Luxembourg Economic Union (BLEU)
2. DK Denmark
3. D FR of Germany
4. GR Greece
5. E Spain
6. F France
7. IRL Ireland
8. I Italy
9. NL Netherlands
10. P Portugal
11. UK United Kingdom
12. US United States of America
13. JA Japan

##### Zone trade-feedback models

21. RO The rest of the OECD countries:
22. OP OPEC:
23. CP Centrally planned economies:
24. TI The four Asian newly industrializing economies:
25. NI Other newly industrializing countries:
26. RW The rest of the world:

##### Country trade-feedback models

14. CA Canada
15. AU Australia
16. AT Austria
17. FI Finland
18. NO Norway
19. SE Sweden
20. SW Switzerland

Iceland, New Zealand, Turkey  
Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela  
Albania, Bulgaria, Czechoslovakia, former German Democratic Republic, Hungary, Poland, Romania, Union of Soviet Socialist Republics  
Hong Kong, Korea, Malaysia, Philippines, Singapore, Taiwan  
Argentina, Brazil, Israel, South Africa, Thailand, Yugoslavia  
All countries not included elsewhere, including trade not specified in terms of estimation

**Table 3.2****The import equations in the trade-feedback model**

Country/zone	Estimated elasticities (long-term)	
	volume of exports	relative prices
CA	0,8	-1,0
AU	0,9	-0,3
AT	0,7	-0,8
FI	0,6	-0,4
NO	0,2	-0,5
SE	0,6	-0,8
SW	1,0	-1,0
RO	0,7	-0,7
OP	1,0	-1,0
CP	0,7	-0,3
TI	1,0	-1,0
NI	1,0	-1,0
RW	1,0	-1,0

The export price equation assumes the following general form

$$\ln p x_j = a + k.b \ln p m_j (-1/2) + (1-d).b \ln p m_j (-3/2) + d \ln p x_j (-1). \quad (3.5)$$

In the long run, it is estimated that between 60 and 100 % of the changes in the import price of non-energy goods is transmitted directly into an export price change.

## 4. The supply block

### 4.1. Introduction

This section describes the supply of goods and services in relation to the availability of capital and labour. The main components of the supply block derive from the behaviour of firms in setting output and prices. Choosing a level of inventories and determining the demand for production factors are aspects of the same decision problem. In general terms, the behaviour of firms is characterized by their response to changes in demand and relative factor costs, given the technological constraints facing the corporate sector at the time when decisions are made.

Before proceeding to a detailed discussion, it may be useful to briefly outline the philosophy underlying the analysis. The general approach adopted in this section mirrors that

of the overall document in so far as it attempts to put the actual specification used in Quest into its theoretical context. In this way, the logic of the approach can be better understood. The divergences between theory and practice have the useful byproduct of highlighting possible areas for further research.

In describing the adjustment of supply in Quest it is useful to distinguish between long-term and short-term properties. This reveals that Quest is a typical representative of the neoclassical-Keynesian synthesis. A feature of this synthesis is the introduction of potential GDP in addition to actual GDP in order to demonstrate that adjustment of supply may not be instantaneous and that disequilibrium in the goods market can persist for some time. The production function in Quest defines potential output as the maximum technologically feasible output given the capital stock.

Potential output plays an important role with respect to the basic dynamic behaviour of supply. In the short term, it relates productive capacity to aggregate demand, the difference between the two being the degree of capacity utilization which plays a significant role in Quest. Its primary function is to act as an indicator of demand pressure in the model, as a counterpart on the demand side to the role played by the unemployment rate in the supply block. Its influence is quite pervasive and crosses the boundaries between the different sectors within the model. On the demand side, it acts as an adjunct to the accelerator effect in the private investment in equipment equation while its role in the investment in inventories' equation is to capture the influence of work in progress on the level of stockbuilding. In principle, a negative relationship between the capacity utilization rate and inventories investment may also exist. In the value-added price equation, the rate of change of the capacity utilization rate forms part of the mechanism by which mark-up behaviour is endogenized. It signals to firms how to set their prices in order to meet demand. So what matters for firms in assessing demand conditions is the utilization of the capital stock. In the short term, potential output sets an upper bound for demand and therefore determines when demand conditions become inflationary. The possibility of insufficient adjustment of supply on the part of firms is also reflected in movements of inventories. Their behaviour constitutes another mechanism by which firms can spread their output over time in order to bring their capacity into line with final demand. In the medium term, potential output is itself determined by the enterprise sector. This process occurs via investment (in equipment) whereby firms determine the capital stock and thereby potential output.

Employment constitutes the second factor of production. Labour supply, measured by reference to the population of

working age and the participation rate, is assumed exogenous<sup>1</sup> in the model so that employment is determined largely by labour demand. Here again a distinction between short- and long-term behaviour is important. It is assumed that the adjustment of employment to changes in actual output is not immediate. This can be justified by the existence of adjustment costs which can make some degree of labour hoarding over the cycle profitable for firms. In the long term, employment adjusts to potential employment via the adjustment of output to potential output.

## 4.2. Description of supply factors

### Potential output and capacity utilization

Potential output ( $y_{pot}$ ) is implicitly defined via the degree of capacity utilization ( $uc$ )

$$y_{pot} = y/uc \quad (4.1)$$

which links feasible output for a given capital stock to GDP determined by aggregate demand. In Quest it is assumed that potential output is constrained by the capital stock ( $k$ ). The long-term relationship with potential output is estimated to be<sup>2</sup>

$$y_{pot} = a.k^b \quad (4.2)$$

This relationship characterizes the long-term behaviour of the capital output ratio and is allowed, from a theoretical standpoint, to vary over time ( $b \neq 1$ ). The  $a$  coefficient incorporates technological factors but also other long-term factors which influence the optimal long-term capital output ratio such as, for example, the long-term level of real wages and capital costs. In Quest, the assumption is invoked that the underlying production function is of the CES-type. Regardless of the type of production function, trends in the long-term capital output ratio can essentially be explained by two factors. Autonomous technical progress can lead to a decline in the capital output ratio ( $b > 1$ ), while a decline in capital costs could induce a trend towards more capital-intensive production ( $b < 1$ ). Whether  $b$  is smaller or greater

than one is theoretically ambiguous, but in estimation it is not significantly different from one. It is also implicitly assumed that capital is homogeneous, i.e. there is no embodied technical progress associated with the installation of new capital goods.

In each period, potential output is predetermined and defines productive capacity given the existing capital stock, which in conjunction with the long-term level of real wages determines a specific capital output ratio as being efficient. Given its productive capacity, the corporate sector faces an aggregate demand schedule. By setting prices at an appropriate level, firms must reconcile actual and potential output optimally. The level of the existing capital stock may, however, not be optimal given present or expected demand conditions, capital costs or profitability. In this case firms adjust their capital stock and thereby potential output to these new conditions via investment. The capital stock is assumed to evolve according to the following capital accumulation equation

$$k = i + (1 - d)k_{t-1} \quad (4.3)$$

The depreciation rate is regarded as changing over time. It would of course be desirable to endogenize the rate of scrapping by tying it more closely to economic conditions. A problem, however, is the paucity of good data for depreciation. It is certainly the case that the existing capital stock may become obsolete when large unexpected shocks in factor costs (e.g. oil prices) occur. However, at present the capital stock data are too unreliable to serve as a basis for statistical inference of this type.

### Price behaviour and inventory investment

The key decision for the firm therefore (in the short term) is the level at which to set prices. This decision determines how much will be demanded. Theories of the firm generally distinguish three components that are likely to play a role in price setting, namely costs, demand and competitive conditions.<sup>3</sup> The relative weight of these components differs between the short and medium term. Demand, expressed here as the rate of capacity utilization, and competitive conditions, expressed as the deviation of import prices from trend behaviour, influence prices in the short term. In the long term prices track unit labour costs allowing for the addition of a fixed mark-up factor, thus capturing the phenomenon of a relatively constant labour share in GDP.

<sup>1</sup> Except in the case of the Irish and Japanese models. The Irish model has an endogenous labour force dependent in part on migratory trends. Emigration, in turn, reflects relative employment opportunities in Ireland and the United Kingdom. The Japanese model includes a 'discouraged worker' parameter in the labour supply equation to mitigate the effects of changes in employment on unemployment.

<sup>2</sup> In Quest, a measure of potential output that combines capital and potential employment for a given real wage rate is also computed so as to measure economically feasible output at the going wage rate.

<sup>3</sup> A more detailed exposition of the standard Quest price equation is given in Section 6.

Another dynamic element is the speed of adjustment of prices to changes in the underlying determinants. The speed of adjustment of prices determines in large part the real effects of changes in demand and thereby of demand policies. While non-neutralities due to price inertia are allowed in Quest in the short term, the price equation is homogeneous of degree one with respect to wage costs in the medium term. This precludes nominal variables from having permanent effects on real GDP and employment.

Inventories constitute another means by which firms may try to reconcile movements in demand with existing productive capacity. Theoretically, there exists an optimal level of inventories which will be determined by the marginal cost of holding stock as against the marginal benefits of avoiding price adjustments which might cut revenues.<sup>1</sup> How quickly inventories adjust to this optimal level, given movements in final demand or factors determining the optimal inventory to final demand ratio (e.g. interest rates), will therefore be related to the speed of price adjustment. In Quest there is no explicit connection between price and inventory adjustment but this relation should be reflected in the corresponding adjustment parameters in both equations.

### Labour demand

Labour demand is determined by a conventional neoclassical demand function under the additional assumption that the adjustment of employment to changes in actual output and real wage costs takes time. Three factors determine labour demand, namely, output, real wage costs and an autonomous technology trend. The existence of adjustment costs due to technological and institutional factors precludes firms from adjusting instantaneously to new economic conditions. Depending on the importance of this constraint, past levels of employment exert an influence on the present employment situation. The following specification is generally used for estimation purposes:

$$\ln(leep) = a_0 + a_1 \ln(leep_{-1}) + (1 - a_1) \ln(y) + a_2 \ln(wc/py) + a_3 t \quad (4.4)$$

where  $leep$  = number of employees in the private sector  
 $y$  = real GDP  
 $wc$  = wage cost  
 $py$  = GDP deflator  
 $t$  = time trend

<sup>1</sup> The determinants of the inventories to final demand ratio are described in more detail in Section 5.

Table 4.1 shows elasticities for the labour demand equation. In interpreting the tables generally it should be noted that short-term elasticities are not comparable in a strict sense across the country models because of the mixture of annual and quarterly periodicity. The tendency for the annual models to show somewhat larger short-term elasticities may be due to the greater length of the current period in an annual model.

The long-term elasticities of labour demand with respect to real GDP are restricted to one. This constraint was imposed in order to distinguish between technical progress and scale effects. The estimates for the long-term elasticities of substitution are distributed around a value of 0.5. Italy is an outlier with a very small elasticity. It is noteworthy also that the labour demand equations based on annual data show a somewhat higher elasticity of substitution. There are differences also in the speed of adjustment of employment to demand and cost conditions. Among the quarterly models the United States clearly stands out with adjustment within a quarter between two and four times larger than for the other countries while in general, when the calculation for the quarterly models is made on an annual basis, the results suggest that about 50 % of the adjustment is completed within a year. This corresponds roughly to the estimates for the short-term elasticity for the models based on annual data. The last column shows the estimated growth rate of autonomous technical progress. Since the estimation period for each country model differs significantly, these estimates must be interpreted with some caution. In general, however, they lie within the expected range.

### 4.3. The effects of positive productivity shocks

In order to illustrate the operation of the Quest model, particularly the supply block, simulation results showing the adjustment of the German and United Kingdom economies to an autonomous increase in labour productivity are presented in this section.

In the simulation it is assumed that a technology shock reduces labour demand to a level 1 % below the baseline in the long term. Fixed real exchange rates are also assumed. This is done in order to avoid spurious reaction to trade balance effects emanating from changes in the domestic price level.

While the adjustment process is similar in both countries, there are, however, differences in the magnitude of the results. It was pointed out in the introduction to this chapter that the short-term and long-term behaviour of the model should be distinguished. This is clearly visible in comparing



**Table 4.1****Labour demand elasticities<sup>1</sup>**

	Real GDP ln (y)		Real wage costs ln (wc/py)		Annual % rate of technical change (t)
	Short run	Long run	Short run	Long run	
B	0,08	1,0	-0,04	-0,50	0,5
DK	0,61	1,0	-0,35	-0,89	2,0
D	0,22	1,0	-0,10	-0,45	1,4
GR	0,48	1,0	-0,45	-0,86	2,4
E	0,67	1,0	-0,71	-1,06	2,0
F	0,12	1,0	-0,06	-0,50	1,9
IRL	0,40	1,0	-0,15	-0,38	2,9
I	0,10	1,0	-0,01	-0,09	1,9
NL	0,08	1,0	-0,03	-0,37	0,9
P	0,72	1,0	-0,80	-1,10	2,7
UK	0,12	1,0	-0,06	-0,48	1,4
USA	0,41	1,0	-0,21	-0,51	1,0
JA	0,11	1,0	-0,04	-0,32	1,8

<sup>1</sup> Number of employees in the private sector.**Table 4.2****Macroeconomic effects of an increase in labour productivity by 1%<sup>1</sup>**

	Year 1	Year 2	Year 3	Year 4	Year 5
<i>FR of Germany</i>					
Potential output	0,34	0,65	0,75	0,78	0,79
GDP	-0,05	0,24	0,45	0,42	0,48
Private consumption	-0,14	0,16	0,38	0,31	0,16
Private investment	0,09	0,80	1,30	1,10	0,89
Prices	-0,29	-1,10	-2,03	-3,00	-4,02
Nominal wages	-0,27	-0,78	-1,52	-2,47	-3,50
Employment	-0,29	-0,47	-0,46	-0,44	-0,45
Labour productivity	0,25	0,71	0,92	0,90	0,88
<i>United Kingdom</i>					
Potential output	0,26	0,67	1,08	1,36	1,53
GDP	-0,05	0,08	0,40	0,77	1,05
Private consumption	-0,09	0,21	0,93	1,84	2,70
Private investment	-0,01	0,19	0,65	1,12	1,51
Prices	-0,23	-1,27	-3,08	-5,42	-6,49
Nominal wages	-0,40	-1,54	-3,31	-5,50	-7,90
Employment	-0,15	-0,28	-0,28	-0,20	-0,09
Labour productivity	0,10	0,37	0,70	0,98	1,14

<sup>1</sup> Results are given in percentage deviations from the baseline.

the impact on GDP and its consumption and private investment components. In the first year the real effects of a rise in labour productivity are slightly negative, while the long-term impact is positive. This can be traced back to slow adjustment of supply and demand to changes in labour productivity. Negative price effects are already in evidence in the first year indicating that the short-term supply curve shifts outwards. Falling prices are, however, only partially the result of the productivity shock (and increased capacity) but also derive from a decline in wages associated with the decline in employment. This in turn indicates that the shift in supply (or the decline in prices) is not strong enough to stimulate demand or that demand reacts to increased supply only after a long time-lag. The latter is clearly visible from the decline in real consumption in the first year. Investment reacts less negatively in the UK and is above the baseline in Germany in the first year due mainly to increased profitability which offsets the negative accelerator effects. In subsequent years, prices remain below the benchmark as a result of an ongoing increase in productivity—which emerges gradually as a consequence of lagged adjustment of labour demand to new technological conditions—and a relative decline in nominal wage costs which is largely attributable to a diminution of the wage-price spiral and the decline in employment.

This process leads to a decline in prices of about 5 % below baseline after five years which corresponds to a reduction in the rate of inflation of about one percentage point per year on average. In interpreting these figures, one should keep in mind the real exchange rate assumption imposed on the simulation. By invoking this assumption, gains in competitiveness *vis-à-vis* the rest of the world are ruled out and therefore one stabilizing factor for price movements is no longer in operation. This assumption increases the speed with which wages react to price changes. With less than full indexation of import prices to the domestic price level, wages would decline more slowly and thereby lessen the effects of the interaction of wages and prices in lowering the price level overall.

As is evident from Table 4.2, the wage-price response is more pronounced in the United Kingdom than in Germany implying more consumption demand and consequently higher output effects. However, the rise in investment is strong both in Germany and in the United Kingdom, leading to a build-up of productive capacity or potential output which, in fact, exceeds absorption capacity. Falling prices exert continuous pressure on short-term supply to adjust in order to restore internal balance.

Another feature of the adjustment process is the actual increase in labour productivity. In the United Kingdom the autonomous increase in labour productivity by 1 % leads to

an actual increase of labour productivity of about 1 % after four years. Adjustment is faster in Germany where a close to 1 % *ex-post* increase is achieved within three years.

In summing up, one can conclude that positive shocks to labour productivity lead to increased GDP in the medium and long term. A prerequisite for this result is the responsiveness (in terms of price flexibility) of the supply curve to positive shocks in labour productivity. What is also important in determining this result is that increased supply generates sufficient demand. Both domestic demand components react positively. Investment is mainly driven by the accelerator effect as well as increased profitability while the positive response of private consumption is to a large extent due to the real wealth effect on consumer spending. Different inflation elasticities of consumption in Germany and the UK seem to explain to a large extent the differences in magnitude of the real effects in both countries.

## 5. The components of demand

### 5.1. Introduction

Although departing in many ways from traditional approaches, the essential role of the demand sector in Quest is to describe the IS curve inherent in a standard neoclassical-Keynesian macroeconomic framework. It fulfils this function using an aggregate consumption function, a disaggregated approach to investment and, as regards the trade balance, a three-way breakdown of imports while exports are determined largely by reference to the trade linkage block. Government consumption is not modelled explicitly but, from a policy viewpoint, may be set in nominal or real terms. While the model does not include a standard LM relationship, its role is proxied by whatever interest rate assumptions are made. In other words, monetary policy may be accommodating or non-accommodating. At any rate, given the sluggish nature of the economy's demand response to changes in interest rates, the IS curve and accordingly, the economy's demand curve are quite steep.

While aggregate demand may not vary much in response to interest rate changes, it must be borne in mind that GDP generally has lower variability than its components. In particular, the model should not be characterized as being investment inert in the sense that this problem has arisen in relation to other multinational models. On the contrary, the estimated investment elasticities suggest quite a degree of responsiveness to interest rate changes. However, an increase in investment is accompanied by a general improvement in

the economy and a rise in real wages follows in consequence. The resulting loss of competitiveness affects exports and consumption and this reduces GDP.

The importance of the demand sector is twofold. First, it includes the crucial investment in equipment equation which in determining the capital stock provides the link between the supply and demand blocks of the model, reflecting its neo-Keynesian character in so doing. This quality is further in evidence in so far as demand plays an essential role as an explanatory variable in the model through the deployment of accelerator-type mechanisms and in the explicit linking of the supply measures to the volume of GDP.

## 5.2. Consumption function

Theoretical approaches to modelling personal consumption have emphasized disposable income, the rate of inflation, interest rates and the rate of unemployment as the most important underlying factors. The importance of current income as a determinant of consumption has long been recognized but has been added to in the theoretical literature by the introduction of the permanent income hypothesis. In essence, this theory posits that consumption patterns are influenced by income levels to the extent that agents believe that their present level reflects the flow of income to them in future and therefore that it may take some time for income changes to be reflected in consumption patterns. In other words, transitory changes in income are less likely to be reflected in consumption behaviour than permanent ones. However, at the macroeconomic level, there are obvious difficulties involved in capturing the nature (permanent or temporary) of such changes; and the convention of using measured real disposable income (with a lag) to reflect permanent income is well established. The inclusion of the unemployment rate term can also be interpreted as a proxy for the effect of permanent income changes in so far as an increase in unemployment may lead to a lowering of expectations and a rise in precautionary saving.

The inclusion of the inflation rate (the 'real wealth effect') in the consumption function can be justified on theoretical grounds by reference to a number of factors. For example, an increase in the inflation rate has a 'real balance effect' in so far as money which is saved loses some of its value and results in a diminution of perceived wealth on the part of consumers who have savings. There may also be a short-term inflation impact depending on the structure of financial markets in the economy and the reaction of real interest rates to changes in inflation. In the long term, however, these factors can be expected to diminish in importance as awareness grows that the long-term position of the borrower

is unaffected by the rise in inflation. However, in order to capture this effect precisely, detailed data are required concerning the composition of wealth. The data constraints involved in measuring such effects preclude using a wealth variable directly in the equation.

Interest rates affect consumption in diverse ways according to economic theory. The first concerns the manner in which interest rate changes impinge on the wealth of bond holders. An increase in interest rates, while diminishing the wealth of existing bond holders, will enhance that of holders of interest-bearing money balances through an interest rate-induced real balance effect. Portfolio arrangements will also reflect higher saving in response to higher interest rates, which by corollary reduce the wealth of borrowers through making credit more expensive. The net effect of a change in interest rates on consumption therefore depends largely on the financial structure of the economy at microeconomic level.

The theory therefore indicates a positive disposable income coefficient, a negative inflation rate and unemployment rate effect and probably a small negative coefficient on the interest rate (although this variable has diverse influences). A somewhat different issue is now tackled. How does the specification used in the Quest consumption function compare with the theory, and are there country-specific features which provide some insight into the structure of the individual economies?

Modelling the consumption function in Quest is respectful of the theoretical framework outlined above, while the question of fitting the consumption function into the overall structure of the model is addressed in Section 2. Consumption in Quest has been measured in aggregate because in order to remain manageable, it is important that the model is kept to a reasonable size. The use of aggregate consumption functions is a feature of other multinational models as is the practice of modelling the equation on a per capita basis. Table 5.1 summarizes the estimated elasticities for the consumption function for each of the country models in Quest. The general form of the equation is as follows.

$$\ln(c/pop) = a_0 + a_1 \ln(c_{-1}/pop_{-1}) + a_2 \ln(y/pop) + a_3 pc + a_4 \Delta lur + a_5 rlr \quad (5.1)$$

where  $c$  = real private consumption  
 $pop$  = total population  
 $y$  = real disposable income  
 $pc$  = consumer prices  
 $lur$  = rate of unemployment  
 $rlr$  = real long-term interest rate

The models in general show a long-term elasticity with respect to disposable income of one, which confirms the expectation that consumption is a relatively constant proportion of income. This is of course a plausible steady state property of the model in view of the relatively large share of consumption in GDP. Inflation rate effects are found for nearly all of the models and unemployment rate effects for many of them, but it proved more difficult to find meaningful interest rate coefficients. This may be due in part to using a definition of real disposable income wherein interest payments on government bonds are included. However, the experience of other model-builders in trying to capture interest rate effects on consumption has not been any more encouraging in this regard.<sup>1</sup>

The overall pattern from the table is, therefore, one of conformity. Apart from the long term coefficient on disposable income of close to one in all cases, there is an appreciable wealth effect in all the country models with the exception of the Netherlands. However, this may be a reflection of the composition of its wealth which has a relatively high concentration in housing, a factor borne out by the presence of an interest rate effect in the consumption function. The wealth

effect is particularly marked in the United Kingdom and in Denmark in the short term, pointing up a structural feature of the Danish economy familiar to Danish economists by all accounts. Elsewhere, the unemployment rate and interest rate variables seem to compete as indicators of cyclical consumption effects. Apart from the Netherlands, which has both unemployment rate and interest rate effects, interest rate effects alone are found for Denmark, Spain, Greece and Portugal. Unemployment rate effects are found in Belgium, the Federal Republic of Germany, France, the United Kingdom, the United States and Japan. The coefficient on the unemployment rate term in the Japanese model is spectacularly high, which again reflects a structural feature of the Japanese economy, namely, that supply and demand for labour may be intimately related.

### 5.3. Government consumption and investment

As the standard macroeconomic approach to government consumption is to regard it as exogenous, it will suffice to give a very brief treatment of this element of GDP here. The underlying philosophy of the approach adopted has been to tailor the specification of government demand according to desired simulation properties for the model as a whole. Thus, for example, it is important to have a separate series for government employment because of the Phillips curve mechanism in the model.

<sup>1</sup> For example, the Mimosa modelling team report that interest rate effects are not present in five of its six country models. The results are presented in Mimosa (1990).

**Table 5.1**

#### Consumption function elasticities

	Disposable income (y/pop)		Inflation rate (pc)		Unemployment rate (%/yr)		Interest rate (rlr)	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B	0,22	1,0	-0,42	-1,88	-0,01	-0,03	-	-
DK	0,63	1,0	-0,71	-1,13	-	-	-0,45	-0,72
D	0,39	1,0	-0,41	-1,03	-0,01	-0,02	-	-
GR	0,30	1,0	-0,31	-1,04	-	-	-0,12	-0,40
E	0,23	1,0	-0,56	-2,42	-	-	-0,34	-1,44
F	0,15	1,0	-0,42	-3,03	-0,01	-0,04	-	-
IRL	0,60	1,0	-0,26	-0,43	-	-	-	-
I	0,10	1,0	-0,22	-2,39	-	-	-	-
NL	0,19	1,0	-	-	-0,82	-4,41	-0,08	-0,43
P	0,25	1,0	-0,66	-2,59	-	-	-0,35	-1,37
UK	0,11	1,0	-0,70	-6,53	-0,01	-0,12	-	-
US	0,18	1,0	-0,55	-3,26	-0,01	-0,05	-	-
JA	0,13	1,0	-0,46	-3,64	-2,50	-19,76	-	-

Government consumption and investment are important components of aggregate demand and may be set exogenously in Quest either in real or in nominal terms. For simulation purposes, consumption has been broken down into its wage and non-wage elements while investment consists of construction and equipment categories which, at present, influence the model in an identical manner but which allow for future development in the direction of endogenization.

## 5.4. Private investment

At the theoretical level, investment demand is described as a function of such variables as interest rates, demand and the profit rate. The interest rate may be taken to be representative of the cost of capital while demand effects in a Keynesian approach may be taken account of through the presence of an accelerator term. Elegant derivations of the investment function in conjunction with other factor inputs from an underlying production function have been idealized in the literature. Other approaches have emphasized the diversity of investment demand, its different elements being dependent on factors with widely-varying behavioural characteristics. Thus strong arguments exist for a distinction to be drawn between residential and business investment with the former relying on population factors and private saving while the latter is viewed in the context of the theory of the firm.

The modelling of investment demand in Quest has acknowledged the need for such a distinction. Four categories of private investment have therefore been identified as behavioural variables, namely, equipment, structures, housing and inventories. In arriving at this subdivision, it was recognized that investment in equipment, or, more importantly, the capital stock corresponding to it, was a principal force in determining the productive capacity of the economy. Investment in structures is a related activity but one which is characteristically more inert than investment in equipment, while housing investment, because it is social by nature and has therefore been subject to government efforts aimed at regulation, deserves to be singled out also. Investment in inventories is treated separately for a number of reasons. It is first of all motivated by somewhat different forces than those underlying fixed capital formation. For example, it is possible to distinguish transactions, precautionary and speculative motives in stockbuilding behaviour to capture a lack of synchronization between production and final use or the use of inventories as a buffer stock mechanism. Moreover, data is readily available on investment in inventories although not in disaggregated form (an ideal breakdown might distinguish between stocks of finished goods, work in progress and stocks of raw materials). However, as these

data are usually a residual on the expenditure side of the national accounts, measurement error frequently hinders the search for plausible coefficients.

### 5.4.1. Investment in equipment

As regards the investment in equipment equation,<sup>1</sup> the specification ultimately agreed on is an adaptation of an accelerator-type/relative-cost/profit model. The accelerator term reflects the desire of firms to adjust their capital stock to perceived demand. In addition, this feature neatly captures the higher cyclical variability of investment by comparison with the other components of GDP. The cost of capital is accommodated in the specification by the inclusion of a term for the real interest rate while profitability is represented by the share of the gross operating surplus in GDP corrected for the capacity utilization rate. In an environment of perfect capital markets, where borrowing and lending firms share the same information set concerning the profit opportunities corresponding to investment projects, capital costs may be regarded as the single most important factor determining investment. The interest rate in this sense plays the crucial role of setting a limit to which capital can be efficiently allocated to improving productive capacity. However, to the extent that the capital market is imperfect, firms may become liquidity-constrained, thus being forced to finance large parts of their investment from retained profits. This is one element of the rationale for the inclusion of the profitability term in this equation, the other being the rate of return element in profits. The separation of the investment demand function from its underlying production function is not what the theory suggests but attempts to model a factor demand system seemed to confirm that because of uncertainty, adjustment costs and factor rigidities, a more practical approach is warranted for operational purposes.

Hence, the equation specification has the following form

$$\ln(i_e) = a_0 + a_1 \ln(i_{e-1}) + a_2 \Delta \ln(yf) + a_3 rlr + a_4 \ln(pro) + a_5 \ln(k_{-1}) \quad (5.2)$$

where  $i_e$  = real private investment in equipment  
 $yf$  = real final demand  
 $rlr$  = real long-term interest rate  
 $pro$  = share of the gross operating surplus in GDP (adjusted for the capacity utilization rate)  
 $k$  = capital stock of equipment

Table 5.2 presents the estimation results in summary form.

<sup>1</sup> Background material on the derivation of the investment function is contained in P. Bekx *et al.* (1989) and in M. Catinat *et al.* (1987).

The most striking feature of the estimation results is their remarkable similarity both in terms of robustness of the specification used and also in the range of estimates derived. An interesting general finding is that the more open the economy, the more important the profitability term. This is very much in accordance with recent approaches to small open economies. Bradley and FitzGerald (1988) stress that the close integration of the supply side of the Irish economy within the wider OECD economy, contingent on the investment activities of multinational companies, implies that industrial competitiveness is an important determinant of output. This view is consistent within the context of the establishment in Quest of the link from this equation to the supply side. Overall, the results indicate that as a main pillar in the construction of the various models, the investment in equipment equations are solidly based.

#### 5.4.2. Investment in construction

In principle, the two components of investment in construction are separated in Quest but as Table 5.2 indicates, the distinction could not be sustained in all cases. This resulted in some instances from difficulties in obtaining a breakdown of data along the lines required, while in others even though

the data was available it proved impossible to obtain suitable estimates of the coefficients when separate equations were specified. Where these problems were encountered, the solution arrived at was to identify the best categories of data available and to estimate individual equations on these while grouping the remaining categories of fixed investment. Thus, for Japan and Spain, private investment in equipment and structures is grouped together and housing investment is estimated separately while in the case of the Italian and Danish models, total construction and equipment are estimated. In the Portuguese model, all three categories are included in a function specified as best as possible along the lines of the investment in equipment equation.

Leaving aside data problems and returning to the question of theoretical approaches, a principal strand in the approach to the determination of investment in structures takes the position that in some sense it is complementary to investment in equipment but that the links to the supply side of the economy are less direct. Thus, the investment in equipment variable is itself an explanatory variable in the investment in structures equation along with interest rates and the profit share in GDP (which proxies company liquidity and the rate of return on investment).

**Table 5.2**

**Real private investment in equipment — estimated elasticities**

	Real final demand ( $\Delta \ln(yf)$ )		Real interest rates ( $r/r$ )		Profitability $\ln(pro)$		Capital stock $\ln(k)$	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B <sup>1</sup>	1,51	8,98	-0,36	-2,59	0,13	0,79	0,0	0,60
DK	1,40	1,75	-2,05	-2,56	0,15	0,18	—	—
D	0,93	8,22	-0,19	-2,93	0,04	0,38	0,0	0,98
GR	1,63	2,17	-0,34	-0,45	0,46	0,61	—	—
E <sup>2</sup>	1,40	1,75	-0,55	-0,68	0,61	0,76	0,0	0,06
F	1,75	9,91	-0,15	-2,64	0,01	0,66	0,0	0,66
IRL	2,54	12,24	-1,03	-4,96	0,69	3,33	0,0	0,09
I	0,84	8,10	-0,15	-1,44	0,17	1,01	0,0	1,20
NL	1,37	4,61	-0,16	-2,90	0,14	1,95	0,0	0,20
P <sup>3</sup>	0,90	1,17	-0,40	-0,52	0,22	0,29	0,0	0,09
UK	0,83	6,25	-0,03	-1,87	0,02	0,42	0,0	1,03
US	0,96	13,42	-0,18	-1,85	0,06	0,56	0,0	1,08
JA <sup>4</sup>	1,55	6,20	-0,09	-0,76	—	—	0,0	0,20

<sup>1</sup> The Belgian version of this equation uses nominal rather than real interest rates.

<sup>2</sup> The Spanish model does not have a separate equation for investment in equipment. The results reported here relate to private non-residential investment.

<sup>3</sup> The Portuguese results relate to total private investment.

<sup>4</sup> The Japanese model includes a separate equation for private non-residential investment in which the nominal rather than the real interest rate is an explanatory variable.

It is noted above that housing investment is similar to the consumption function as regards underlying determinants, for example, savings (as a function of disposable income), interest rates, population, construction prices, wealth and less tangible factors such as expectations and uncertainty. Housing investment decisions may be viewed in this sense as a two-stage process. Long-term factors such as population growth and wealth determine the optimal stock of dwellings which, in conjunction with short-term influences such as interest rates, inflation and the level of unemployment, determine the current level of housing investment. In addition, it can be assumed that government policy in this area (which is usually deployed in the form of tax expenditures or capital transfers) is also of crucial importance. In practice, Quest combines long-term and short-term processes by specifying only one equation for private investment in housing because of data constraints in relation to constructing a series for the housing stock. On the subject of data constraints, it should also be borne in mind that there is no separation of residential investment by households from that carried out on the part of enterprises. The typical housing investment function in the Quest model therefore includes a population variable, the inflation rate of investment prices, GDP growth (to capture expectations) and the real long-term interest rate. In one case, however, government policy effects are captured through the use of specially constructed variables. A similar 'institutional' effect is achieved in the investment in structures equation in the Dutch model through the use of an interest rate variable which is corrected for tax allowances on interest costs.

The precise form of the equation for private investment in structures is

$$\ln(is) = a_0 + a_1 \ln(is_{-1}) + a_2 \ln(ie) + a_3 rlr + a_4 \ln(pro) \quad (5.3)$$

where *is* = real private investment in structures  
*ie* = real private investment in equipment  
*rlr* = real long-term interest rate  
*pro* = gross operating surplus expressed as a percentage of GDP

Table 5.3 describes the results for those countries for which this relationship is estimated.

The estimated parameters confirm the hypothesis that business investment of this nature is relatively inert by comparison with investment in equipment. Indeed, the latter turns out to be the most persistent influence on the dependent variable in a cross-country comparison of the models. Real interest rates form quite a strong influence in many cases but elasticities could not be determined for the United Kingdom, Greece and the United States. Profitability effects proved even more difficult to find with only the Federal Republic of Germany, France, Greece and the United States yielding meaningful estimates. However, given the longer-term nature of this type of investment it was perhaps to be expected that difficulties would arise in trying to forge a direct link to profitability. At any rate, it can be argued that the basic stance of the model, namely, that investment in structures

**Table 5.3**

**Real private investment in structures — estimated elasticities**

	Investment in equipment (ln(ie))		Real interest rates (rlr)		Profit share ln(pro)	
	Short run	Long run	Short run	Long run	Short run	Long run
B	0,15	1,31	—0,16	—4,10	—	—
DK <sup>1</sup>	0,22	0,39	—2,67	—4,72	—	—
D	0,25	0,69	—0,02	—2,25	0,29	0,81
GR	0,61	0,61	—	—	0,59	0,59
F <sup>2</sup>	0,13	0,58	—0,03	—10,08	0,23	1,03
IRL	0,21	0,87	—2,48	—10,25	—	—
I <sup>1</sup>	0,18	0,48	—0,01	—1,77	—	—
NL <sup>3</sup>	0,38	0,96	—0,05	—3,49	—	—
UK	0,14	0,76	—	—	—	—
US	0,06	0,30	—	—	0,21	1,04

<sup>1</sup> The Danish and Italian models combine structures and housing investment data. The estimated equation therefore describes construction investment demand.

<sup>2</sup> In the French model, the interest rate term is expressed as a quarter of the annual rate, and compares therefore with, for example, the German estimate multiplied by a factor of 4.

<sup>3</sup> The nominal interest rate is adjusted to take account of institutional features in the tax system in the Dutch model.



should be complementary to investment in equipment, is sustained by the estimation results.

The private housing investment equation is generally of the form

$$\ln(ih) = a_0 + a_1 \ln(ih_{-1}) + a_2 \ln(pop) + a_3 \dot{pi} + a_4 \dot{y} + a_5 rlr \quad (5.4)$$

where  $ih$  = real private housing investment  
 $pop$  = total population  
 $pi$  = total investment price  
 $y$  = real GDP  
 $rlr$  = real long-term interest rate

The estimation results are described in Table 5.4 with additional explanatory variables as they appear in certain of the models included from the fifth column onward.

The table of results in this case indicates a much wider range of estimates for variables common to the specification of the respective models than was the case in the equations presented earlier. This in part is due to the reality that in some countries, much of private wealth is concentrated in housing whereas in others there is no marked trend toward house ownership. Nevertheless, there is a discernible pattern in the results in so far as a broad sweep of GDP/disposable income effects can be traced across countries with inflation and interest rate effects also prevalent. While this should ensure a degree of comparability between the models in simulation,

**Table 5.4**

**Real private investment in housing — estimated elasticities**

	Population ( $\ln(pop)$ )		Inflation ( $\dot{pi}$ )		Annual GDP growth ( $\dot{y}$ )		Interest rates ( $rlr$ )		Unemployment rate ( $lur$ )	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B			-0.40	-1.82			-0.53	-11.98		
D	0.44	2.21	-0.25	-1.26	0.37	1.86	-0.06	-4.37		
GR										
E										
F <sup>1</sup>	3.24	6.98	-0.11	-0.58			-0.73	-3.94	-0.02	-0.05
IRL <sup>2</sup>			-0.25	-0.37			-1.31	-1.95		
NL <sup>3</sup>	5.77	5.77			2.02	2.02			-0.03	-0.03
UK	2.00	10.14	-0.28	-2.13	0.50	6.29	-0.44	-3.35		
US	1.68	2.95	-0.54	-0.95	1.49	2.62	-0.04	-0.02		
<hr/>										
	Savings ( $\ln(y-c)$ )		Housing transfers rate ( $rg$ )		Real disposable income ( $\ln(yd)$ )		Investment in structures ( $\ln(is)$ )		Final demand ( $\Delta \ln(yf)$ )	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B					0.67	3.05				
D										
GR							0.62	1.00	2.43	3.91
E										
F <sup>1</sup>	0.06	0.32								
IRL <sup>2</sup>			0.08	0.12	1.20	1.78				
NL <sup>3</sup>										
UK										
US										

<sup>1</sup> In the interest rate term in the French equation, the scale effect is smaller by a factor of 4 relative to the other models.

<sup>2</sup> The Irish model includes a dummy variable to take account of the very sharp increase in housing transfers in 1987.

<sup>3</sup> In the Dutch model, the growth rate term is expressed as growth relative to the previous quarter.

future work may need to focus on the question of the influence of institutional factors on housing investment with a view to narrowing down the specification so that a clearer picture of structural differences between countries may emerge.

### 5.4.3. Investment in inventories

It has already been pointed out that while it would be theoretically appealing in modelling inventories investment to be able to distinguish between stocks of finished goods, work in progress and stocks of raw materials, national accounts data do not facilitate such an approach by providing a breakdown. Indeed, the data which are available are themselves determined residually in most instances and therefore make meaningful estimation difficult. However, by focusing on the transactions and precautionary demand for stocks, a satisfactory solution was arrived at in the case of the Quest model. In the specification, the existing stock of inventories captures the impact of precautionary stockbuilding while the capacity utilization rate which, in principle, could be positively or negatively signed, is positive in this case thereby reflecting the effect of work in progress. The final demand/GDP variable acts as a vehicle for transactions demand effects on inventory investment.

Table 5.5 summarizes the results of the estimation procedure. The table highlights some of the difficulties arising from

measurement error in the data. There is evidence in some of the models of the slow speed of adjustment to the lagged stock of inventories which characterizes econometric work in this area. Interest rate and capacity utilization rate effects are present in the majority of the structural models which imply interesting behavioural characteristics in simulation.

The investment in inventories equation is of the form

$$ii = a_0 + a_1 ii_{-1} + a_2 ki_{-1} + a_3 rsr + a_4 uc + a_5 yf \quad (5.5)$$

where  $ii$  = real investment in inventories expressed as a percentage of real final demand or GDP  
 $ki$  = stock of inventories expressed as a percentage of real final demand or GDP  
 $rsr$  = real short-term interest rate  
 $uc$  = capacity utilization rate  
 $yf$  = real final demand net of changes in inventories

### 5.5. Imports

In the individual country models (the Quest structural models), import volumes and export prices are treated as endogenous variables. On the other hand, import prices and export volumes are determined in the trade linkage block.

**Table 5.5**

**Real investment in inventories — estimated coefficients<sup>1</sup>**

	Stock of inventories		Interest rate		Capacity utilization rate		Final demand	
	(ki)		(rsr)		(uc)		(yf)	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B	0,0	-0,02	-0,00	-0,01	0,13	0,58	—	—
DK	—	—	-0,06	-0,06	—	—	0,12	0,20
D	0,0	-0,02	-0,01	-0,19	0,08	0,10	—	—
GR	—	—	-0,12	-0,12	0,17	0,17	0,12	0,12
F <sup>2</sup>	0,0	-0,21	-0,41	-6,03	0,31	0,55	0,13	0,23
IRL	—	—	-0,05	-0,07	—	—	0,11	0,15
I	—	—	-0,01	-0,13	0,24	0,31	—	—
NL	0,0	-0,04	—	—	0,15	0,15	0,12	0,12
UK	0,0	-0,06	-0,00	-0,11	0,06	0,09	—	—
US <sup>2</sup>	0,0	-0,10	-3,73	-71,89	0,27	0,43	0,05	0,08
JA	0,0	-0,08	—	—	0,05	0,21	—	—

<sup>1</sup> As inventories are exogenous in the Spanish and Portuguese models, these countries are excluded from the table.

<sup>2</sup> These models have the level of inventory changes as the dependent variable.

The trade linkage block, however, only covers bilateral trade in goods. The structural models thus include in some cases an aggregate merchandise export function and a behavioural equation in all cases for exports of services. The latter, however, is simply designed so that whatever pattern of trade in goods emerges, it will be mirrored by trade in services. The focus of this discussion will therefore be on the modelling of import demand in Quest whose final use (apart from its role in the determination of output) will be as an exogenous input into the bilateral trade flow model. Imports of goods are broken down between energy and non-energy in order to facilitate proper handling of oil-price shocks within the model.

### 5.5.1. Non-energy imports

As regards non-energy goods, final demand, relative prices and the degree of capacity utilization (included in order to capture the effect of excess demand in the home market) combine to form a standard theoretically based approach.

$$\ln(mn) = a_0 + a_1 \ln(mn_{-1}) + a_2 (\ln(z.yf) - a_1 \ln(z_{-1} . yf_{-1})) + a_3 (1 - a_1) \ln(pmn) + a_4 (uc - a_1 uc_{-1}) \quad (5.6)$$

where  $mn$  = real non-energy imports  
 $z$  = trendwise trade integration variable, measuring the trend in the import share of GDP

$yf$  = real final demand  
 $pmn$  = price of non-energy imports relative to final demand  
 $uc$  = capacity utilization rate

This equation is crucial to the operation of the current version of the model. The specification used is pretty robust albeit that some of the country models do not include a capacity utilization effect. The Spanish model is something of an outlier as regards its high import propensity with respect to changes in final demand. This, however, is a common feature of economies undergoing a new phase of openness following a long period of protection from outside competition. At a more general level, it should be borne in mind for multiplier analysis that the final demand variable is corrected for trade integration effects implying smaller leakages than would otherwise be the case. This is because import propensities are estimated on a base which already includes the trend element in imports. Overall, however, the range of the results is certainly within the sort of margin expected which is encouraging from the viewpoint of carrying out simulations on the different models.

### 5.5.2. Imports of energy

In order to capture the essential features of oil-price shocks it was necessary to adopt separate methods for handling oil

**Table 5.6**

**Real imports of non-energy goods — estimated elasticities**

	Real final demand ( $\ln(z.yf)$ )		Relative prices ( $\ln(pmn)$ )		Capacity utilization ( $uc$ )	
	Short run	Long run	Short run	Long run	Short run	Long run
B	1,19	1,19	-0,18	-0,30	0,68	0,68
DK	0,79	0,79	-0,50	-0,50	—	—
D	1,24	1,24	-0,21	-0,36	0,21	0,21
GR	0,88	0,88	-0,91	-0,91	—	—
E <sup>1</sup>	0,96	2,18	-0,44	-1,00	—	—
F	1,20	1,20	-0,22	-0,70	0,68	0,68
IRL	1,30	1,30	-0,13	-0,33	1,29	1,29
I	1,14	1,14	-0,25	-0,33	0,95	0,95
NL <sup>2</sup>	0,93	0,93	-0,49	-0,85	0,86	0,86
P <sup>1</sup>	0,97	1,15	-0,86	-1,02	—	—
UK	1,18	1,18	-0,18	-0,34	0,67	0,67
US	1,61	1,61	-0,50	-1,00	0,42	0,42
JA	1,00	1,00	-0,37	-0,73	—	—

<sup>1</sup> In the Spanish and Portuguese models, the short- and long-term demand elasticities are not constrained to be equal in these models.

<sup>2</sup> The Dutch model simply takes the level of the capacity utilization rate as a right-hand side variable.

imports depending on whether a country is an oil producer or not. The approach in Quest is straightforward when the country is not an oil producer. In this case, real imports of energy are modelled as a function of final demand and energy import prices relative to final demand prices. Where the country is an oil producer, energy demand is modelled as real apparent domestic petroleum consumption in a function where real output and the relative price of energy imports are the explanatory variables. Exports of energy are in turn a function of exogenous energy output. The precise formulation is:

#### Non-energy producers

$$\ln(me) = a_0 + a_1 \ln(me-1) + (1 - a_1) \ln(yf) + a_2 \ln(pe) \quad (5.7)$$

where  $me$  = real imports of energy  
 $yf$  = real final demand  
 $pe$  = energy import prices relative to final demand prices

#### Energy producers

$$\ln(ce) = a_0 + a_1 \ln(y) + a_2 (pe) \quad (5.8)$$

$$\ln(xe) = a_0 + a_1 \ln(ye) \quad (5.9)$$

$$me = ce + xe - ye \quad (5.10)$$

where  $ce$  = real apparent consumption of energy  
 $y$  = real GDP  
 $pe$  = real energy import deflator relative to the GDP deflator

$xe$  = real exports of energy

$ye$  = real energy output

Table 5.7 summarizes the estimates for the individual country models.

The table bears out the underlying structural vulnerability in the developed economies to oil-price shocks. Inelastic demand in the short term combined with low short- and long-term price elasticities mean that the flexibility which would provide the required breathing space for adjustment

**Table 5.7**

#### Real imports of energy — estimated elasticities

	Real final demand ( $\ln(yf)$ )		Relative prices ( $\ln(pe)$ )	
	Short run	Long run	Short run	Long run
B	0,29	1,00	-0,06	-0,20
DK	0,39	1,33	-0,21	-0,70
D	0,13	1,00	-0,00	-0,38
GR	0,07	1,00	-0,25	-1,90
E	0,42	1,00	-0,07	-0,17
IRL	0,27	1,00	-0,15	-0,55
I <sup>1</sup>	1,54	1,54	-0,09	-0,13
P	0,11	1,00	-0,57	-0,50
US <sup>2</sup>	1,58	1,58	-0,10	-0,37
JA <sup>1</sup>	0,82	0,82	-0,01	-0,11

<sup>1</sup> The Italian and Japanese models also include a time trend with a coefficient of -0,02 for the Italian model and -0,01 for the Japanese model.

<sup>2</sup> The US model has real energy import demand specified in growth rate terms.

**Table 5.8**

#### Energy producers (energy consumption and export elasticities)

	Real GDP ( $y$ )		Relative prices ( $pe$ )		Oil output <sup>1</sup> ( $ye$ )	
	Short run	Long run	Short run	Long run	Short run	Long run
F	0,78	0,78	-0,02	-0,03	—	—
NL	1,00	1,00	-0,03	-0,35	0,90	0,60
UK	0,34	1,34	-0,14	-0,62	0,48	1,03

<sup>1</sup> The figures in this column are of course export elasticities. The first two columns give consumption elasticities. France is assumed to produce energy only for domestic purposes.

to take place is as yet unavailable to the major oil-importing countries. How do the energy producers fare?

The results in Table 5.8 suggest a somewhat greater degree of flexibility on average than in the case of the oil-importing countries, particularly for the UK economy for which the energy sector model is best articulated in any case.

**Table 5.9**

**Real imports of services — estimated elasticities**

	Real final demand (ln(yf))		Relative prices (ln(pms))	
	Short run	Long run	Short run	Long run
B	1,04	1,78	-1,19	-2,04
DK	0,16	1,00	-0,13	-0,77
D	0,64	1,70	-0,45	-1,20
GR	0,52	1,00	-0,55	-1,06
E	0,74	1,00	-0,12	-0,16
F <sup>1</sup>	1,63	1,63	-0,90	-0,90
IRL	0,37	1,45	-0,20	-0,78
I	1,12	2,00	-0,08	-0,15
NL	0,44	2,51	-0,06	-0,35
P	0,81	1,00	-0,61	-0,75
UK	0,34	0,99	-0,15	-0,44
US	1,14	1,14	-1,22	-1,22
JA <sup>1</sup>	1,04	1,04	-0,47	-0,47

<sup>1</sup> The French and Japanese equations have the constraint imposed that the short- and long-term elasticities are equal.

### 5.5.3. Imports of services

The derivation of the equation for services imports demand shadows that of import demand for non-energy goods, namely, by including real final demand and relative prices as explanatory variables in a straightforward application of the theory.

Table 5.9 summarizes the results for the individual country models for which the general specification of this equation is

$$\log(ms) = a_0 + a_1 \ln(ms-1) + a_2 \ln(yf) + a_3 \ln(pms) \quad (5.11)$$

where  $ms$  = real imports of services  
 $yf$  = real final demand  
 $pms$  = price deflator of imports of services relative to the final demand deflator

Although the heterogeneity of factor services would imply that numerous effects be accommodated within the specification of the equation, some simplification had to be made on the grounds of practicality. Thus, for example, there are no trade integration and capacity utilization effects here. Allowing for this, the results are by and large similar across countries. Bearing in mind that the basis for the approach adopted was that imports of services would relate largely to imports of merchandise, the comparability of these results to those for merchandise imports confirm this procedure.

## 6. Wages and prices

### 6.1. Introduction

The wage-price block determines the primary income distribution and the inflation rate. The block consists of an equation describing the price-setting behaviour of firms and an equation summarizing the outcome of wage negotiations. In the equation for value-added prices it is assumed that prices are mainly based on unit labour costs plus a long-term constant mark-up proportional to these costs, which represents the remuneration of capital.

The equation for the determination of the nominal consumption wage, i.e. the wage rate after the deduction of employers' social security contributions, assumes cost-of-living adjustments and wage increases less than proportional to improvements in labour productivity. Moreover, wages are influenced by the so-called Phillips curve mechanism. According to this mechanism, there exists a negative trade-off between the rate of change in money wages and both the level and the change in the unemployment rate. These two equations, more extensively described in Section 6.2, are linked to each other with the help of two identities, one which defines the cost of living using the value-added price, indirect taxes and the import price, and the other defines the nominal wage rate to be paid by firms on the basis of the consumption wage rate and employers' taxes on wages. The price equations for

the other GDP components have a similar structure as the equation for the cost of living. The export price equation has a somewhat different structure, and is described separately in Section 6.2. Section 6.3 examines the long-term properties of the wage-price system. The dynamics of the simultaneous wage-price system are discussed in Section 6.4 using the United Kingdom and Germany as examples.

## 6.2. The price and wage equations

Price equations are generally derived from the theory of the firm in which three factors likely to play a role in price setting are distinguished, namely, costs, demand and competitive conditions. The relative impact of these factors differs in the short and long term.

Labour costs form the only explicit cost factor in the price equation. The two components of labour costs are labour costs per head and labour productivity. It is assumed that increases in labour costs per head will be fully passed on to buyers of goods and services without much delay, meaning that it is practically impossible to increase real wages by raising nominal wages. By comparison with labour costs per head, changes in labour productivity are transmitted relatively less forcefully to (opposite) changes in prices. Moreover, the size of the long-term effect of productivity on prices varies considerably between the countries, being especially large in Germany, Belgium, Portugal and Japan. The speed of the response to actual changes in labour productivity is indicative of the extent to which price behaviour reacts to short-term movements in productivity as opposed to the trend. A slow response can be interpreted as evidence of reduced competition. Technically this response emanates from two sources. Firstly, changes in labour productivity affect prices directly. The mean lag of this first effect is short, about one quarter on average. Secondly, these changes in productivity affect prices via a long-term constraint regarding the labour share in value added. This constraint is invoked by including a so-called error correction mechanism, which keeps the mark-up over labour costs constant in the model. The more important the direct effect the less relevant is the role of the error correction mechanism. A strong direct effect increases the speed of adjustment of prices to productivity change. In other words, the model relies on an assumed long-term homogeneity of prices with respect to labour costs. However, the mark-up may be subject to long-term shifts caused by changes in the cost of capital, changes in the corporate tax system or in the degree of competitiveness of the economy. These shifts are not endogenous in the model.

An important determinant of short-term movements in prices is the level of excess demand. There are a number of

mechanisms included in Quest for the purpose of maintaining internal balance. These are:

- producing at above or below normal levels of utilization of the capital stock,
- changes in stocks of goods,
- price changes,
- an increase in import demand.

The utilization rate of the capital stock can be interpreted as a proxy of the degree of demand-side disequilibrium. This disequilibrium indicator appears to be a strong influence on prices in Italy and the Netherlands.

A second temporary influence on the mark-up stems from the direct effect of import prices. In order to maintain their short-term competitive position, firms tend to moderate value-added prices at the expense of profit margins in reaction to increases in import prices. The Quest model does not allow for a direct **permanent** reaction in domestic prices to import price changes resulting from price competition from abroad on the domestic market.

It might be useful to summarize the various effects on the mark-up at this stage. Temporary deviations from the normal mark-up for the remuneration of capital are possible on the basis of unusual demand conditions, reflected in changes in the capacity utilization rate, or changes in competitive conditions. The latter effect arises from the influence of import prices on mark-up behaviour. These are short-term effects. In the long term, of course, all factors are variable and the capital stock itself may be expanded. Moreover, full feed-through of changes in labour costs and the error correction mechanism are characteristic of long-term adjustment.

In Table 6.1 the elasticities for the value-added price function for each of the country models are presented. The general form of the equation is as follows

$$\dot{p} = a_0 + a_1 wc + a_2 upro + a_3 uc + a_4 (pm - (L)pm) + erc \quad (6.1)$$

where  $p$  = product price  
 $wc$  = nominal wage  
 $uc$  = capacity utilization rate  
 $upro$  = labour productivity  
 $pm$  = import price  
 $erc$  = error correction mechanism

It has already been mentioned that the definitions of the price deflators for the components of GDP are derived from

**Table 6.1****Value-added price function elasticities**

	Change in wage cost per head (wc)		Change in labour productivity (upro)		Change in capacity utilization (uc)		Import price change deviation <sup>1</sup> (pm)	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B	0,50	1,00	-0,47	-0,93	-0,20	0,40	—	—
DK	0,80	1,00	-0,12	-0,12	0,09	0,09	0,00	0,11
D	0,33	1,00	-0,30	-0,90	0,15	0,15	—	—
GR	0,64	1,00	-0,43	-0,43	0,50	0,50	0,21	0,21
E	0,76	1,00	-0,49	-0,49	0,15	0,15	-0,05	-0,05
F	0,50	1,00	-0,15	-0,30	0,15	0,15	-0,04	-0,04
IRL	0,89	0,89	-0,45	-0,45	—	—	—	—
I	0,34	1,00	-0,15	-0,37	0,00	0,23	-0,06	-0,06
NL	0,34	1,00	-0,12	-0,36	0,00	0,57	-0,08	-0,08
P	0,64	1,00	-0,70	-0,70	0,15	0,15	—	—
UK	0,34	1,00	-0,10	-0,31	0,00	0,09	-0,30	-0,30
US	0,40	1,00	-0,20	-0,50	0,04	0,04	-0,03	-0,03
JA	0,33	1,00	-0,40	-0,80	0,00	0,32	—	—

<sup>1</sup> This variable is zero in the long run except in the Danish and Greek models where it is not expressed as a deviation from a trend.

the value-added price, import prices and indirect taxes. As an example, the simplified general form of the cost of living deflator is given below (the exogenous indirect tax component is left out here for clarity of exposition).

$$p\dot{c} = (\text{open})p\dot{m} + (1 - \text{open})\dot{p} \quad (6.2)$$

where  $pc$  = consumption price  
 $pm$  = import price  
 $p$  = value-added price  
 $\text{open}$  = trend of openness of the economy (import share)

The trend of openness variable is a measure of the weight of import prices in determining domestic inflation. Table 6.2 gives an overview of the degree of openness of all the countries in Quest. In contrast to domestic markets, where foreign competition has only a temporary impact on prices, Quest assumes that in export markets foreign competition has a permanent influence on prices. While different export prices for goods, services and energy exist in the model, only the export price for goods is explained by a behavioural equation. The other two are endogenized via a recursive system of definitions (see Annex 2). The elasticities of the export price equation are presented in Table 6.2. The last term in Equation 6.3 models the permanent influence of foreign competition on export prices.<sup>1</sup>

$$p\dot{x} = (\text{open})p\dot{m} + (1 - \text{open})\dot{p} + a_1(p\dot{c} - w\dot{p}) \quad (6.3)$$

where  $px$  = export price of goods  
 $pc$  = consumption price  
 $p$  = product price  
 $wp$  = competitors' price in local currency

**Table 6.2****Openness measure and foreign competition elasticity — export price function**

	Openness <sup>1</sup> (%)	(pc - wp)	
		Short run	Long run
B	40,9	-0,14	-0,48
DK	25,4	-0,19	-0,19
D	23,1	-0,07	-0,14
GR	22,9	-0,73	-0,73
E	17,2	—	—
F	19,1	-0,19	-0,38
IRL	38,1	-0,12	-0,12
I	16,3	-0,31	-0,61
NL	37,1	-0,41	-0,81
P	26,1	—	—
UK	22,7	-0,16	-0,31
US	12,1	-0,18	-0,36
JA	11,4	-0,28	-0,55

<sup>1</sup> The index of competitors' prices is double-export weighted and is calculated in the trade linkage block of the model.

<sup>1</sup> Defined as the ratio of imports to final demand, the table gives most recent value in the Quest database.

The equation for consumption wages for the total economy is based on a bargaining model, which includes elements of the Phillips curve mechanism. The equation can also be viewed as an augmented Phillips curve.<sup>1</sup>

It is assumed that employers and employees bargain on nominal wages only. Representatives of employees are constrained in their wage bargaining stance by employment considerations. Employers are constrained by considerations of competitiveness, especially on foreign markets. These constraints overlap each other to a great extent and are reflected in the equation by the inclusion of both the level and the first difference in the unemployment rate and a terms of trade variable in the wage equation. It is assumed that at a normal unemployment rate the negotiations will lead to a stabilization of the terms of trade. The broad underlying principle is that the terms of trade are stable so long as consumption prices and output prices have the same inflation rate. In Quest this is modelled through a full indexation of wages with respect to consumption price increases (corrected for losses in the terms of trade). The productivity term in the wage equation does not lead to inflation because the size of the positive productivity effect on wages is restricted to the size of the negative productivity effect on prices. Nominal wages—after cost of living adjustments—are therefore unaffected by labour productivity changes.

Wages play a role in restoring labour market equilibrium only in so far as the unemployment rate deviates from the normal rate. Section 6.3 further investigates the issue of the normal level of unemployment and tries to interpret its meaning. The relationship between the wage rate and excess demand or deficiency of demand for labour was established by Phillips in 1958. He found empirical support for his assessment that the rate of change of money wage rates could be explained by the level of unemployment and the change in the unemployment rate.<sup>2</sup>

In Quest, while the negative impact of the level of unemployment is present across all the countries, the effect is not very substantial in most models. It is, however, exceptionally large in Japan. It is remarkable that the negative effect of changes in the unemployment rate is much larger than the corresponding level effect. A possible explanation for this result is the imperfect functioning of the labour market, which gives rise to a considerable level of 'natural unemployment'. This gives support to the so-called hysteresis theory, which states that the long-term unemployed are no longer recognized as potential candidates for employment.

In Table 6.3 the elasticities for the wage function for each country model are given. The general form is as follows

$$\dot{w}r = a_0 + a_1 \dot{p}c + a_2 (\dot{p}c - \dot{p}) + a_3 \dot{u}pro + a_4 \text{ lur} + a_5 \Delta \text{ lur} \quad (6.4)$$

where  $wr$  = nominal wage  
 $pc$  = consumption price  
 $p$  = value-added price  
 $upro$  = labour productivity  
 $\text{lur}$  = unemployment rate

### 6.3. Long-term properties of the wage-price block

In this section the long-term properties of the wage-price block are discussed, using the equations for the value-added price, the consumption price and wages as a starting point (see Equations 6.1, 6.2 and 6.4).

Given the value of one for the long-term wage elasticity in the price equation and the long-term price elasticity in the wage equation, the system can be written as follows

$$\dot{p} = \dot{w}c - a_1 \dot{u}pro + A \quad (6.1')$$

$$\dot{p}c = (\text{open})\dot{p}m + (1 - \text{open})\dot{p} \quad (6.2')$$

$$\dot{w}r = \dot{p}c + b_1 (1 - \text{open}) \dot{u}pro + B \quad (6.4')$$

Leaving out terms which are not relevant in the long term,  $A$  and  $B$  are defined as

$$A = a_0 + a_2 \text{erc} \\ B = b_0 - b_2 \text{ lur}$$

Assuming  $\dot{w}r = \dot{w}c$  and taking into account the restriction introduced in Section 6.2, which implies that  $a_1 = b_1$ , the system can be reduced to the form

$$\dot{p} = \dot{p}m - a_1 \dot{u}pro + (A + B)/\text{open} \quad (6.5)$$

$$\dot{w}r = \dot{p}m + (B + A(1 - \text{open}))/\text{open} \quad (6.6)$$

$A$  in Equation 6.5 gives the nominal value of the labour share in the long term. Changes in real wages are set equal to changes in labour productivity via this term. Thus, the system can be reduced to

$$\dot{p} = \dot{p}m - \dot{u}pro + B/\text{open} \quad (6.5')$$

$$\dot{w}r = \dot{p}m + B/\text{open} \quad (6.6')$$

<sup>1</sup> Nickell (1988).

<sup>2</sup> Phillips (1958).



**Table 6.3****Consumption wage function elasticities**

	Unemployment (lur)		Change in unemployment ( $\Delta$ lur)		Consumption price inflation (pc)		Terms of trade change ( $pt - py$ )		Labour productivity (upro)	
	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run	Short run	Long run
B	-0,27	-0,27	-0,43	-0,43	0,50	1,00	-0,22	-0,43	0,47	0,93
DK	-0,39	-0,39	—	—	0,80	1,00	—	—	0,12	0,12
D	-0,09	-0,09	-0,84	-0,84	0,50	1,00	-0,44	-0,87	0,45	0,90
GR	0,00	-0,08	-0,01	-0,01	0,53	1,00	-0,90	-0,90	0,43	0,43
E	0,00	-0,13	—	—	0,90	0,90	-0,90	-0,90	0,49	0,49
F	-0,13	-0,13	-0,41	-0,41	0,50	1,00	-0,22	-0,43	0,15	0,30
IRL	0,35	-0,35	—	—	0,62	0,93	-0,14	-0,14	0,45	0,45
I	-0,22	-0,22	-0,63	-0,63	0,40	1,00	-0,30	-0,75	0,15	0,37
NL	-0,07	-0,07	-0,43	-0,43	0,33	1,00	-0,30	-0,90	0,18	0,36
P	0,00	-1,95	—	—	0,84	1,00	-0,90	-0,90	0,70	0,70
UK	-0,11	-0,11	-1,36	-1,36	0,67	1,00	-0,34	-0,51	0,10	0,31
US	-0,22	-0,22	-0,13	-0,13	0,09	1,00	—	—	0,20	0,50
JA	-1,17	-1,17	-1,27	-1,27	0,33	1,00	-0,10	-0,50	0,40	0,80

This shows that in the long term real wage increases are solely determined by the trend in labour productivity. Apart from changes in labour productivity, wages and prices are influenced in the long term by import prices and the Phillips curve effect.

Even in the long-term, unemployment rates can be high. To the extent that this rate lies below the normal rate,  $B$  will be positive or  $b_0 > (b_2 \cdot lur)$ .  $B$  is assumed to bring the actual unemployment rate back to the normal rate via changes in money wage inflation. This mechanism can be interpreted as the long-term Phillips curve which determines an equilibrium rate of unemployment occurring at a constant rate of wage inflation. In Quest this normal or equilibrium rate, defined as  $b_0/b_2$ , is constant. Table 6.4 presents measures of this rate for the various countries. Compared with the average sample unemployment rate, the equilibrium rate seems to be high, in particular for Spain, France, Ireland, Italy and the United Kingdom. The differences probably indicate less reliable estimation results for the long-term Phillips curve mechanism for these countries.

#### 6.4. The dynamics of the wage-price block

This section discusses the dynamics of the Quest wage-price mechanism. These dynamics are determined by the length

of the lags and by the size of the coefficients for the variables included on the right-hand side of the wage and price equations. In order to limit the discussion only the dynamics of the models for Germany and the United Kingdom are discussed. An important assumption underlying the analysis

**Table 6.4****Sample means and long-term equilibrium rates of unemployment (% points)**

	Sample mean of unemployment	Long-term equilibrium rate of unemployment
B	10,2	7,6
DK	5,1	8,4
D	3,2	6,6
GR	5,0	7,7
E	14,3	20,5
F	5,8	9,2
IRL	8,6	18,7
I	8,2	10,3
NL	9,0	12,5
P	7,4	7,5
UK	6,4	14,5
US	6,0	6,5
JA	1,9	2,5

is that interest rates are fixed in real terms. Table 6.5 gives for both the United Kingdom and Germany a short summary of the average length of the lags in quarters and the size of the coefficients. It can be deduced from this table that the adjustment of wages with respect to prices in Germany takes 1,7 quarters on average while the same process in the United Kingdom requires only 1,3 quarters. The reverse adjustment of prices with respect to wages takes the same amount of time in both countries, namely, 1,3 quarters. The impact of the other variables differs considerably between the United Kingdom and Germany. The negative effect of the Phillips curve on prices is stronger in the United Kingdom while, on the other hand, the effect of labour productivity on prices and wages is three times stronger in Germany. The differences outlined above are partly responsible for the differences in the short-term simulation properties of the two models. To illustrate the point, a positive, once-off, value-added price inflation shock of 1 % was administered to both

models. Table 6.6 presents the results for the major variables. All numbers are in percentage differences with respect to a baseline scenario.

Table 6.6 shows that in both countries the shock initially causes price and wage inflation to increase but that this upward trend is then reversed, which restores wage and price inflation eventually to their original levels. The big difference is that this process seems to take much longer in Germany than in the United Kingdom. In addition, the maximum short-term inflation level attained in Germany is almost twice as high as in the United Kingdom. The increase in the real wage is initially smaller in Germany but eventually exceeds that of the United Kingdom due to the longer adjustment lag of wages with respect to prices. The maximum inflation level generated by this shock is larger in Germany than in the United Kingdom because of the weaker Phillips curve mechanism.

**Table 6.5**

**Mean lags and long-term coefficients in the wage-price block**

	Germany		United Kingdom	
	mean lag	long-term coefficient	mean lag	long-term coefficient
<i>Wage equation</i>				
— unemployment rate	0,0	− 0,09	0,0	− 0,11
— change in unemployment rate	0,0	− 0,84	0,0	− 1,36
— consumption price inflation	0,7	1,00	1,3	1,00
— labour productivity change	0,7	0,90	1,3	0,31
— change in terms of trade	0,7	− 0,87	1,3	− 0,51
<i>Price equation</i>				
— change in nominal wages	1,3	1,00	1,3	1,00
— labour productivity change	1,3	− 0,90	1,3	− 0,31
— change in capacity utilization rate	0,0	0,15	2,0	0,09
— temporary deviation in import price inflation	—	—	—	0,00
— error correction mechanism	1,0	0,02	1,0	0,09
<i>Consumption price equation</i>				
— import price inflation	1,0	1,00	0,9	1,00
— value-added price inflation	1,0	1,00	0,0	1,00

**Table 6.6****Macroeconomic effects of a once-off increase of 1% in value-added price inflation<sup>1</sup>**

	Year 1	Year 2	Year 3	Year 5	Year 8
<i>Germany</i>					
Gross domestic product	-0,34	-0,76	-0,89	-1,04	-0,92
Private consumption deflator	0,76	1,65	2,30	2,96	2,40
Value-added prices	1,36	2,37	3,13	3,87	2,95
Nominal wage rate	0,51	1,32	1,99	2,61	1,65
Real wage rate	-0,24	-0,32	-0,30	-0,34	-0,73
Total employment	-0,03	-0,16	-0,26	-0,32	-0,29
Labour productivity	-0,31	-0,60	-0,63	-0,72	-0,64
Unemployment rate	0,03	0,15	0,24	0,29	0,26
Capacity utilization rate	-0,28	-0,58	-0,63	-0,76	-0,68
<i>United Kingdom</i>					
Gross domestic product	-0,59	-0,86	-0,79	-0,21	-0,27
Private consumption deflator	1,09	1,62	1,76	1,30	0,51
Value-added prices	1,37	2,02	2,21	1,62	0,61
Nominal wage rate	0,60	1,15	1,31	1,04	0,56
Real wage rate	-0,49	-0,46	-0,45	-0,25	0,05
Total employment	-0,04	-0,15	-0,22	-0,15	0,11
Labour productivity	-0,55	-0,70	-0,57	-0,06	0,16
Unemployment rate	0,04	0,14	0,20	0,13	-0,10
Capacity utilization rate	-0,45	-0,61	-0,56	-0,13	0,22

<sup>1</sup> The results are expressed as percentage deviations from baseline scenario.

## 7. The simulation properties of the Quest model

### 7.1. Some terminology

The parameter estimates presented in the previous sections are mostly based on single equation estimation procedures. They give the best explanation of the development of the left-hand side variable assuming that the explanatory variables are exogenous. In reality, most of these variables are interrelated and therefore made endogenous to the model. The relations between the explanatory variables and the left-hand side variable actually call for simultaneous estimation, but this has only been applied to the equations forming the wage-price nexus. In general, the experience of most model-builders is that simultaneous estimation, in statistical terms, adds little to explanatory power when it is already high in single equation estimations. In the case of low explanatory power, the desire would be to attach a higher weight to *a priori* knowledge anyway. The practice of having a first shot by least-squared error estimations of single equations and then changing crucial parameters on the basis of perform-

ance in full-scale simulations with the model is therefore well established.

In the simulations described below two changes were made to the parameters of the model as they were estimated. The changes mainly concern the wage equation and the investment equation. High coefficients on labour productivity in the wage equation, such as those estimated for Belgium and Germany, usually give trouble in simulations which involve an endogenous jump in labour productivity. As a precaution, the effect should be smoothed over time. Since the value-added price equation already includes an error correction intended to maintain constant real unit labour costs, it is sufficient to lower the labour productivity coefficient in both the wage and price equations. A value of 0,35 has been imposed in the simulations for Belgium, the Netherlands and Germany. Another problem may arise in the case of any lasting discrepancy between production and consumption prices. The terms-of-trade coefficient in the wage equation has therefore been set to zero in all countries. Finally, investment equations are notoriously difficult to estimate (constituting one major reason for not being able to identify the underlying production function). This is often reflected in a high coefficient on the lagged dependent vari-

**Box 2: The wage-price dynamics**

Wages and prices influence each other strongly in Quest. In fact, a positive shock to prices, such as an increase in value-added tax rates, has the effect of initiating a wage-price spiral. However, this spiral mechanism will be checked by economic forces as well as by policy reaction.

The main economic factors which mitigate inflation are:

- (i) increases in the unemployment rate, which lowers wage rates;
- (ii) a reduction in the capital utilization rate, which lowers prices.

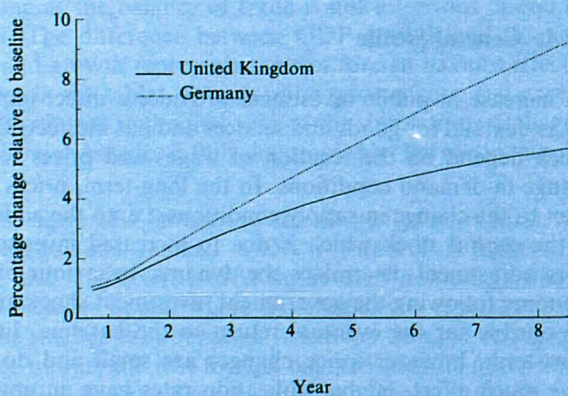
Moreover, a higher inflation rate will be tackled by deploying a tighter monetary policy and/or a more restrictive fiscal policy.

In the graphs, the effects of an *ex-ante* 1 % price shock on the inflation rate in the economies of Western Germany and the United Kingdom are illustrated under two different sets of assumptions:

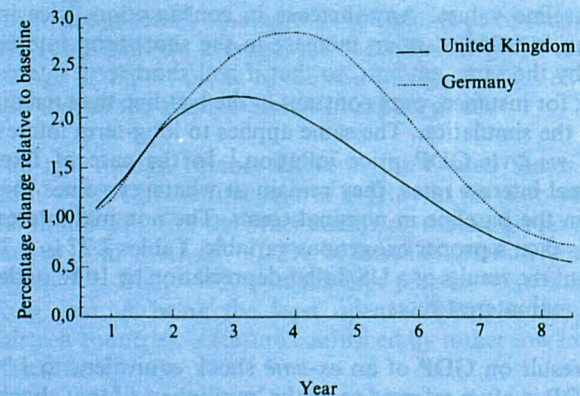
1. The wage-price spiral has not been counteracted by endogenous economic factors or economic policy (Graph 6.1).
2. The spiral has been counteracted by endogenous economic factors such as the unemployment rate and the capital utilization rate (Graph 6.2).

The graphs show the importance of the equilibrating forces within these economies. It should be noted that these simulations were carried out under the assumption of fixed real interest rates.

**GRAPH 6.1: Inflation rate impact of a price shock — wage-price block only**



**GRAPH 6.2: Inflation rate impact of a price shock — standard model**



able, which determines the lag structure of the equation. For Japan, an average lag of four quarters has been imposed. A special problem, furthermore, is the estimation of the investment equation for the annual models. Including the capital stock as an explanatory variable in the quarterly models provides some form of error correction towards a constant investment ratio. This ploy seems to work less satisfactorily in the annual models. The coefficient of the capital stock has therefore been set to zero and the lag structure has been brought into line with that of the quarterly models.

It has also become conventional among model builders to map the properties of the model as a whole by giving standard shocks to the important exogenous variables. One such shock is an increase in government investment by 1 % of baseline GDP. It is applied here to the country models in **unlinked mode**, which means that the feedback from the trade linkage part is mimicked via an aggregate export function. No account is therefore taken of the impact of other countries' reactions on world trade and competitors' export prices. In other words, the 'small country assumption' applies to the unlinked simulations. This first approximation, of course, loses its validity with increasing country size; and for shocks affecting all EC countries directly a **linked simulation** would definitely be required. An obvious example of such a shock, namely a depreciation of the US dollar against all other currencies, is presented later in this section.

The effects of the unlinked simulations of an increase in government investment by 1 % of GDP with real interest rates fixed are given in Tables 7.1 to 7.13 and with nominal interest rates fixed in Tables 7.14 to 7.26. **Fixed real interest rates** mean that real interest rates are constrained to remain at baseline values. Any increase in consumption price inflation is reflected in an increase in the short-term interest rate by the same amount, so that if real short-term interest rates, for instance, were constant in the baseline they remain so in the simulation. The same applies to long-term interest rates *vis-à-vis* GDP price inflation.<sup>1</sup> In the case of **fixed nominal interest rates**, they remain at whatever values they had in the baseline in nominal terms. The nominal interest rate is then a proper exogenous variable. Tables 7.27 to 7.39 present the results of a US dollar depreciation by 10 % under fixed real interest rates.

The result on GDP of an *ex-ante* shock equivalent to 1 % of GDP is often referred to as the 'multiplier' of that shock; and indeed the first-year effect corresponds to what is called

a multiplier in Keynesian terminology. The effects in later years then give the dynamic multipliers. The term multiplier is sometimes used in a different sense for the other variables.

Since most of the equations are in log-linear form, the model is virtually linear in terms of growth rates. For shocks which are a (positive or negative) multiple of the unit shock, but which remain within the range of historical precedence, the effects may therefore be approximately obtained by multiplying the figures in the tables by the size of the shock. In this sense, the effects of the unit shock should perhaps more appropriately be referred to as 'ready reckoners'.

The simulation results in the tables are given either as percentage or percentage point deviations from baseline levels. In the latter case, they measure the difference from the level of a ratio or rate in the baseline. Sometimes it is useful to show the differences between the baseline growth rates of a variable which is presented in percentage differences and the corresponding simulation results. They can easily be calculated by taking the first differences of the accumulated discrepancy between simulation and baseline. This gives an accurate approximation of the differences in annual rates of change, such as inflation rates and GDP growth rates, for which the effects usually do not go beyond a few percentage points per year. The great advantage of presenting the effects of a standard simulation in this manner, and the reason why it has been adopted by most modelling teams, is that the 'ready reckoners' of many different shocks can be more easily combined since they can be assumed to have a common baseline.

## 7.2. Government investment simulations

### 7.2.1. General profile

An increase in public investment provides a direct impulse to the demand for goods and services and has indirect effects which depend on the reaction of wages and prices to the change in demand conditions. In the long-term, prices also react to the change in supply conditions, i.e. to the addition to the capital stock which is due to increased investment. Price adjustment determines the dynamic behaviour of the economy following the government investment shock and is responsible for the eventual return to the baseline. In the short-term, however, price changes are small and do not have much effect. Higher utilization rates have an upward impact but, at the same time, endogenous increases in labour productivity keep prices down. Furthermore, although the reaction of wages to changes in unemployment is fast enough, employment itself is slow to adjust to the rise in demand. The first-year effects of a rise in government invest-

<sup>1</sup> Long-term interest rates in the annual models follow from a term-structure type equation.

ment can therefore be described without taking much notice of changes in prices. For the same reason, the difference in interest rates, which are either fixed in nominal terms or follow the rise in prices so that real interest rates remain at baseline levels, can be disregarded initially.

The increase in the demand for goods and services prompts an immediate acceleration in investment, causing the first-year impact on domestic demand in all countries to be greater than 1 % of GDP, the size of the *ex-ante* increase in government investment. Consumption also goes up because the endogenous rise in labour productivity is partly compensated by higher real wages. This adds relatively little to domestic demand in the first year, since the average lag of the response of private consumption to a change in real disposable income is more than half a year (an average lag of one year has been imposed in the simulations for Germany). The overall effect on domestic demand in the EC countries ranges from 1,1 % for Portugal to 1,6 % for France and the Netherlands. It is slightly above 2 % in the United States and Japan.

Part of the increased demand is directed towards foreign goods and services. The more open an economy is, the larger the import leakage will be, and the smaller the effect of the government investment shock on GDP. A simple formula shows that, in growth rates and by approximation,

$$\dot{y} = \dot{y}_d - \left( \frac{\text{open}}{1 - \text{open}} \right) (\dot{m} - \dot{x}), \quad (7.1)$$

where  $y$  is real GDP,  $y_d$  is domestic demand,  $x$  is exports,  $m$  is imports, all in real terms, and 'open' corresponds to the openness coefficients listed in Table 6.2. The formula applies as long as the balance of trade is not in serious disequilibrium. The difference between GDP growth and domestic demand growth represents the real foreign balance effect as shown in the tables. Disregarding price effects, real exports do not change in the first year of the simulation, so that the real foreign balance is fully determined by the rise in imports.

In the larger EC countries, the elasticity of imports with respect to final demand (GDP + imports) is higher than one, and imports rise even faster than domestic demand. This includes Spain, where the elasticity is especially high. In the smaller EC countries, where the demand elasticity is closer to one, the real foreign balance effect is nevertheless substantial because the importance of the real foreign balance effect is in direct proportion to the degree of openness in the economy. A case in point is the comparison between France and the Netherlands. In both countries domestic demand rises to 1,6 % above the baseline in the first year of the simulation. But GDP goes up by 1,1 % in France against

only 0,7 % in the Netherlands, the more open economy. In the other countries, the real foreign balance effect in the first year ranges from -0,3 % of baseline GDP in Denmark to -0,7 % in Belgium.

The import demand elasticity in the United States is as high as 1,6 and much higher than in most EC countries. Nevertheless, it is still low in comparison to estimates which do not allow for the trend in trade integration.

After the first year of the simulation, price changes begin to have an impact. Three effects are of special importance. First, any acceleration in consumption price inflation has a downward effect on the growth of private consumption in all countries except for the Netherlands (*cf.* Table 5.1). This effect is especially strong in the United Kingdom, explaining the decline in consumption from the third year of the simulation onwards, and perhaps not strong enough in Italy, where the estimated coefficient has been doubled in simulation to prevent consumption from rising too fast.

A second effect is the loss of competitiveness caused by the rise in export prices. A long-term price elasticity of one has been imposed upon the aggregate export functions which are used in the unlinked simulations of the quarterly models, except for Japan where it is higher than one. The average lag of the relative price effect on the exports of non-energy goods is set to three quarters. Exports of services follow exports of goods with a short lag. The simulation results show that, in the typical case, the price effect on total exports fully materializes within two years. As long as export price inflation is higher than in the baseline, there continues to be a downward effect on the volume of exports.

The import price elasticities, which account for the third effect, are generally smaller than the export price elasticities (*cf.* Table 5.6). On average, the contribution of the relative change in import prices to the real foreign balance effect is half that of the relative change in export prices.

The real foreign balance effect in the United States goes from -0,5% in the first year to -1,1% in the sixth year of the simulation. For the other countries, the sixth-year effect ranges from -0,7 to -1,2% of baseline GDP. The effect in Japan is from -0,3% in the first year to -0,8% in the sixth year, it being the least open economy among the thirteen countries, a feature confirmed by rather low import elasticities.

The change in annual inflation rates, as measured by the consumption deflator, is 0,3 percentage points in most of the EC countries. It is higher than that in Italy, the United States and Japan. In Japan, the annual rise in the consumption price level is as high as 0,7 % on average over a period

of five years following the first year of the government investment increase. In the first year, no positive effect on prices can be discerned. The driving force behind this relatively steep rise in prices in Japan is primarily the effect of higher utilization rates on value-added pricing. The Phillips curve plays hardly any role since it is assumed that 95 % of the rise in employment is covered by higher labour supply out of the reserve of unregistered unemployed. It is important to recognize that the inverse of the openness of a country magnifies the effect of changes in the utilization rate on prices, as it would do for the Phillips curve effect (*cf.* Section 6.3). If maintained, the 1.4 percentage point increase in the utilization rate of Japan in the first year of the simulation would raise value-added prices by about 4% in the long-term.

The relevance of the openness of a country for the Phillips curve effect on nominal wages and prices seems to be confirmed by the low inflationary effects in the Benelux

countries. Belgium generates less than 0,2 % extra inflation and the Netherlands less than 0,1 % per year. The inflationary effect of an increase in public investment is even smaller in Ireland, where it is virtually non-existent. This is because the effect on unemployment is dampened by the return of migrant workers thereby illustrating the importance of endogenizing the labour supply in the Quest model for Ireland.

Both the Netherlands and Ireland have a remarkably flat profile for the multiplier on GDP under fixed real interest rates. In all other countries, GDP gradually returns towards the baseline. This demonstrates that both the effect of inflation on consumption and the Phillips curve, which generates more inflation, are crucial for the eventual downturn towards the baseline. The first effect (a proxy for the real wealth effect) is missing from the Quest model for the Netherlands, while for Ireland the unemployment effect is mitigated via migration.

**Table 7.1**

**Unlinked Quest simulation for Belgium: increase in public investment by 1% of baseline GDP  
real interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,6	0,6	0,6	0,5	0,4	0,3
Nominal GDP	0,6	0,8	1,0	1,1	1,3	1,4
Real private consumption	0,1	0,2	0,3	0,4	0,5	0,6
Real private investment	0,9	0,9	0,7	0,6	0,5	0,4
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,3	0,3	0,2	0,1	0,0
Real exports	-0,0	-0,1	-0,2	-0,2	-0,3	-0,4
Real imports	0,8	1,1	1,1	1,1	1,0	1,0
Real foreign balance (% GDP) <sup>1</sup>	-0,7	-1,0	-1,0	-1,1	-1,1	-1,2
Consumption deflator	0,1	0,2	0,3	0,5	0,6	0,8
Export deflator	0,1	0,2	0,2	0,4	0,5	0,6
Import deflator	0,0	0,0	0,0	0,0	0,0	0,0
Nominal wage rate	0,3	0,6	0,8	1,1	1,4	1,6
Real unit labour cost	-0,2	-0,0	-0,1	-0,2	-0,2	-0,3
Capacity utilization rate <sup>1</sup>	0,4	0,4	0,3	0,3	0,2	0,2
Employment	0,1	0,2	0,2	0,2	0,1	0,1
Unemployment rate <sup>1</sup>	-0,1	-0,1	-0,2	-0,1	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,9	-0,9	-1,0	-1,2	-1,4	-1,6
Current balance (% GDP) <sup>1</sup>	-0,6	-0,7	-0,6	-0,5	-0,4	-0,3
Long-term interest rate <sup>1</sup>	0,1	0,2	0,2	0,3	0,2	0,2

<sup>1</sup> Differences from baseline in percentage points.



**Table 7.2**

Unlinked Quest simulation for Denmark: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1.1	0.9	0.7	0.6	0.5	0.4
Nominal GDP	1.4	1.5	1.6	1.9	2.2	2.5
Real private consumption	0.2	0.2	0.2	0.2	0.2	0.2
Real private investment	1.1	0.6	0.2	0.1	-0.0	-0.0
Stockbuilding (% GDP) <sup>1</sup>	0.1	0.1	-0.0	-0.0	-0.0	-0.0
Real exports	-0.0	-0.1	-0.1	-0.2	-0.3	-0.4
Real imports	0.8	0.8	0.9	1.0	1.1	1.2
Real foreign balance (% GDP) <sup>1</sup>	-0.3	-0.4	-0.4	-0.5	-0.6	-0.7
Consumption deflator	0.2	0.4	0.6	0.9	1.2	1.4
Export deflator	0.2	0.4	0.6	0.8	1.1	1.4
Import deflator	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Nominal wage rate	0.3	0.6	1.0	1.3	1.7	2.1
Real unit labour cost	-0.8	-0.5	-0.3	-0.2	-0.1	-0.1
Capacity utilization rate <sup>1</sup>	0.7	0.5	0.4	0.3	0.2	0.1
Employment	0.3	0.4	0.4	0.4	0.3	0.3
Unemployment rate <sup>1</sup>	-0.3	-0.4	-0.4	-0.3	-0.3	-0.3
Budget balance (% GDP) <sup>1</sup>	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7
Current balance (% GDP) <sup>1</sup>	-0.2	-0.2	-0.1	-0.1	-0.0	-0.0
Long-term interest rate <sup>1</sup>	0.3	0.3	0.4	0.4	0.4	0.4

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.3**

Unlinked Quest simulation for Germany: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1.0	0.9	0.6	0.4	0.4	0.4
Nominal GDP	1.3	1.7	1.9	2.2	2.6	3.0
Real private consumption	0.3	0.6	0.6	0.6	0.7	0.9
Real private investment	1.2	0.9	0.0	-0.1	0.0	0.1
Stockbuilding (% GDP) <sup>1</sup>	0.1	0.1	0.0	0.0	0.0	0.0
Real exports	-0.0	-0.2	-0.5	-0.8	-1.1	-1.3
Real imports	1.3	1.7	1.7	1.7	1.9	2.2
Real foreign balance (% GDP) <sup>1</sup>	-0.5	-0.6	-0.7	-0.9	-1.0	-1.2
Consumption deflator	0.1	0.5	0.9	1.2	1.5	1.8
Export deflator	0.1	0.5	0.9	1.2	1.5	1.7
Import deflator	0.1	0.0	0.0	-0.0	-0.1	-0.1
Nominal wage rate	0.5	1.1	1.5	1.9	2.3	2.6
Real unit labour cost	-0.5	-0.1	0.0	0.0	-0.0	-0.1
Capacity utilization rate <sup>1</sup>	0.8	0.6	0.3	0.2	0.2	0.1
Employment	0.3	0.5	0.4	0.3	0.3	0.3
Unemployment rate <sup>1</sup>	-0.2	-0.4	-0.4	-0.3	-0.2	-0.2
Budget balance (% GDP) <sup>1</sup>	-0.8	-0.8	-1.0	-1.2	-1.4	-1.6
Current balance (% GDP) <sup>1</sup>	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5
Long-term interest rate <sup>1</sup>	0.4	0.6	0.5	0.4	0.4	0.4

<sup>1</sup> Differences from baseline in percentage points.



**Table 7.4**

Unlinked Quest simulation for Greece: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,0	0,7	0,6	0,5	0,5	0,4
Nominal GDP	1,7	1,8	2,0	2,1	2,1	2,1
Real private consumption	-0,0	0,0	0,1	0,2	0,3	0,4
Real private investment	1,9	0,7	0,5	0,3	0,3	0,3
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,2	-0,4	-0,5	-0,6	-0,7	-0,7
Real imports	0,5	0,8	1,1	1,2	1,3	1,4
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-0,4	-0,6	-0,7	-0,8	-0,9
Consumption deflator	0,7	1,0	1,1	1,2	1,2	1,1
Export deflator	0,5	0,7	0,9	1,0	1,0	1,0
Import deflator	0,7	0,8	0,8	0,7	0,6	0,6
Nominal wage rate	0,8	1,3	1,6	1,7	1,7	1,7
Real unit labour cost	-0,7	-0,4	-0,3	-0,2	-0,2	-0,2
Capacity utilization rate <sup>1</sup>	0,7	0,4	0,3	0,2	0,2	0,2
Employment	0,1	0,2	0,2	0,1	0,1	0,1
Unemployment rate <sup>1</sup>	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-1,3	-1,4	-1,6	-1,8	-1,9	-1,9
Current balance (% GDP) <sup>1</sup>	-0,3	-0,4	-0,5	-0,5	-0,5	-0,5
Long-term interest rate <sup>1</sup>	0,7	0,7	0,5	0,2	0,1	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.5**

Unlinked Quest simulation for Spain: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,1	0,5	0,3	0,1	-0,1	-0,2
Nominal GDP	2,1	1,9	2,0	2,1	2,3	2,4
Real private consumption	0,1	0,0	-0,0	-0,1	-0,1	-0,2
Real private investment	2,4	0,5	0,2	0,0	-0,1	-0,2
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,2	-0,3	-0,3	-0,4	-0,5	-0,5
Real imports	1,3	1,8	2,1	2,3	2,5	2,6
Real foreign balance (% GDP) <sup>1</sup>	-0,4	-0,6	-0,8	-0,9	-0,9	-1,0
Consumption deflator	0,8	1,1	1,3	1,5	1,8	1,9
Export deflator	0,6	0,8	1,0	1,2	1,3	1,5
Import deflator	0,0	0,0	0,0	0,0	0,0	0,0
Nominal wage rate	1,0	1,3	1,6	1,9	2,2	2,4
Real unit labour cost	-0,7	-0,2	-0,1	-0,0	0,0	0,0
Capacity utilization rate <sup>1</sup>	0,7	0,3	0,1	-0,0	-0,1	-0,2
Employment	0,4	0,4	0,3	0,2	0,1	0,0
Unemployment rate <sup>1</sup>	-0,3	-0,3	-0,2	-0,1	-0,1	-0,0
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,8	-0,8	-0,9	-0,9	-0,9
Current balance (% GDP) <sup>1</sup>	-0,2	-0,3	-0,4	-0,5	-0,5	-0,5
Long-term interest rate <sup>1</sup>	0,5	0,5	0,5	0,5	0,5	0,4

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.6**

Unlinked Quest simulation for France: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,1	1,1	1,0	0,9	0,8	0,7
Nominal GDP	1,1	1,6	2,0	2,5	3,0	3,6
Real private consumption	0,2	0,3	0,4	0,5	0,6	0,7
Real private investment	1,5	1,8	1,8	1,6	1,4	1,3
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,2	0,1	-0,0	-0,0	-0,0
Real exports	-0,0	-0,1	-0,4	-0,6	-0,9	-1,2
Real imports	1,9	2,2	2,2	2,3	2,5	2,7
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,6	-0,7	-0,8	-0,9
Consumption deflator	0,0	0,4	0,9	1,4	1,9	2,4
Export deflator	0,0	0,3	0,7	1,0	1,4	1,8
Import deflator	0,1	0,1	0,1	0,1	0,0	0,0
Nominal wage rate	0,3	0,8	1,4	2,0	2,7	3,4
Real unit labour cost	-0,6	-0,5	-0,2	-0,0	-0,1	-0,1
Capacity utilization rate <sup>1</sup>	0,9	0,9	0,7	0,5	0,4	0,3
Employment	0,1	0,3	0,4	0,4	0,4	0,3
Unemployment rate <sup>1</sup>	-0,1	-0,3	-0,3	-0,3	-0,3	-0,3
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,7	-0,8	-0,9	-1,0	-1,1
Current balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,5	-0,5	-0,6	-0,6
Long-term interest rate <sup>1</sup>	0,1	0,5	0,6	0,6	0,6	0,6

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.7**

Unlinked Quest simulation for Ireland: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,9	0,8	0,8	0,8	0,8	0,8
Nominal GDP	0,9	0,9	1,0	1,1	1,2	1,3
Real private consumption	0,3	0,4	0,5	0,6	0,6	0,7
Real private investment	1,6	1,0	0,8	0,6	0,6	0,5
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,0	0,0	-0,0	-0,0	-0,0
Real exports	0,0	0,0	-0,0	-0,0	-0,0	-0,1
Real imports	1,4	1,4	1,4	1,5	1,6	1,6
Real foreign balance (% GDP) <sup>1</sup>	-0,6	-0,6	-0,6	-0,6	-0,6	-0,7
Consumption deflator	-0,0	-0,0	0,0	0,1	0,1	0,2
Export deflator	0,0	0,0	0,1	0,1	0,2	0,3
Import deflator	0,1	0,1	0,1	0,1	0,0	0,0
Nominal wage rate	0,2	0,3	0,3	0,4	0,6	0,7
Real unit labour cost	-0,5	-0,4	-0,3	-0,3	-0,3	-0,3
Capacity utilization rate <sup>1</sup>	0,4	0,4	0,3	0,3	0,3	0,3
Employment	0,2	0,3	0,3	0,3	0,3	0,3
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,2	-0,2	-0,2	-0,2
Budget balance (% GDP) <sup>1</sup>	-1,1	-1,1	-1,2	-1,4	-1,5	-1,7
Current balance (% GDP) <sup>1</sup>	-0,6	-0,5	-0,5	-0,5	-0,5	-0,5
Long-term interest rate <sup>1</sup>	0,0	0,0	0,1	0,1	0,1	0,1

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.8**

**Unlinked Quest simulation for Italy: increase in public investment by 1% of baseline GDP**  
**real interest rates fixed**

*(percentage differences from baseline, unless otherwise stated)*

	1990	1991	1992	1993	1994	1995
Real GDP	1,0	1,0	1,0	0,9	0,8	0,7
Nominal GDP	1,3	1,9	2,4	3,0	3,7	4,6
Real private consumption	0,2	0,4	0,5	0,6	0,7	0,8
Real private investment	1,5	2,1	1,4	0,9	0,7	0,5
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,2	0,2	0,1	0,1	0,1
Real exports	-0,0	-0,1	-0,3	-0,5	-0,8	-1,1
Real imports	2,0	2,4	2,4	2,4	2,5	2,7
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,7	-0,8	-0,9	-1,0
Consumption deflator	0,0	0,3	0,8	1,3	2,0	2,8
Export deflator	0,1	0,3	0,5	0,8	1,2	1,6
Import deflator	0,0	-0,0	-0,1	-0,0	-0,0	-0,0
Nominal wage rate	0,3	0,8	1,4	2,2	3,1	4,1
Real unit labour cost	-0,9	-0,8	-0,6	-0,4	-0,3	-0,1
Capacity utilization rate <sup>1</sup>	0,7	0,6	0,5	0,4	0,3	0,3
Employment	0,1	0,2	0,3	0,4	0,4	0,4
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,3	-0,3	-0,3	-0,3
Budget balance (% GDP) <sup>1</sup>	-1,3	-1,7	-2,2	-2,9	-3,7	-4,7
Current balance (% GDP) <sup>1</sup>	-0,3	-0,3	-0,3	-0,3	-0,2	-0,2
Long-term interest rate <sup>1</sup>	0,5	0,5	0,6	0,7	0,9	1,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.9**

**Unlinked Quest simulation for the Netherlands: increase in public investment by 1% of baseline GDP**  
**real interest rates fixed**

*(percentage differences from baseline, unless otherwise stated)*

	1990	1991	1992	1993	1994	1995
Real GDP	0,7	0,6	0,6	0,6	0,6	0,6
Nominal GDP	1,0	1,2	1,2	1,2	1,2	1,3
Real private consumption	0,3	0,5	0,6	0,6	0,7	0,7
Real private investment	1,2	1,6	1,6	1,2	0,9	0,7
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,1	0,0	-0,0	-0,0	-0,0
Real exports	-0,0	-0,1	-0,1	-0,1	-0,1	-0,1
Real imports	1,3	1,5	1,6	1,5	1,4	1,4
Real foreign balance (% GDP) <sup>1</sup>	-0,9	-1,1	-1,1	-1,0	-1,0	-0,9
Consumption deflator	0,2	0,3	0,4	0,4	0,4	0,4
Export deflator	0,2	0,2	0,2	0,2	0,2	0,2
Import deflator	0,2	0,2	0,2	0,1	0,1	0,1
Nominal wage rate	0,2	0,5	0,7	0,7	0,8	0,9
Real unit labour cost	-0,7	-0,5	-0,3	-0,2	-0,1	-0,0
Capacity utilization rate <sup>1</sup>	0,5	0,4	0,3	0,2	0,1	0,1
Employment	0,1	0,2	0,3	0,3	0,3	0,3
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,2	-0,3	-0,3	-0,3
Budget balance (% GDP) <sup>1</sup>	-1,0	-1,0	-1,0	-1,1	-1,1	-1,1
Current balance (% GDP) <sup>1</sup>	-0,6	-0,7	-0,7	-0,7	-0,6	-0,6
Long-term interest rate <sup>1</sup>	0,6	0,1	0,0	-0,0	0,0	0,1

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.10**

Unlinked Quest simulation for Portugal: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,8	0,7	0,3	-0,1	-0,2	-0,0
Nominal GDP	1,0	1,8	2,5	2,8	2,6	2,1
Real private consumption	0,1	0,3	0,3	0,3	0,2	0,3
Real private investment	0,3	1,1	0,6	0,1	-0,2	-0,2
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,0	-0,2	-0,4	-0,6	-0,7	-0,7
Real imports	0,9	1,6	2,3	2,6	2,5	2,2
Real foreign balance (% GDP) <sup>1</sup>	-0,4	-0,8	-1,1	-1,3	-1,3	-1,2
Consumption deflator	0,2	0,8	1,7	2,2	2,1	1,6
Export deflator	0,1	0,5	1,0	1,2	1,2	0,9
Import deflator	0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Nominal wage rate	0,2	1,5	2,9	3,4	3,0	2,1
Real unit labour cost	-0,5	-0,1	0,2	0,3	0,1	-0,1
Capacity utilization rate <sup>1</sup>	0,6	0,5	0,1	-0,2	-0,2	-0,1
Employment	0,3	0,2	-0,1	-0,2	-0,2	0,0
Unemployment rate <sup>1</sup>	-0,3	-0,2	0,1	0,2	0,2	0,0
Budget balance (% GDP) <sup>1</sup>	1,0	1,2	1,3	1,5	1,6	1,6
Current balance (% GDP) <sup>1</sup>	-0,3	-0,6	-0,7	-0,9	-0,9	-0,8
Long-term interest rate <sup>1</sup>	0,1	0,5	0,8	0,6	0,1	-0,4

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.11**

Unlinked Quest simulation for the United Kingdom: increase in public investment by 1% of baseline GDP  
real interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,0	1,1	0,9	0,7	0,5	0,5
Nominal GDP	0,9	1,3	1,6	1,8	2,1	2,4
Real private consumption	0,3	0,6	0,6	0,5	0,5	0,6
Real private investment	1,1	1,6	0,6	-0,1	-0,4	-0,3
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,1	0,0	0,0	-0,0	-0,0
Real exports	0,0	-0,1	-0,2	-0,4	-0,6	-0,7
Real imports	1,4	1,8	1,7	1,6	1,6	1,7
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,7	-0,7	-0,7	-0,7	-0,8
Consumption deflator	0,0	0,2	0,6	0,9	1,3	1,6
Export deflator	-0,0	0,2	0,4	0,7	0,9	1,1
Import deflator	0,1	0,0	-0,0	-0,0	-0,0	-0,0
Nominal wage rate	0,3	0,8	1,3	1,7	2,0	2,4
Real unit labour cost	-0,5	-0,2	0,0	0,2	0,2	0,2
Capacity utilization rate <sup>1</sup>	0,8	0,8	0,6	0,4	0,3	0,3
Employment	0,1	0,3	0,3	0,3	0,3	0,2
Unemployment rate <sup>1</sup>	-0,1	-0,3	-0,3	-0,3	-0,2	-0,2
Budget balance (% GDP) <sup>1</sup>	-0,6	-0,5	-0,5	-0,6	-0,7	-0,8
Current balance (% GDP) <sup>1</sup>	-0,4	-0,4	-0,4	-0,3	-0,3	-0,3
Long-term interest rate <sup>1</sup>	0,1	0,4	0,4	0,4	0,4	0,3

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.12**

**Unlinked Quest simulation for the United States: increase in public investment by 1% of baseline GDP  
real interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,6	1,4	0,7	0,4	0,4	0,3
Nominal GDP	1,5	2,0	2,1	2,6	3,4	4,1
Real private consumption	0,7	0,8	0,4	0,3	0,4	0,7
Real private investment	2,7	2,0	-0,5	-0,7	-0,1	0,2
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,1	0,0	-0,0	-0,0	0,0
Real exports	-0,0	-0,1	-0,4	-0,8	-1,1	-1,5
Real imports	3,0	3,3	2,6	2,8	3,7	4,5
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,5	-0,6	-0,9	-1,1
Consumption deflator	0,0	0,6	1,3	1,9	2,6	3,2
Export deflator	-0,0	0,5	1,2	1,9	2,5	3,3
Import deflator	-0,0	0,0	0,0	0,0	-0,0	-0,0
Nominal wage rate	0,7	1,4	2,0	2,7	3,4	4,2
Real unit labour cost	-0,3	0,2	0,3	0,3	0,2	0,1
Capacity utilization rate <sup>1</sup>	1,2	1,0	0,2	0,0	0,1	0,1
Employment	0,6	0,8	0,4	0,2	0,1	0,1
Unemployment rate <sup>1</sup>	-0,6	-0,7	-0,4	-0,1	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,5	-0,4	-0,7	-0,9	-1,0	-1,0
Current balance (% GDP) <sup>1</sup>	-0,4	-0,4	-0,2	-0,2	-0,3	-0,4
Long-term interest rate <sup>1</sup>	0,1	0,9	0,8	0,7	0,8	0,8

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.13**

**Unlinked Quest simulation for Japan: increase in public investment by 1% of baseline GDP  
real interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,8	1,1	0,6	0,4	0,0	-0,4
Nominal GDP	1,7	2,0	2,2	2,7	3,3	3,8
Real private consumption	0,5	0,5	0,5	0,4	0,2	-0,1
Real private investment	2,5	-0,1	-1,2	-1,1	-1,4	-1,8
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,1	0,0	-0,0	-0,0	-0,1
Real exports	0,1	-0,4	-0,7	-1,1	-1,6	-2,1
Real imports	1,7	1,4	1,3	1,5	1,6	1,8
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,3	-0,4	-0,5	-0,6	-0,8
Consumption deflator	-0,1	0,7	1,3	1,9	2,7	3,6
Export deflator	-0,0	0,5	0,7	1,0	1,4	1,8
Import deflator	0,0	0,1	0,1	0,1	0,2	0,2
Nominal wage rate	0,8	1,1	1,5	2,2	2,9	3,7
Real unit labour cost	-0,5	-0,2	0,1	0,1	0,2	0,2
Capacity utilization rate <sup>1</sup>	1,4	0,7	0,4	0,3	0,1	-0,2
Employment	0,4	0,7	0,7	0,6	0,5	0,3
Unemployment rate <sup>1</sup>	-0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Budget balance (% GDP) <sup>1</sup>	-0,6	-1,4	-1,9	-2,4	-3,2	-4,0
Current balance (% GDP) <sup>1</sup>	-0,2	-0,1	-0,1	-0,2	-0,2	-0,2
Long-term interest rate <sup>1</sup>	0,3	0,9	0,6	0,8	1,0	1,0

<sup>1</sup> Differences from baseline in percentage points.

### 7.2.2. The effects of interest rate changes

The difference between the effects of an increase in government investment under fixed real interest rates and fixed nominal interest rates gives an indication of the effects of a permanent increase in nominal interest rates. The size of the shock is, however, very different among countries, ranging from a mere 0.1 percentage points in Ireland to almost 1.0 percentage point in Italy. It appears that, although the effect of the rise in interest rates on investment is substantial in most countries, the effect on GDP is small, in particular for France, Italy and Spain. In Germany, on the other hand, the effect after four years is almost 1 % of baseline GDP for a sustained 1 percentage point increase in interest rates, and for Denmark it is even higher.

A feature common to the government investment simulations for all countries is that, while private investment is sensitive to real interest rate changes, real GDP is relatively stable. With real interest rates fixed, private investment rises by more than 1 % with respect to the baseline due to the acceleration in demand but the rise is clearly temporary. The initial effect in France and Italy is higher than in Germany and the United Kingdom, and also extends over a longer period of time. With nominal interest rates fixed, the increase in private investment is much more permanent. In this case, real interest rates decline due to the inflation in GDP and consumption prices.

Private consumption is primarily driven by the development of wages but real consumption follows the real wage rate only at a distance because inflation itself has a negative effect. The household savings ratio (not shown in the tables) rises by 0.25 to 0.75 percentage points in the simulations of the four largest EC countries. In the fifth year it stabilizes at a rise of 0.5 percentage points in France and Italy and 0.6 percentage points in Germany and the United Kingdom. This value is remarkably robust in the face of changes in interest rates. In Germany it rises by a further 0.1 percentage points when real interest rates are fixed and in Italy by 0.2 percentage points due to the significant increase in interest payments on government debt.

The rise in government interest payments to households when interest rates or the government deficit go up is one influence on consumption, and therefore on GDP, which runs counter to the effect on investment. Another countervailing influence is, of course, the real foreign balance effect. The real exports of goods and services fall because export prices are rising compared to competitors' export prices which are fixed in unlinked simulations. Real imports track the rise in final demand with an elasticity higher than

one. Relative import prices fall due to the rise in domestic prices and this adds to the rise in imports. The price effect is somewhat mitigated when real interest rates are fixed.

Consumption prices rise to between 1 and 2 % above the baseline level in the fifth year of the simulation. This implies an annual rise in the inflation rate by 0.2 to 0.4 of a percentage point. Nominal wage inflation rates rise by about 0.2 percentage points per year more on average. The increase in real wages is highest in the first years of the simulation and gradually wears off with the return of unemployment to baseline levels after an initial decline. Labour market adjustment is slow, however. A general characteristic of the model is that, in the medium term, the unemployment and inflation levels reached after the initial shock are sticky to the extent of seeming to be semi-permanent within a five-year time span.

As a final word of caution it is worth pointing out that in a realistic scenario the monetary policy reaction would probably be more forceful than is implicit in a regime of fixed real interest rates, which is still rather accommodating to the effects of the fiscal shock. In that sense, single instrument shocks form, of course, a strictly technical means of investigating the properties of the model. By assuming a less accommodating monetary policy response, or by taking account of external monetary repercussions, there would also be a faster return to the baseline, which seems to appeal to most model-builders. It should be kept in mind, however, that linked simulations are a more appropriate vehicle for such scenarios.

### 7.3. Linked simulation of the US dollar depreciation

As an example of a shock for which the use of the linked mode of the model is indispensable, a depreciation of the US dollar has been simulated. For a small country, the use of the unlinked mode for the simulation of a unilateral change in its exchange rate while not indefensible, would nonetheless be regarded as fairly unrealistic. However, in the case of the USA, or the EC as a whole for that matter, the effects on world trade and prices and the changes in the pattern of bilateral trade cannot be neglected.

A depreciation of the US dollar against all other currencies in the world would have substantial effects in all countries. It would boost GDP in the USA itself to almost 1.5 % above the baseline and lead to a corresponding fall in Japanese GDP. The EC countries, which have little direct relation

**Table 7.14**

**Unlinked Quest simulation for Belgium: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,6	0,7	0,6	0,6	0,5	0,4
Nominal GDP	0,6	0,8	1,0	1,2	1,4	1,6
Real private consumption	0,1	0,2	0,4	0,5	0,6	0,6
Real private investment	0,8	1,5	1,8	2,0	2,1	1,9
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,3	0,3	0,2	0,1	0,0
Real exports	-0,0	-0,1	-0,2	-0,2	-0,3	-0,4
Real imports	0,8	1,1	1,2	1,2	1,2	1,2
Real foreign balance (% GDP) <sup>1</sup>	-0,7	-1,0	-1,2	-1,2	-1,3	-1,3
Consumption deflator	0,1	0,2	0,4	0,5	0,7	0,8
Export deflator	0,1	0,2	0,3	0,4	0,5	0,7
Import deflator	0,0	0,0	0,0	0,0	0,0	0,0
Nominal wage rate	0,3	0,6	0,9	1,2	1,5	1,8
Real unit labour cost	-0,2	-0,1	0,1	0,2	0,2	0,3
Capacity utilization rate <sup>1</sup>	0,4	0,4	0,4	0,3	0,2	0,2
Employment	0,1	0,2	0,2	0,2	0,2	0,1
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,2	-0,2	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,9	-0,8	-0,9	-1,0	-1,1	-1,3
Current balance (% GDP) <sup>1</sup>	-0,6	-0,7	-0,7	-0,6	-0,5	-0,4
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.15**

**Unlinked Quest simulation for Denmark: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,2	1,2	1,1	1,1	1,0	1,0
Nominal GDP	1,5	1,9	2,3	2,8	3,4	4,0
Real private consumption	0,4	0,6	0,8	0,9	1,0	1,1
Real private investment	1,2	1,6	1,8	2,1	2,5	2,7
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,1	0,0	0,0	0,0	0,0
Real exports	-0,0	-0,1	-0,2	-0,3	-0,4	-0,5
Real imports	0,8	1,1	1,2	1,5	1,7	2,0
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,4	-0,6	-0,7	-0,9	-1,0
Consumption deflator	0,2	0,4	0,7	1,1	1,6	2,0
Export deflator	0,2	0,4	0,7	1,1	1,5	1,9
Import deflator	-0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Nominal wage rate	0,3	0,7	1,2	1,8	2,4	3,1
Real unit labour cost	-0,9	-0,7	-0,5	-0,4	-0,4	-0,3
Capacity utilization rate <sup>1</sup>	0,7	0,7	0,5	0,4	0,2	0,1
Employment	0,3	0,5	0,6	0,6	0,6	0,5
Unemployment rate <sup>1</sup>	-0,3	-0,5	-0,5	-0,5	-0,5	-0,5
Budget balance (% GDP) <sup>1</sup>	-0,4	-0,3	-0,3	-0,2	-0,2	-0,1
Current balance (% GDP) <sup>1</sup>	-0,2	-0,2	-0,2	-0,2	-0,1	-0,1
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

Table 7.16

Unlinked Quest simulation for Germany: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,1	1,1	1,0	0,8	0,6	0,5
Nominal GDP	1,3	2,0	2,5	3,0	3,4	3,7
Real private consumption	0,3	0,6	0,6	0,6	0,7	0,7
Real private investment	1,4	2,2	2,2	2,4	2,5	2,4
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,2	0,2	0,1	0,1	0,0
Real exports	-0,0	-0,3	-0,6	-1,0	-1,3	-1,7
Real imports	1,4	2,0	2,2	2,4	2,6	2,7
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,7	-1,0	-1,1	-1,3	-1,5
Consumption deflator	0,1	0,5	1,0	1,5	1,9	2,2
Export deflator	0,2	0,5	1,0	1,5	1,9	2,2
Import deflator	0,1	0,0	-0,0	-0,0	-0,1	-0,1
Nominal wage rate	0,5	1,2	1,9	2,5	2,9	3,3
Real unit labour cost	-0,5	-0,2	-0,1	-0,0	0,0	-0,0
Capacity utilization rate <sup>1</sup>	0,8	0,7	0,5	0,3	0,1	-0,1
Employment	0,3	0,5	0,6	0,5	0,4	0,4
Unemployment rate <sup>1</sup>	-0,2	-0,5	-0,5	-0,4	-0,4	-0,3
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,7	-0,7	-0,9	-1,0	-1,2
Current balance (% GDP) <sup>1</sup>	-0,4	-0,5	-0,5	-0,6	-0,6	-0,7
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

Table 7.17

Unlinked Quest simulation for Greece: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,1	0,8	0,6	0,5	0,5	0,4
Nominal GDP	1,8	2,0	2,3	2,3	2,3	2,2
Real private consumption	0,0	0,1	0,2	0,3	0,4	0,5
Real private investment	2,2	1,0	0,8	0,4	0,3	0,2
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,2	-0,4	-0,6	-0,7	-0,7	-0,7
Real imports	0,6	0,9	1,2	1,3	1,5	1,6
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,5	-0,7	-0,8	-0,9	-0,9
Consumption deflator	0,7	1,1	1,3	1,3	1,3	1,2
Export deflator	0,5	0,8	1,0	1,1	1,1	1,1
Import deflator	0,8	0,8	0,9	0,8	0,7	0,6
Nominal wage rate	0,9	1,4	1,7	1,9	1,9	1,9
Real unit labour cost	-0,7	-0,4	-0,3	-0,3	-0,2	-0,2
Capacity utilization rate <sup>1</sup>	0,7	0,5	0,3	0,2	0,2	0,1
Employment	0,1	0,2	0,2	0,1	0,1	0,1
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,2	-0,1	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-1,2	-1,4	-1,6	-1,7	-1,8	-1,8
Current balance (% GDP) <sup>1</sup>	-0,4	-0,4	-0,6	-0,6	-0,6	-0,6
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.



**Table 7.18**

**Unlinked Quest simulation for Spain: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,3	0,7	0,5	0,3	0,1	-0,1
Nominal GDP	2,4	2,5	2,8	3,2	3,5	3,9
Real private consumption	0,3	0,4	0,5	0,5	0,5	0,5
Real private investment	3,0	1,2	0,8	0,6	0,4	0,2
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,2	-0,3	-0,4	-0,6	-0,7	-0,8
Real imports	1,5	2,3	2,9	3,4	3,7	4,1
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,8	-1,0	-1,2	-1,4	-1,6
Consumption deflator	1,0	1,4	1,8	2,2	2,6	2,9
Export deflator	0,7	1,0	1,3	1,6	1,9	2,2
Import deflator	0,0	0,0	0,0	0,0	0,0	0,0
Nominal wage rate	1,1	1,7	2,2	2,7	3,2	3,7
Real unit labour cost	-0,8	-0,3	-0,2	-0,1	-0,1	-0,0
Capacity utilization rate <sup>1</sup>	0,8	0,4	0,2	-0,0	-0,2	-0,3
Employment	0,5	0,5	0,4	0,3	0,2	0,1
Unemployment rate <sup>1</sup>	-0,4	-0,4	-0,3	-0,2	-0,2	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,9	-1,0	-1,1	-1,2	-1,3
Current balance (% GDP) <sup>1</sup>	-0,3	-0,4	-0,6	-0,7	-0,7	-0,8
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.19**

**Unlinked Quest simulation for France: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,1	1,3	1,2	1,1	1,0	0,9
Nominal GDP	1,0	1,7	2,2	2,8	3,4	4,1
Real private consumption	0,2	0,3	0,4	0,5	0,6	0,7
Real private investment	1,4	2,4	2,9	3,2	3,3	3,3
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,3	0,1	0,0	0,0	-0,0
Real exports	0,0	-0,1	-0,4	-0,7	-1,0	-1,3
Real imports	1,9	2,4	2,6	2,7	2,9	3,2
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,7	-0,8	-0,9	-1,1
Consumption deflator	0,0	0,4	0,9	1,5	2,1	2,6
Export deflator	0,0	0,3	0,7	1,1	1,5	1,9
Import deflator	0,1	0,1	0,1	0,1	0,0	0,0
Nominal wage rate	0,3	0,8	1,5	2,2	3,0	3,8
Real unit labour cost	-0,6	-0,5	-0,3	-0,1	0,0	0,1
Capacity utilization rate <sup>1</sup>	0,9	1,0	0,8	0,6	0,5	0,3
Employment	0,1	0,3	0,4	0,4	0,4	0,4
Unemployment rate <sup>1</sup>	-0,1	-0,3	-0,4	-0,4	-0,4	-0,3
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,7	-0,7	-0,8	-0,9	-0,9
Current balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,6	-0,6	-0,7	-0,7
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.20**

**Unlinked Quest simulation for Ireland: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

*(percentage differences from baseline, unless otherwise stated)*

	1990	1991	1992	1993	1994	1995
Real GDP	0.9	0.8	0.8	<b>0.9</b>	0.9	0.9
Nominal GDP	0.9	0.9	1.0	1.1	1.2	1.4
Real private consumption	0.3	0.4	0.5	<b>0.6</b>	0.6	0.7
Real private investment	1.7	1.1	0.9	<b>0.9</b>	0.9	0.9
Stockbuilding (% GDP) <sup>1</sup>	0.1	0.0	0.0	<b>0.0</b>	0.0	0.0
Real exports	0.0	0.0	-0.0	-0.0	-0.0	-0.1
Real imports	1.4	1.4	1.5	1.5	1.6	1.7
Real foreign balance (% GDP) <sup>1</sup>	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7
Consumption deflator	-0.0	-0.0	0.0	0.1	0.1	0.2
Export deflator	0.0	0.0	0.1	0.1	0.2	0.3
Import deflator	0.1	0.1	0.1	0.1	0.1	0.0
Nominal wage rate	0.2	0.3	0.3	0.5	0.6	0.7
Real unit labour cost	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3
Capacity utilization rate <sup>1</sup>	0.4	0.4	0.3	<b>0.3</b>	0.3	0.3
Employment	0.2	0.3	0.3	<b>0.3</b>	0.3	0.3
Unemployment rate <sup>1</sup>	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
Budget balance (% GDP) <sup>1</sup>	-1.1	-1.1	-1.2	-1.3	-1.4	-1.5
Current balance (% GDP) <sup>1</sup>	-0.6	-0.5	-0.5	-0.6	-0.6	-0.5
Long-term interest rate <sup>1</sup>	0.0	0.0	0.0	0.0	0.0	0.0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.21**

**Unlinked Quest simulation for Italy: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

*(percentage differences from baseline, unless otherwise stated)*

	1990	1991	1992	1993	1994	1995
Real GDP	1.0	1.1	1.0	<b>0.9</b>	0.8	0.6
Nominal GDP	1.3	1.9	2.4	3.0	3.8	4.5
Real private consumption	0.2	0.3	0.4	<b>0.4</b>	0.3	0.2
Real private investment	1.8	2.8	2.3	<b>2.0</b>	1.8	1.7
Stockbuilding (% GDP) <sup>1</sup>	0.2	0.2	0.2	<b>0.2</b>	0.2	0.1
Real exports	-0.0	-0.1	-0.3	-0.5	-0.8	-1.1
Real imports	2.0	2.5	2.5	2.4	2.4	2.3
Real foreign balance (% GDP) <sup>1</sup>	-0.5	-0.6	-0.7	-0.8	-0.8	-0.9
Consumption deflator	0.0	0.3	0.8	1.3	2.0	2.8
Export deflator	0.1	0.3	0.5	0.8	1.2	1.6
Import deflator	0.0	-0.0	-0.1	-0.1	-0.0	-0.0
Nominal wage rate	0.3	0.8	1.5	2.2	3.1	4.1
Real unit labour cost	-0.9	-0.8	-0.6	-0.4	-0.2	-0.0
Capacity utilization rate <sup>1</sup>	0.7	0.6	0.5	<b>0.4</b>	0.2	0.1
Employment	0.1	0.2	0.3	<b>0.4</b>	0.4	0.3
Unemployment rate <sup>1</sup>	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
Budget balance (% GDP) <sup>1</sup>	-1.1	-1.3	-1.5	-1.8	-2.1	-2.4
Current balance (% GDP) <sup>1</sup>	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2
Long-term interest rate <sup>1</sup>	0.0	0.0	0.0	0.0	0.0	0.0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.22**

**Unlinked Quest simulation for the Netherlands: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,7	0,7	0,7	0,6	0,6	0,6
Nominal GDP	1,1	1,4	1,4	1,3	1,2	1,2
Real private consumption	0,4	0,6	0,7	0,7	0,7	0,7
Real private investment	1,4	2,4	2,4	1,6	0,7	0,3
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,1	0,0	-0,1	-0,1	-0,1
Real exports	-0,0	-0,1	-0,1	-0,1	-0,1	-0,1
Real imports	1,3	1,8	1,8	1,5	1,3	1,3
Real foreign balance (% GDP) <sup>1</sup>	-1,0	-1,2	-1,2	-1,1	-0,9	-0,9
Consumption deflator	0,2	0,4	0,4	0,4	0,3	0,3
Export deflator	0,2	0,2	0,2	0,2	0,2	0,2
Import deflator	0,2	0,2	0,2	0,1	0,1	0,1
Nominal wage rate	0,3	0,6	0,7	0,8	0,8	0,9
Real unit labour cost	-0,7	-0,6	-0,4	-0,2	-0,0	0,0
Capacity utilization rate <sup>1</sup>	0,6	0,5	0,3	0,1	-0,0	-0,0
Employment	0,1	0,2	0,3	0,3	0,4	0,4
Unemployment rate <sup>1</sup>	-0,1	-0,2	-0,3	-0,3	-0,3	-0,3
Budget balance (% GDP) <sup>1</sup>	-0,9	-0,9	-0,9	-1,0	-1,0	-1,0
Current balance (% GDP) <sup>1</sup>	-0,7	-0,9	-0,8	-0,7	-0,6	-0,5
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.23**

**Unlinked Quest simulation for Portugal: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,8	0,9	0,6	0,2	-0,2	-0,3
Nominal GDP	1,1	2,0	3,1	3,8	3,8	3,1
Real private consumption	0,2	0,5	0,8	1,0	0,9	0,6
Real private investment	0,4	1,4	1,3	0,8	0,2	-0,4
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,0	-0,2	-0,4	-0,7	-0,9	-1,0
Real imports	0,9	1,8	2,8	3,6	3,7	3,2
Real foreign balance (% GDP) <sup>1</sup>	-0,4	-0,9	-1,4	-1,8	-1,9	-1,7
Consumption deflator	0,2	0,9	1,9	2,8	3,0	2,6
Export deflator	0,1	0,5	1,1	1,5	1,7	1,4
Import deflator	0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Nominal wage rate	0,2	1,6	3,3	4,4	4,5	3,6
Real unit labour cost	-0,6	-0,2	0,1	0,3	0,3	0,2
Capacity utilization rate <sup>1</sup>	0,6	0,6	0,3	-0,0	-0,2	-0,3
Employment	0,3	0,2	0,0	-0,2	-0,3	-0,2
Unemployment rate <sup>1</sup>	-0,3	-0,2	-0,0	0,2	0,2	0,2
Budget balance (% GDP) <sup>1</sup>	1,0	1,1	1,2	1,3	1,4	1,6
Current balance (% GDP) <sup>1</sup>	-0,3	-0,6	-0,9	-1,2	-1,3	-1,2
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.24**

**Unlinked Quest simulation for the United Kingdom: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,0	1,1	1,0	0,8	0,7	0,6
Nominal GDP	0,9	1,4	1,7	2,0	2,3	2,6
Real private consumption	0,3	0,6	0,6	0,6	0,5	0,5
Real private investment	1,1	1,9	1,4	0,9	0,7	0,7
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,1	0,1	0,0	0,0	0,0
Real exports	0,1	-0,1	-0,2	-0,4	-0,6	-0,8
Real imports	1,4	1,9	1,9	1,8	1,8	1,9
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,7	-0,8	-0,8	-0,8	-0,9
Consumption deflator	0,0	0,2	0,6	1,0	1,3	1,7
Export deflator	-0,0	0,2	0,4	0,7	1,0	1,2
Import deflator	0,1	0,0	-0,0	-0,0	-0,0	-0,0
Nominal wage rate	0,3	0,8	1,3	1,8	2,2	2,6
Real unit labour cost	-0,5	-0,3	-0,0	0,2	0,2	0,3
Capacity utilization rate <sup>1</sup>	0,8	0,8	0,7	0,5	0,4	0,3
Employment	0,1	0,3	0,4	0,4	0,3	0,3
Unemployment rate <sup>1</sup>	-0,1	-0,3	-0,3	-0,3	-0,3	-0,2
Budget balance (% GDP) <sup>1</sup>	-0,6	-0,5	-0,5	-0,6	-0,6	-0,7
Current balance (% GDP) <sup>1</sup>	-0,4	-0,5	-0,4	-0,4	-0,3	-0,3
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.25**

**Unlinked Quest simulation for the United States: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed**

	<i>(percentage differences from baseline, unless otherwise stated)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	1,6	1,6	0,9	0,5	0,3	0,3
Nominal GDP	1,5	2,2	2,4	2,8	3,4	4,2
Real private consumption	0,7	0,9	0,4	0,1	0,1	0,3
Real private investment	2,6	3,0	1,3	0,6	1,0	1,5
Stockbuilding (% GDP) <sup>1</sup>	0,2	0,2	0,1	0,0	-0,0	-0,0
Real exports	-0,0	-0,1	-0,5	-0,8	-1,2	-1,6
Real imports	3,0	3,6	3,1	3,0	3,7	4,5
Real foreign balance (% GDP) <sup>1</sup>	-0,5	-0,6	-0,6	-0,7	-0,9	-1,1
Consumption deflator	0,0	0,6	1,4	2,1	2,8	3,4
Export deflator	-0,0	0,5	1,3	2,0	2,7	3,4
Import deflator	-0,0	0,0	0,0	0,0	-0,0	-0,0
Nominal wage rate	0,6	1,5	2,2	2,9	3,7	4,4
Real unit labour cost	-0,3	0,1	0,3	0,4	0,3	0,2
Capacity utilization rate <sup>1</sup>	1,2	1,1	0,4	0,0	-0,1	-0,2
Employment	0,6	0,8	0,5	0,2	0,1	0,0
Unemployment rate <sup>1</sup>	-0,5	-0,8	-0,5	-0,2	-0,0	-0,0
Budget balance (% GDP) <sup>1</sup>	-0,5	-0,3	-0,4	-0,6	-0,8	-0,8
Current balance (% GDP) <sup>1</sup>	-0,4	-0,4	-0,3	-0,3	-0,3	-0,4
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

Table 7.26

Unlinked Quest simulation for Japan: increase in public investment by 1% of baseline GDP  
nominal interest rates fixed

(percentage differences from baseline, unless otherwise stated)

	1990	1991	1992	1993	1994	1995
Real GDP	1,8	1,4	1,2	0,9	0,5	0,0
Nominal GDP	1,7	2,3	2,8	3,6	4,5	5,4
Real private consumption	0,5	0,6	0,7	0,6	0,5	0,3
Real private investment	2,4	1,0	0,7	0,7	0,5	0,4
Stockbuilding (% GDP) <sup>1</sup>	0,1	0,2	0,1	0,0	-0,0	-0,1
Real exports	0,1	-0,3	-0,8	-1,3	-1,9	-2,5
Real imports	1,6	1,7	1,9	2,2	2,4	2,8
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,3	-0,5	-0,6	-0,9	-1,1
Consumption deflator	-0,1	0,7	1,4	2,2	3,3	4,5
Export deflator	-0,0	0,4	0,8	1,2	1,7	2,2
Import deflator	0,0	0,1	0,1	0,2	0,2	0,3
Nominal wage rate	0,8	1,3	1,9	2,7	3,7	4,9
Real unit labour cost	-0,5	-0,3	-0,1	0,0	0,1	0,1
Capacity utilization rate <sup>1</sup>	1,3	1,0	0,8	0,6	0,3	-0,1
Employment	0,3	0,7	0,9	0,9	0,8	0,6
Unemployment rate <sup>1</sup>	-0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Budget balance (% GDP) <sup>1</sup>	-0,7	-0,7	-0,7	-0,7	-0,8	-0,9
Current balance (% GDP) <sup>1</sup>	-0,2	-0,2	-0,2	-0,2	-0,3	-0,3
Long-term interest rate <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0

<sup>1</sup> Differences from baseline in percentage points.

with the important trading partners of the USA, would be affected to a degree which is at most half of the effect in Japan. The effect on prices in the EC countries, on the other hand, is larger than in Japan because they are more open to imports.

The easiest way of looking at the effects of the US dollar depreciation is to realize that it has the immediate consequence of raising US import prices by 10%, assuming that they are all denoted in foreign currency. At the same time, the real prices of the trading partners of the USA in their national currencies decrease in accordance with their share in total US exports. Without any change in the trade volumes, this would merely imply a redistribution of income over the countries of the world showing up in their current balances. Indeed, in the first year of the simulation, when real exports and imports have hardly had time to react to the changes in relative prices, the current balance of the USA suffers a small deterioration, while some of the other countries experience a short-lived improvement in the current account of their balance of payments.

The secondary effects are much more important. The value of US exports increases while imports decrease due to the gain in price competitiveness. After the deterioration of the US current balance in the first year, the positive effect of

the real foreign balance leads to a long-term improvement of the current balance. The profile is known as the *J-curve* effect, and its mirror can be observed in most of the other countries.

The secondary effects on prices are also very prominent. They induce the eventual return to the baseline. As in the case of the government investment shocks, an increase or decrease in inflation tends to stick for some time, but in this linked simulation a deceleration is clearly discernible. The fall in import prices has the lagged effect of decreasing export prices in the structural models, which is mimicked by the reduced form of the trade-feedback models. They are fed back into the trade linkage system and come out as decreases in import prices and competitors' export prices. In US dollar terms, these prices would still go up in the USA, but by less than the 10 % of the US dollar depreciation. This slowly erodes the improvement in the US current balance after the third year of the simulation.

A crucial element in this simulation is that wages and prices in the USA react more slowly to the increase in import prices than those in other countries do to the decrease. There is a general tendency for prices to decrease at world level, and this has a positive effect on world demand via the real wealth effect.

**Table 7.27**

**Linked Quest simulation for Belgium: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,2	-0,2	0,3	0,4	0,3	0,2
Nominal GDP	-0,2	-2,1	-3,2	-3,9	-4,3	-4,6
Real private consumption	0,2	0,8	0,9	0,7	0,5	0,3
Real private investment	-0,2	0,1	0,9	0,8	0,6	0,4
Stockbuilding (% GDP) <sup>1</sup>	-0,0	-0,2	-0,0	0,1	0,1	0,1
Real exports	-0,4	-0,6	0,1	0,4	0,3	0,2
Real imports	-0,1	0,2	0,7	0,8	0,6	0,4
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,6	-0,5	-0,4	-0,3	-0,2
Consumption deflator	-0,4	-2,2	-3,4	-4,1	-4,5	-4,6
Export deflator	-0,5	-2,7	-3,8	-4,3	-4,6	-4,7
Import deflator	-1,0	-3,1	-3,8	-4,2	-4,4	-4,6
Nominal wage rate	-0,3	-2,0	-3,3	-4,0	-4,3	-4,5
Real unit labour cost	-0,1	0,0	-0,1	-0,0	0,1	0,2
Capacity utilization rate <sup>1</sup>	-0,2	-0,1	0,2	0,2	0,2	0,1
Employment	-0,0	-0,0	0,0	0,1	0,1	0,1
Unemployment rate <sup>1</sup>	0,0	0,0	-0,0	-0,1	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,0	0,4	0,8	1,1	1,2	1,4
Current balance (% GDP) <sup>1</sup>	0,1	-0,5	-0,7	-0,9	-0,9	-1,0
Long-term interest rate <sup>1</sup>	-0,2	-2,5	-1,2	-0,6	-0,3	-0,1

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.28**

**Linked Quest simulation for Denmark: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,1	-0,1	0,4	0,6	0,5	0,5
Nominal GDP	-0,4	-1,1	-1,8	-2,5	-3,0	-3,3
Real private consumption	0,2	1,0	1,7	1,8	1,6	1,3
Real private investment	-0,1	0,2	1,0	0,9	0,8	0,6
Stockbuilding (% GDP) <sup>1</sup>	-0,0	-0,0	0,1	0,0	0,0	-0,0
Real exports	-0,4	-1,0	-0,9	-0,7	-0,6	-0,4
Real imports	0,1	0,5	0,7	0,6	0,4	0,3
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-0,6	-0,7	-0,6	-0,4	-0,3
Consumption deflator	-0,3	-1,5	-2,5	-3,2	-3,6	-3,8
Export deflator	-0,4	-1,7	-2,7	-3,3	-3,7	-3,9
Import deflator	-0,7	-2,6	-3,1	-3,4	-3,5	-3,5
Nominal wage rate	-0,3	-1,3	-2,2	-2,9	-3,3	-3,5
Real unit labour cost	0,1	-0,1	-0,3	-0,2	-0,2	-0,1
Capacity utilization rate <sup>1</sup>	-0,1	-0,1	0,2	0,3	0,2	0,2
Employment	-0,0	0,1	0,2	0,2	0,1	0,1
Unemployment rate <sup>1</sup>	0,0	-0,1	-0,2	-0,2	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,1	-0,0	0,1	-0,0	-0,2	-0,3
Current balance (% GDP) <sup>1</sup>	-0,1	-0,3	-0,5	-0,6	-0,6	-0,6
Long-term interest rate <sup>1</sup>	-0,3	-1,1	-1,3	-1,0	-0,7	-0,4

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.29**

**Linked Quest simulation for Germany: depreciation of the US dollar by 10% against all other currencies**  
**real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,3	-0,6	-0,3	-0,0	0,0	0,0
Nominal GDP	-0,1	-1,2	-2,0	-2,6	-3,2	-3,7
Real private consumption	0,1	0,4	0,7	0,8	0,8	0,6
Real private investment	-0,1	-0,1	0,8	1,0	0,6	0,2
Stockbuilding (% GDP) <sup>1</sup>	-0,0	-0,1	-0,0	0,0	0,0	0,0
Real exports	-0,7	-1,7	-1,3	-0,9	-0,6	-0,3
Real imports	0,1	0,5	1,0	1,1	0,9	0,7
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,8	-0,8	-0,7	-0,5	-0,4
Consumption deflator	-0,2	-1,3	-2,3	-3,1	-3,6	-4,0
Export deflator	-0,2	-1,5	-2,4	-3,2	-3,7	-4,0
Import deflator	-1,4	-3,7	-4,3	-4,6	-4,8	-4,9
Nominal wage rate	-0,2	-1,4	-2,4	-3,1	-3,6	-3,9
Real unit labour cost	-0,1	-0,3	-0,5	-0,4	-0,3	-0,2
Capacity utilization rate <sup>1</sup>	-0,2	-0,5	-0,2	-0,0	0,0	-0,0
Employment	-0,0	-0,1	-0,1	0,1	0,1	0,1
Unemployment rate <sup>1</sup>	0,0	0,1	0,1	-0,0	-0,1	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,0	0,0	0,2	0,5	0,6	0,7
Current balance (% GDP) <sup>1</sup>	0,1	-0,1	-0,2	-0,3	-0,2	-0,1
Long-term interest rate <sup>1</sup>	0,1	-1,2	-1,1	-0,8	-0,6	-0,4

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.30**

**Linked Quest simulation for Greece: depreciation of the US dollar by 10% against all other currencies**  
**real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,1	-0,1	-0,0	0,3	0,5	0,8
Nominal GDP	-0,4	-1,8	-2,9	-3,8	-4,6	-5,2
Real private consumption	0,3	0,9	1,4	1,7	1,8	1,9
Real private investment	-0,0	-0,1	-0,0	0,4	0,6	0,8
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,5	-1,3	-1,5	-1,5	-1,2	-0,8
Real imports	0,3	1,0	1,1	1,1	0,9	0,7
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,8	-0,9	-0,9	-0,8	-0,6
Consumption deflator	-0,6	-2,1	-3,3	-4,4	-5,3	-6,0
Export deflator	-0,7	-2,5	-3,5	-4,4	-5,1	-5,6
Import deflator	-1,3	-3,4	-4,3	-5,1	-5,7	-6,0
Nominal wage rate	-0,2	-1,4	-2,7	-3,8	-4,8	-5,5
Real unit labour cost	0,1	0,3	0,2	0,0	-0,2	-0,3
Capacity utilization rate <sup>1</sup>	-0,0	-0,1	-0,0	0,2	0,3	0,5
Employment	-0,0	-0,1	-0,1	-0,0	0,0	0,1
Unemployment rate <sup>1</sup>	0,0	0,1	0,1	0,0	-0,0	-0,1
Budget balance (% GDP) <sup>1</sup>	0,1	0,5	0,9	1,3	1,6	1,8
Current balance (% GDP) <sup>1</sup>	0,0	-0,2	-0,1	-0,0	0,1	0,2
Long-term interest rate <sup>1</sup>	-0,4	-1,5	-1,8	-1,8	-1,5	-1,3

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.31**

**Linked Quest simulation for Spain: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0.4	-0.8	-0.4	-0.2	-0.0	0.2
Nominal GDP	-1.1	-3.2	-3.8	-4.3	-4.6	-4.8
Real private consumption	0.1	0.3	0.6	0.8	1.0	1.1
Real private investment	-0.9	-1.7	-0.4	-0.0	0.2	0.4
Stockbuilding (% GDP) <sup>1</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Real exports	-1.9	-5.3	-6.2	-6.6	-6.6	-6.2
Real imports	-0.3	-0.8	-0.9	-0.9	-0.8	-0.8
Real foreign balance (% GDP) <sup>1</sup>	-0.2	-0.7	-0.8	-0.8	-0.8	-0.8
Consumption deflator	-0.8	-2.7	-3.6	-4.2	-4.6	-4.9
Export deflator	-0.8	-2.7	-3.4	-3.8	-4.2	-4.4
Import deflator	-1.0	-3.2	-3.8	-4.1	-4.3	-4.4
Nominal wage rate	-0.6	-2.1	-3.0	-3.6	-4.1	-4.4
Real unit labour cost	0.3	0.6	0.4	0.3	0.2	0.1
Capacity utilization rate <sup>1</sup>	-0.2	-0.5	-0.2	-0.1	0.1	0.2
Employment	-0.2	-0.5	-0.5	-0.5	-0.4	-0.3
Unemployment rate <sup>1</sup>	0.1	0.4	0.4	0.3	0.3	0.2
Budget balance (% GDP) <sup>1</sup>	0.0	0.1	0.2	0.1	0.0	-0.0
Current balance (% GDP) <sup>1</sup>	-0.2	-0.3	-0.4	-0.4	-0.3	-0.3
Long-term interest rate <sup>1</sup>	-0.3	-1.0	-1.2	-1.1	-1.0	-0.8

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.32**

**Linked Quest simulation for France: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0.2	-0.3	0.1	0.2	0.2	0.2
Nominal GDP	-0.2	-1.4	-2.5	-3.3	-3.9	-4.3
Real private consumption	0.1	0.6	0.9	1.0	0.9	0.7
Real private investment	-0.2	-0.2	-0.0	-0.2	-0.3	-0.4
Stockbuilding (% GDP) <sup>1</sup>	-0.0	-0.0	0.1	0.1	0.0	-0.0
Real exports	-0.7	-1.6	-1.1	-0.8	-0.6	-0.5
Real imports	0.0	0.7	1.1	1.0	0.6	0.3
Real foreign balance (% GDP) <sup>1</sup>	-0.2	-0.6	-0.6	-0.4	-0.3	-0.2
Consumption deflator	-0.2	-1.5	-2.8	-3.7	-4.2	-4.5
Export deflator	-0.4	-2.2	-3.2	-3.9	-4.3	-4.6
Import deflator	-1.3	-3.6	-4.2	-4.5	-4.7	-4.8
Nominal wage rate	-0.1	-1.3	-2.6	-3.5	-4.1	-4.4
Real unit labour cost	0.0	0.0	-0.2	-0.2	-0.1	-0.0
Capacity utilization rate <sup>1</sup>	-0.1	-0.2	0.1	0.2	0.2	0.1
Employment	-0.0	-0.0	-0.0	0.0	0.1	0.1
Unemployment rate <sup>1</sup>	0.0	0.0	0.0	-0.0	-0.1	-0.1
Budget balance (% GDP) <sup>1</sup>	-0.0	-0.0	0.1	0.1	0.1	0.1
Current balance (% GDP) <sup>1</sup>	0.0	-0.2	-0.3	-0.3	-0.2	-0.1
Long-term interest rate <sup>1</sup>	-0.1	-1.7	-1.2	-0.8	-0.5	-0.3

<sup>1</sup> Differences from baseline in percentage points.



**Table 7.33**

**Linked Quest simulation for Ireland: depreciation of the US dollar by 10% against all other currencies**  
**real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,1	0,0	0,2	0,0	-0,1	-0,2
Nominal GDP	-0,5	-1,6	-2,3	-2,9	-3,3	-3,5
Real private consumption	0,1	0,6	1,0	0,8	0,6	0,3
Real private investment	-0,0	0,5	0,8	0,2	-0,1	-0,2
Stockbuilding (% GDP) <sup>1</sup>	-0,0	0,0	0,0	-0,0	-0,0	-0,0
Real exports	-0,5	-1,0	-0,8	-0,7	-0,7	-0,7
Real imports	0,0	0,4	0,8	0,6	0,4	0,2
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-0,5	-0,6	-0,5	-0,4	-0,3
Consumption deflator	-0,7	-2,2	-2,9	-3,3	-3,4	-3,5
Export deflator	-0,6	-1,9	-2,8	-3,2	-3,4	-3,5
Import deflator	-1,1	-3,2	-3,6	-3,9	-3,9	-3,8
Nominal wage rate	-0,5	-1,7	-2,7	-3,3	-3,5	-3,6
Real unit labour cost	0,0	-0,2	-0,4	-0,3	-0,2	-0,2
Capacity utilization rate <sup>1</sup>	-0,0	-0,0	0,1	-0,0	-0,1	-0,1
Employment	-0,0	0,0	0,1	0,1	0,0	0,0
Unemployment rate <sup>1</sup>	0,0	-0,0	-0,0	-0,0	-0,0	-0,0
Budget balance (% GDP) <sup>1</sup>	0,1	0,7	1,2	1,6	1,8	2,0
Current balance (% GDP) <sup>1</sup>	0,1	0,2	0,0	0,1	0,1	0,0
Long-term interest rate <sup>1</sup>	-0,4	-1,2	-0,9	-0,5	-0,2	-0,1

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.34**

**Linked Quest simulation for Italy: depreciation of the US dollar by 10% against all other currencies**  
**real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,2	-0,3	-0,0	0,2	0,3	0,4
Nominal GDP	-0,2	-1,0	-1,6	-2,2	-2,8	-3,3
Real private consumption	0,0	0,3	0,7	0,9	1,0	1,0
Real private investment	-0,2	-0,6	0,1	0,6	0,6	0,4
Stockbuilding (% GDP) <sup>1</sup>	-0,0	-0,1	-0,0	0,0	0,1	0,1
Real exports	-0,7	-1,4	-1,0	-0,8	-0,6	-0,5
Real imports	-0,2	0,0	0,6	1,0	1,1	1,0
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-0,4	-0,4	-0,5	-0,5	-0,4
Consumption deflator	-0,1	-0,9	-1,9	-2,7	-3,3	-3,8
Export deflator	-0,6	-2,3	-3,1	-3,6	-3,9	-4,2
Import deflator	-1,1	-3,1	-3,7	-4,0	-4,2	-4,3
Nominal wage rate	-0,1	-0,8	-1,8	-2,6	-3,2	-3,7
Real unit labour cost	0,1	0,2	-0,2	-0,4	-0,4	-0,4
Capacity utilization rate <sup>1</sup>	-0,2	-0,2	0,0	0,2	0,2	0,2
Employment	-0,0	-0,1	-0,1	-0,0	0,0	0,1
Unemployment rate <sup>1</sup>	0,0	0,1	0,1	0,0	-0,0	-0,1
Budget balance (% GDP) <sup>1</sup>	-0,0	0,3	0,9	1,5	2,0	2,4
Current balance (% GDP) <sup>1</sup>	-0,1	-0,2	-0,3	-0,3	-0,2	-0,2
Long-term interest rate <sup>1</sup>	-0,0	-1,0	-0,9	-0,8	-0,6	-0,5

<sup>1</sup> Differences from baseline in percentage points.

Table 7.35

Linked Quest simulation for the Netherlands: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,4	-0,6	-0,4	-0,2	-0,2	-0,1
Nominal GDP	-0,5	-2,6	-3,7	-4,4	-4,8	-5,0
Real private consumption	-0,1	-0,2	-0,2	-0,1	-0,1	-0,0
Real private investment	-0,5	-1,2	-1,5	-0,9	-0,3	0,1
Stockbuilding (% GDP) <sup>1</sup>	-0,1	-0,1	-0,0	0,1	0,1	0,1
Real exports	-0,4	-0,8	-0,4	-0,3	-0,3	-0,4
Real imports	-0,2	-0,5	-0,4	-0,2	-0,1	-0,1
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-0,2	-0,0	-0,1	-0,1	-0,2
Consumption deflator	-0,3	-2,1	-3,3	-4,1	-4,6	-4,8
Export deflator	-0,7	-3,0	-3,9	-4,3	-4,6	-4,7
Import deflator	-1,2	-3,5	-4,1	-4,5	-4,6	-4,7
Nominal wage rate	-0,2	-1,7	-3,2	-4,1	-4,7	-5,0
Real unit labour cost	0,3	0,7	0,3	0,0	-0,1	-0,2
Capacity utilization rate <sup>1</sup>	-0,3	-0,5	-0,2	0,0	0,1	0,2
Employment	-0,0	-0,2	-0,2	-0,2	-0,2	-0,2
Unemployment rate <sup>1</sup>	0,0	0,1	0,2	0,2	0,2	0,1
Budget balance (% GDP) <sup>1</sup>	-0,0	0,2	0,4	0,5	0,6	0,7
Current balance (% GDP) <sup>1</sup>	0,1	-0,2	-0,3	-0,4	-0,5	-0,6
Long-term interest rate <sup>1</sup>	-0,6	-2,0	-1,2	-0,7	-0,4	-0,3

<sup>1</sup> Differences from baseline in percentage points.

Table 7.36

Linked Quest simulation for Portugal: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,3	-0,8	-0,3	0,7	1,5	1,7
Nominal GDP	-0,6	-2,4	-4,5	-5,9	-6,2	-5,5
Real private consumption	0,0	-0,1	0,1	0,4	0,8	1,2
Real private investment	-0,1	-0,7	-0,9	-0,3	0,6	1,1
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,0	0,0	0,0	0,0	0,0
Real exports	-0,6	-1,6	-1,9	-1,8	-1,6	-1,4
Real imports	0,2	0,3	-0,8	-1,9	-2,2	-1,7
Real foreign balance (% GDP) <sup>1</sup>	-0,3	-0,6	-0,1	0,4	0,6	0,5
Consumption deflator	-0,4	-1,9	-3,9	-5,7	-6,4	-6,1
Export deflator	-0,8	-2,7	-4,1	-5,2	-5,7	-5,5
Import deflator	-1,2	-3,3	-3,7	-3,9	-4,0	-4,0
Nominal wage rate	-0,2	-1,5	-4,5	-6,9	-7,5	-6,3
Real unit labour cost	0,3	0,5	-0,1	-0,6	-0,7	-0,4
Capacity utilization rate <sup>1</sup>	-0,2	-0,6	-0,1	0,6	1,1	1,2
Employment	-0,2	-0,4	-0,1	0,3	0,5	0,4
Unemployment rate <sup>1</sup>	0,1	0,4	0,1	-0,3	-0,5	-0,4
Budget balance (% GDP) <sup>1</sup>	0,0	0,1	-0,0	-0,1	-0,1	-0,1
Current balance (% GDP) <sup>1</sup>	-0,1	-0,2	-0,0	0,2	0,3	0,3
Long-term interest rate <sup>1</sup>	-0,1	-0,8	-1,7	-1,8	-1,1	0,0

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.37**

**Linked Quest simulation for the United Kingdom: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0,2	-0,2	0,3	0,6	0,5	0,2
Nominal GDP	0,1	-0,5	-1,3	-1,9	-2,4	-2,9
Real private consumption	0,1	1,0	1,7	2,0	1,8	1,4
Real private investment	-0,2	0,6	1,6	1,9	1,2	0,3
Stockbuilding (% GDP) <sup>1</sup>	-0,0	-0,0	0,0	0,0	0,0	0,0
Real exports	-0,6	-1,6	-1,3	-1,0	-0,9	-0,7
Real imports	0,2	1,5	2,4	2,5	2,2	1,6
Real foreign balance (% GDP) <sup>1</sup>	-0,2	-1,0	-1,3	-1,3	-1,1	-0,9
Consumption deflator	-0,1	-1,2	-2,4	-3,2	-3,6	-3,8
Export deflator	-0,4	-1,9	-2,9	-3,5	-3,8	-4,0
Import deflator	-1,6	-4,2	-4,7	-4,9	-5,0	-5,0
Nominal wage rate	-0,1	-0,9	-1,9	-2,5	-2,9	-3,2
Real unit labour cost	-0,1	-0,3	-0,5	-0,5	-0,2	-0,0
Capacity utilization rate <sup>1</sup>	-0,2	-0,2	0,2	0,4	0,3	0,1
Employment	-0,0	-0,0	0,1	0,2	0,3	0,3
Unemployment rate <sup>1</sup>	0,0	0,0	-0,1	-0,2	-0,2	-0,2
Budget balance (% GDP) <sup>1</sup>	0,0	0,1	0,3	0,4	0,5	0,5
Current balance (% GDP) <sup>1</sup>	0,2	0,0	-0,2	-0,2	-0,2	-0,1
Long-term interest rate <sup>1</sup>	0,5	-1,3	-1,2	-0,7	-0,4	-0,1

<sup>1</sup> Differences from baseline in percentage points.

**Table 7.38**

**Linked Quest simulation for the United States: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed**

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	0,6	1,2	0,9	0,6	0,5	0,5
Nominal GDP	0,2	1,2	1,6	2,1	2,7	3,4
Real private consumption	-0,1	-0,1	-0,4	-0,6	-0,6	-0,4
Real private investment	0,5	0,6	-0,1	-0,8	-0,6	-0,3
Stockbuilding (% GDP) <sup>1</sup>	0,0	0,1	0,0	-0,0	-0,0	-0,0
Real exports	1,1	2,1	2,0	1,6	1,3	1,0
Real imports	-2,0	-4,4	-4,2	-3,9	-3,3	-2,5
Real foreign balance (% GDP) <sup>1</sup>	0,5	1,1	1,2	1,1	1,0	0,8
Consumption deflator	0,2	1,0	1,6	2,3	2,9	3,4
Export deflator	0,2	1,3	1,8	2,4	3,0	3,5
Import deflator	3,5	6,1	5,8	5,7	5,5	5,4
Nominal wage rate	0,2	1,0	1,6	2,4	3,1	3,7
Real unit labour cost	0,0	0,2	0,4	0,5	0,4	0,4
Capacity utilization rate <sup>1</sup>	0,4	0,9	0,6	0,4	0,3	0,3
Employment	0,1	0,5	0,4	0,1	0,0	0,0
Unemployment rate <sup>1</sup>	-0,1	-0,4	-0,3	-0,1	-0,0	-0,0
Budget balance (% GDP) <sup>1</sup>	0,1	0,2	0,1	-0,0	-0,1	-0,1
Current balance (% GDP) <sup>1</sup>	-0,0	0,2	0,2	0,3	0,2	0,2
Long-term interest rate <sup>1</sup>	-0,5	0,7	0,7	0,8	0,7	0,7

<sup>1</sup> Differences from baseline in percentage points.

Table 7.39

Linked Quest simulation for Japan: depreciation of the US dollar by 10% against all other currencies  
real interest rates fixed

	<i>(percentage differences from baseline levels)</i>					
	1990	1991	1992	1993	1994	1995
Real GDP	-0.5	-1.2	-0.8	-0.6	-0.4	-0.1
Nominal GDP	-0.3	-1.4	-1.7	-2.0	-2.4	-2.8
Real private consumption	-0.0	-0.0	0.1	0.2	0.4	0.5
Real private investment	-0.7	-1.3	0.2	0.8	0.9	1.1
Stockbuilding (% GDP) <sup>1</sup>	-0.0	-0.1	-0.1	-0.1	-0.0	0.0
Real exports	-1.2	-2.9	-2.8	-2.6	-2.1	-1.5
Real imports	0.1	0.8	1.1	1.1	1.0	0.9
Real foreign balance (% GDP) <sup>1</sup>	-0.2	-0.7	-0.8	-0.9	-0.8	-0.7
Consumption deflator	-0.0	-0.6	-1.4	-2.0	-2.6	-3.2
Export deflator	-0.5	-2.4	-3.0	-3.4	-3.7	-4.0
Import deflator	-1.8	-4.1	-4.4	-4.4	-4.4	-4.4
Nominal wage rate	-0.2	-0.9	-1.4	-1.9	-2.4	-3.0
Real unit labour cost	0.1	0.1	-0.2	-0.3	-0.4	-0.5
Capacity utilization rate <sup>1</sup>	-0.4	-1.0	-0.6	-0.5	-0.4	-0.2
Employment	-0.1	-0.3	-0.5	-0.5	-0.4	-0.3
Unemployment rate <sup>1</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Budget balance (% GDP) <sup>1</sup>	-0.2	-0.1	0.5	0.8	1.2	1.6
Current balance (% GDP) <sup>1</sup>	-0.0	-0.3	-0.4	-0.4	-0.3	-0.3
Long-term interest rate <sup>1</sup>	0.3	-0.7	-0.7	-0.6	-0.7	-0.7

<sup>1</sup> Differences from baseline in percentage points.

## 8. Summary and conclusions

The first version of the Quest model was published in 1989. This version included models for the Federal Republic of Germany, France, the United Kingdom and the United States of America as well as a trade linkage system to describe world trade. Since then the coverage has been completed: the model now consists of 11 blocks for the EC countries and separate blocks for the United States of America and Japan.

Apart from the addition of nine new country blocks, further modification of the existing blocks has taken place. The resulting model is a useful tool for analysing economic developments.

In macroeconomic terms, the character of the model reflects the neoclassical-Keynesian synthesis. The neoclassical aspect emerges for example in the simulated effects of a productivity shock, described in Section 4. The results show that the increase in supply resulting from higher labour productivity to a large extent creates (with a time lag) its own demand. Factors underlying this demand response are, for example, the wealth effect in the consumption function. These consumption effects are multiplied by a factor greater than one,

as a result of the Keynesian accelerator mechanism in the model. A purer demonstration of the Keynesian aspect of the model is given in Section 7. Among other scenarios, simulation results for a demand shock are presented in this section. The results show that the income generated by increasing government investment leads to more consumption while investment is stimulated by higher demand. However, increases in capacity utilization rates and lower levels of unemployment will raise inflation, which leads to a deterioration in international competitiveness, and so to a negative contribution to GDP from international trade.<sup>1</sup>

The standard shocks to government investment applied in Section 7 show that, although the general magnitude and direction of the effects are much the same across countries, the profile over time and the distribution over the components of demand may differ. One factor common to all country models is that the distribution of income over production factors is made to return to baseline proportions, mostly within the period of six years covered by the simulations. A systematic factor behind the differences in the size of the effects in terms of GDP and prices appears to be the degree of openness of the economy. The more prominent

<sup>1</sup> By contrast with Section 7, the simulations in Section 4 are based on an assumption of exogenous exports.

differences can be retraced to the typical features of a country as represented by the model. The flexibility, although for different reasons, of the labour market in Ireland and Japan is one of them. The absence of a real wealth effect in the Netherlands is another. This suggests that it is possible to introduce such features within the parsimonious structure of the model, and that is worth while to do so in order to enhance the richness of its informational contents.

As it stands, the version of Quest set out here is a useful means of evaluating policy. The model will nonetheless be further developed. The following subjects may be regarded as important for future work. It should be borne in mind that the intention here is to establish priorities rather than to provide an exhaustive research agenda.

1. As pointed out in the first section, the approach is followed whereby structural differences between the countries are allowed for only when institutional arrangements or other information on the structure of the economy point to it. Empirical evidence can be a useful source of information of this nature.

Thus while the greater part of research efforts in the past year has been devoted to widening the coverage of the model, the first item on the research agenda will be to test the significance of structural differences in the various models. Existing differences may give rise to a divergence in performance across countries, especially in simulating the model in linked mode. The task of research will therefore be to establish the basis for such differences and the development of a means of handling structural features of the individual economies notably in terms of institutional factors while maintaining or even strengthening the uniform specification.

2. From the simulation results it may be concluded that the model has plausible supply properties. Nevertheless, the supply block is a simple one, at least requiring better theoretical integration with other parts of the model.
3. As regards monetary policy, the model is operated using a facility for imposing different interest and exchange rate regimes. Interest and exchange rates are themselves exogenous. Future work will include the development of a monetary sector in Quest, which will reflect important developments in the European monetary system and the onset of economic and monetary union.
4. The block for the Federal Republic of Germany will be expanded to include the German Democratic Republic, once the data are available.

## Annex 1 — The monetary sector in Quest

Previous versions of the Quest model<sup>1</sup> contained a number of estimated equations in the monetary sector, namely, a money demand function, a reaction function for short-term interest rates and a term-structure equation for long-term interest rates.

The **money demand** function was based on the traditional approach in which a simple transactions demand for money is used as a starting point and the corresponding log-linear equation is estimated with an additional assumption of partial adjustment in terms of actual money balances towards the desired. Real GDP represents a scale variable in this equation, and the short-term interest rate represents the opportunity cost of holding money. Expected inflation, as a proxy for the return on goods and services, is also included. The general form of the equation is as follows

$$\ln (M3/py) = a_0 + a_1 \ln (M3/py) + a_2 (1 - a_1) \ln (y) + a_3 (1 - a_1) \ln (1 + rs) + a_4 (1 - a_1) p\dot{y} \quad (A1.1)$$

where  $M3$  = real money demand  
 $y$  = real GDP  
 $rs$  = short-term nominal interest rate  
 $p\dot{y}$  = inflation rate of the GDP deflator

The reference period for the estimation of this equation was limited to the period of floating exchange rates, a regime which seems outdated following the further development of the European monetary system (EMS) in the direction of the establishment of a monetary union.

The **short term interest rate** was assumed to be managed by the monetary authorities with a view to realizing internal and external targets. The targets which are likely to play a role in monetary policy are included in the estimated equation underneath.

$$rs = a_0 + a_1 rs(-1) + a_2 \dot{y} + a_3 uc + a_4 \dot{pc} + a_5 lur + a_6 M3 + a_7 bpc + a_8 exchr + a_9 rsf \quad (A1.2)$$

where  $rs$  = short-term nominal interest rate  
 $y$  = real GDP  
 $uc$  = capacity utilization rate  
 $pc$  = consumption price inflation  
 $lur$  = unemployment rate  
 $M3$  = nominal money supply growth  
 $bpc$  = balance of payments expressed as a percentage of GDP  
 $exchr$  = exchange rate  
 $rsf$  = foreign short-term interest rate

<sup>1</sup> Bekx *et al.* (1989).

The long-term interest rate equation is based on the assumption that this interest rate is the sum of the current and expected future short-term rates plus a risk premium. Interest rate expectations are assumed to follow an auto-regressive scheme.

Thus the general form of the equation is

$$rl = a_0 + a_1 rl_{-1} + a_2 rs + a_3 pc \quad (A1.3)$$

where  $rl$  = long-term interest rate  
 $rs$  = short-term interest rate  
 $pc$  = consumption price inflation

Although these equations are still available and can technically be used in simulation (for example, in simulations where a constant money stock is assumed), they have not been used during the last two years, because of their obsolete character. Moreover, these equations are not estimated for all of the new country blocks included in the version described here. As stated in the conclusion, future work will concentrate on the specification of monetary sub-models, which are more attuned to recent changes in the nature of monetary relations at the international level.

For the time being, the model has been operated using alternative simplified specifications of monetary regimes, namely, constant interest rates in nominal or real terms, and constant nominal or real exchange rates.

At present, the rate of interest is the only monetary variable with explicit behavioural links with the remainder of the Quest model but the development of a monetary sector will result in the establishment of better inter-relationships with the real sectors.

## Annex 2 — Standard model listing

The variables appearing in the structural module and the linkage block are listed below in alphabetical order. The parameters of the country models have been estimated on data from the following main sources:

B — Wharton Econometric Group  
 DK — Danish Statistical Office  
 D — Deutsches Institut für Wirtschaftsforschung  
 GR — Eurostat  
 E — Organization for Economic Cooperation and Development

F — Institut national de la statistique et des études économiques  
 IRL — Department of Finance, Economic and Social Research Institute (Hermes model databank)  
 I — Prometeia (model databank)  
 NL — Central Planning Bureau (model databank)  
 P — Bank of Portugal  
 UK — Central Statistical Office  
 US — Bureau of Economic Analysis  
 JA — Dutch Central Planning Bureau (model databank).

The trade linkage data are obtained from the Direction of Trade data of the International Monetary Fund with data extracted from the United Nations Trade Statistics.

If necessary, the national datasets are completed using data from other official sources, mostly assembled by the Commission services, and brought in line with the DG II forecasts. The use of reconciliation factors for data from different sources is kept to a minimum. They correct for simplifying pseudo-definitions in the country models, for differences between the base year of price indices in the country models and the trade linkage block, and for differences between c.i.f. (including the cost of carriage, insurance and freight) and f.o.b. (free-on-board) statistics. Finally the estimation residuals are fed back into the model to make sure that the baseline reproduces the historical figures. In summary, the Quest databank is fully consistent with DG II forecast definitions, but, except for the basic national accounts data in current prices, the series are not necessarily exactly the same as the data published by the original source. The databank will be updated biannually from DG II's economic forecasts.

### Variables appearing in the model listing in alphabetical order

BPC	Current balance, national accounts based
BPT	Trade balance, national accounts based
CEQ	Real apparent domestic energy consumption
CG	Nominal general government consumption
CGQ	Real general government consumption
CNWGQ	Real non-wage government consumption
CP	Nominal private consumption
CPQ	Real private consumption
DEBT	General government debt
DEFG	General government deficit
DELTA	Depreciation rate of private equipment
EXCHR	Exchange rate in local currency per US dollar
ICGQ	Real general government investment in construction
IEGQ	Real general government investment in equipment
GOS	Gross operating surplus
IEPQ	Real private fixed investment in equipment
IG	Nominal general government fixed investment
IGQ	Real general government fixed investment
IHPQ	Real private fixed investment in housing

IIT	Total nominal investment in inventories	RS	Nominal short-term interest rate
IITQ	Total real investment in inventories	R.*****	Reconciliation factors
INIG	Interest payments on public debt	SAVC	Companies' savings
IPQ	Real private fixed investment	SAVG	General government savings
ISPQ	Real private fixed investment in structures	SAVH	Households' savings
ITQ	Total real fixed investment	SAVHR	Households' savings ratio
KAPEQ	Real gross stock of private equipment	SCC	Employers' social security contribution
KAPIQ	Real stock of inventories	SCCR	Average rate of employers' social security contributions
L	Total labour force	SCH	Employees' social security contributions
LE	Total employment	SCHR	Average rate of employees, social security contributions
LEE	Total number of employees	SUB	Subsidies
LEEG	Public sector employment	SUBQ	Subsidies at constant prices
LEEP	Number of employees in the private sector	TI	Indirect taxes
LSE	Number of self-employed	TIR	Indirect tax rate
LU	Unemployment	TIME	Time trend
LUR	Unemployment rate	TPH	Net current transfers received by households
MEQ	Real imports of energy	TPX	Net unrequited transfers paid abroad
MESQ	Real imports of energy in US dollars of base year	TYC	Corporate profit tax
MM	Nominal imports of goods	TYCR	Average corporate profit tax rate
MMQ	Real imports of goods	TYH	Income tax
MMS	Imports of goods in US dollars (c.i.f.)	U.*****	Estimation residuals
MMSQ	Imports of goods in US dollars of base year (c.i.f.)	UCAP	Capacity utilization rate
MMSZQ	Imports of goods in US dollars of base year (quasi-f.o.b.)	ULC	Unit labour cost
MMSZ	Imports of goods in US dollars (quasi-f.o.b.)	UPRO	Labour productivity per person employed
MNQ	Real imports of non-energy goods	VATR	Proxy for the VAT rate
MS	Nominal imports of services	VOIL	Share of energy in the volume of exports
MSQ	Real imports of services	WC	Wage costs per employee
MT	Total nominal imports	WMMSQ	Real world imports weighted with export shares
MTQ	Total real imports	WPXMS	Competitors' export price of goods
M3	Money supply	WPXNS	Competitors' export price of non-energy goods
OPEN	Trend of openness of the domestic market	WR	Wage rate per employee
P	Proxy for the value-added deflator	XEQ	Real exports of energy
PCP	Deflator for private consumption	XESQ	Exports of energy in US dollars of base year
PIIT	Deflator for total investment in inventories	XM	Nominal exports of goods
PIT	Deflator for total fixed investment	XMQ	Real exports of goods
PME	Deflator for imports of energy	XMS	Exports of goods in US dollars (f.o.b.)
PMES	Deflator for imports of energy in US dollars	XMSQ	Exports of goods in US dollars of base year (f.o.b.)
PMM	Deflator for total imports of goods	XMZQ	Sum of bilateral real exports of goods
PMMS	Deflator for total imports of goods in US dollars (c.i.f.)	XNQ	Real exports of non-energy goods
PMMSZ	Deflator for imports of goods in US dollars (quasi-f.o.b.)	XS	Nominal exports of services
PMN	Deflator for imports of non-energy goods	XSQ	Real exports of services
PMNSZ	Deflator for imports of non-energy goods (quasi-f.o.b.)	XT	Total nominal exports
PMS	Deflator for imports of services	XTQ	Total real exports
PMT	Deflator for total imports	Y	Nominal gross domestic product
POIL	Spot price of oil (Saudi light) in US dollars per barrel	YC	Companies profits before tax
POPT	Total population	YDH	Households' disposable income
POPW	Population in working age	YDHQ	Households' real disposable income
PXE	Deflator for exports of energy	YEQ	Real domestic petroleum and gas extraction
PXM	Deflator for exports of goods	YG	General government trading surplus and profit income
PXMS	Deflator for exports of goods in US dollars (f.o.b.)	YGR	Government's share of gross operating surplus
PXN	Deflator for exports of non-energy goods	YNWH	Non-wage income of households
PXNS	Deflator for exports of non-energy goods in US dollars (f.o.b.)	YQ	Real gross domestic product
PXS	Deflator for exports of services	YQPOT	Real potential output
PXT	Deflator for total exports	YTDQ	Total real domestic demand
PY	GDP deflator	YTTQ	Total real final demand
PYTT	Deflator for total final demand	YWB	Wage bill
RDG	Implicit interest rate on government debt	YWH	Compensation of employees
RL	Nominal long-term interest rate	YWO	Other labour income
		YWOR	Average ratio of other labour income to the wage bill
		YX	Net factor income received from abroad

YXM	Factor income paid abroad
YXMR	Ratio of factor income paid abroad to total imports
YXX	Factor income from abroad
YXXR	Ratio of factor income from abroad to total exports
Z	Trade integration trend

Note: 'Quasi-f.o.b.' means

- for values: imports calculated by adding up bilateral export values
- for volumes: bilateral export values deflated by total export prices
- for prices: using total export prices instead of bilateral prices

In the model listing below the relations between the variables of the model are represented in their most general functional form. The behavioural equations of the structural module do not necessarily contain all the candidate explanatory

variables for each country and in general will use only a subset. (The behavioural equations can be identified by the appearance of a residual term prefixed by U. The important exogenous variables are prefixed by EX. Z is a trade integration trend fitted as a logistic spline through the share of imports in total final demand of the OECD countries.)

In linked mode, the variables XMSQ, PMNSZ and WPXMS are input from the linkage block into the structural models, and vice versa for the variables MMSQ, MESQ and PXMS. For the Netherlands and the United Kingdom (W)PXMS replaces (W)PXNS, and XESQ and VOIL are additional input from the country model to the linkage block. Any structural model may, if serving only as an echo for other countries in simulation, be replaced by a model in trade-feedback form, such as those already included for the countries/zones not represented by structural models.

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## STRUCTURAL MODULE

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### PARAMETERS USED THROUGHOUT

PGN	= 0	: Government expenditure exogenous in real terms
	= 1	: Government expenditure exogenous in nominal terms
PLINK	= 0	: Unlinked, single country mode
	= 1	: Linked mode

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## THE GOODS MARKET

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### REAL DEMAND

YQ	==	CPQ + CGQ + ITQ + IITQ + XTQ - MTQ
ITQ	==	IPQ + IGQ
IPQ	==	IEPQ + ISPQ + IHPQ
XTQ	==	XMZQ + XSQ
MTQ	==	MMQ + MSQ
YTTQ	==	CPQ + CGQ + ITQ + IITQ + XTQ
YTDQ	==	CPQ + CGQ + ITQ + IITQ

### BEHAVIOURAL EQUATIONS EXPLAINING DEMAND COMPONENTS

CPQ	=	F(YDHQ, PCP, RL, LUR, EX, POPT)	+ U.CPQ
IEPQ	=	F(YTTQ, RL, PY, UCAP*GOS/Y, KAPEQ)	+ U.IEPQ
ISPQ	=	F(IEPQ, RL, PY, GOS/Y)	+ U.ISPQ
IHPQ	=	F(YQ, PIT, RL, PY, LUR, EX, POPT)	+ U.IHPQ
IITQ	=	F(YTTQ, RS, PYTT, UCAP, KAPIQ)	+ U.IITQ
XMZQ	=	F(WMMSQ, PXMS/WPXMS)	+ U.XMZQ
XMZQ	=	(1-PLINK)*XMZQ + PLINK*XMSQ	+ R.XMQ
XSQ	=	F(XMQ, PXS/PMS)	+ U.XSQ
MNQ	=	F(Z*YTTQ, PMN/PYTT, UCAP)	+ U.MMQ
MEQ	=	F(YTTQ, PME/PYTT)	+ U.MEQ
MSQ	=	F(YTTQ, PMS/PYTT)	+ U.MSQ



## ONLY FOR FRANCE, THE NETHERLANDS AND THE UNITED KINGDOM

$$\begin{aligned} \text{CEQ} &= \text{F}(\text{YQ}-\text{EX.YEQ}-\text{IITQ}, \text{PME}/\text{PY}, \text{IITQ}) & + \text{U.CEQ} \\ \text{MEQ} &= \text{CEQ} + \text{XEQ} - \text{EX.YEQ} \end{aligned}$$

## ONLY FOR THE NETHERLANDS AND THE UNITED KINGDOM

$$\begin{aligned} \text{XEQ} &= \text{F}(\text{EX.YEQ}) & + \text{U.EXQ} \\ \text{XNQ} &= (1-\text{PLINK}) * (\text{XMZQ}-\text{XEQ}) + \text{PLINK} * (\text{XMSQ}-\text{XESQ}) & * \text{R.XNQ} \\ \text{XMQ} &= \text{XNQ} + \text{XEQ} \\ \text{XESQ} &= \text{XEQ} & * \text{R.XESQ} \\ \text{VOIL} &= \text{F}(\text{XESQ}/\text{XMSQ}) \\ \\ \text{MESQ} &= \text{MEQ} & * \text{R.MESQ} \\ \text{MMSQ} &= \text{MMQ} & * \text{R.MMSQ} \end{aligned}$$

## NOMINAL VARIABLES

$$\begin{aligned} \text{IIT} &= \text{IITQ} * \text{PYTT}/100 & + \text{R.IIT} \\ \text{XM} &= \text{XMQ} * \text{PXM}/100 \\ \text{XS} &= \text{XSQ} * \text{PXS}/100 \\ \text{XT} &= \text{XM} + \text{XS} \\ \text{MM} &= (\text{MNQ} * \text{PMN} + \text{MEQ} * \text{PME})/100 \\ \text{MS} &= \text{MSQ} * \text{PMS}/100 \\ \text{MT} &= \text{MM} + \text{MS} \\ \text{Y} &= \text{CPQ} * \text{PCP}/100 + \text{CG} + \text{ITQ} * \text{PIT}/100 + \text{IIT} + \text{XT} - \text{MT} \end{aligned}$$

ENDOGENOUS:

## BEHAVIOURAL

CPQ	: Real private consumption
IEPQ	: Real private fixed investment in equipment
ISPQ	: Real private fixed investment in structures
IHPQ	: Real private fixed investment in housing
IITQ	: Real total investment in inventories
MNQ	: Real imports of non-energy goods
MEQ	: Real imports of energy
MSQ	: Real imports of services
XMZQ	: Real exports of goods
XSQ	: Real exports of services
CEQ	: Real apparent domestic consumption of energy
XEQ	: Real exports of energy (exogenous for france)

## DEFINITIONS

YQ	: Real GDP
ITQ	: Real total fixed investment
IPQ	: Real private fixed investment
IGQ	: Real general government fixed investment
XTQ	: Real total exports
MTQ	: Real total imports
MMQ	: Real imports of goods
YTTQ	: Real total final demand
YTDQ	: Real total domestic demand
KAPIQ	: Real stock of inventories
XMQ	: Real exports of goods
XNQ	: Real exports of non-energy goods
XESQ	: Real exports of energy in US dollars
VOIL	: Share of energy in the volume of exports
MESQ	: Real imports of energy in US dollars
MMSQ	: Real (c.i.f.) imports of goods in dollars
XM	: Nominal exports of goods
XS	: Nominal exports of services
XT	: Nominal total exports

MM : Nominal imports of goods  
 MN : Nominal imports of non-energy goods  
 MS : Nominal imports of services  
 MT : Nominal total imports  
 IIT : Nominal inventory investment  
 Y : Nominal GDP

EXOGENOUS:

## EXTERNAL (OUTPUT OF THE LINKAGE BLOCK)

XMSQ : Real (f.o.b.) exports of goods in US dollars

**PUBLIC EXPENDITURE: OPTIONS FOR INSTRUMENTS**

IG =  $\text{PGN} \cdot \text{EX.IG} + (1 - \text{PGN}) \cdot ((\text{EX.IEGQ} + \text{EX.ICGQ}) \cdot \text{PIT} / 100 \cdot \text{R.IG})$   
 IGQ =  $\text{PGN} \cdot (\text{EX.IG} \cdot 100. / \text{PIT}) \cdot \text{R.IGQ} + (1 - \text{PGN}) \cdot (\text{EX.IEGQ} + \text{EX.ICGQ})$   
 CG =  $\text{PGN} \cdot \text{EX.CG} + (1 - \text{PGN}) \cdot (\text{EX.LEEG} \cdot \text{WC} + \text{EX.CNWGQ} \cdot \text{PCP} / 100 \cdot \text{R.CG})$   
 CGQ =  $\text{PGN} \cdot \text{EX.CG} / \text{G}(\text{PCP}, \text{WC}) \cdot \text{R.CGQ} + (1 - \text{PGN}) \cdot \text{G}(\text{EX.CNWGQ}, \text{EX.LEEG})$   
 SUB =  $\text{PGN} \cdot \text{EX.SUB} + (1 - \text{PGN}) \cdot \text{EX.SUBQ} \cdot \text{PY} / 100$

ENDOGENOUS:

IG : Nominal general government fixed investment  
 IGQ : Real general government fixed investment  
 CG : Nominal general government consumption  
 CGQ : Real general government consumption  
 SUB : Subsidies

EXOGENOUS:

EX.IEGQ : General government fixed investment in equipment  
 EX.ICGQ : General government fixed investment in construction  
 EX.CNWGQ : Real general government non-wage consumption  
 (the function G attaches the appropriate weights)

**SUPPLY BLOCK**

KAPEQ =  $(1 - \text{DELTA}) \cdot \text{KAPEQ}(-1) + \text{IEPQ}$  + R.KAPEQ  
 YQPOT =  $\text{F}(\text{KAPEQ}, \text{WC} / \text{PY} / \text{UPRO})$  + U.YQPOT  
 LEEP =  $\text{F}(\text{YQ}, \text{WC} / \text{PY}, \text{TIME})$  + U.LEEP  
 UCAP =  $\text{F}(\text{YQ}, \text{KAPEQ})$  + U.UCAP  
 KAPIQ =  $\text{KAPIQ}(-1) + \text{IITQ}$

ENDOGENOUS:

## BEHAVIOURAL

LEEP : Number of employees in the private sector  
 UCAP : Degree of capacity utilization  
 YQPOT : Potential output

## DEFINITIONS

KAPEQ : Capital stock (private equipment)  
 KAPIQ : Stock of inventories

EXOGENOUS:

DELTA : Depreciation rate

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**PRICES**


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**DEFLATORS**

PY	=	100*(Y/YQ)
PXT	=	100*(XT/XTQ)
PMT	=	100*(MT/MTQ)
PMM	=	100*(MM/MMQ)
PYTT	=	100*(CPQ*PCP/100 + ITQ*PIT/100 + IIT + CG + XT)/YTTQ
PITT	=	100*(IIT/IITQ)

**BEHAVIOURAL PRICE EQUATIONS**

P	=	F(PMM,WC,UCAP)	*U.P
PCP	=	F(EX.VATR,OPEN,PMM,P)	*U.PCP
PIT	=	F(OPEN,PMM,P)	*U.PIT
PXM	=	F(OPEN,PMM,P,WPXMS,EX.EXCHR)	*U.PXM
PXMS	=	PXM/EX.EXCHR	*R.PXMS

**ONLY FOR THE NETHERLANDS AND THE UNITED KINGDOM**

PXN	=	F(OPEN,PMM,P,WPXNS,EX.EXCHR)	*U.PXN
PXNS	=	PXN/EX.EXCHR	*R.PXNS
PXE	=	F(POIL*EX.EXCHR)	*U.PXE
XM	=	(XNQ*PXN + XEQ*PXE)/100	
PXM	=	100*(XM/XMQ)	
PXS	=	PY	*R.PXS
PMN	=	PMNSZ*EX.EXCHR	*R.PMN
PME	=	F(POIL*EX.EXCHR)	*U.PME
PMES	=	PME/EX.EXCHR*100	*R.PMES
PMS	=	PMN	*R.PMS

ENDOGENOUS:
**BEHAVIOURAL**

P	:	Value-added prices
PCP	:	Deflator for private consumption
PIT	:	Deflator of total fixed investment
PXM	:	Deflator of exports of goods
PXS	:	Deflator of exports of services
PMN	:	Deflator of imports of non-energy goods
PME	:	Deflator of imports of energy
PMS	:	Deflator of imports of services
PXN	:	Deflator of exports of non-energy goods
PXE	:	Deflator of exports of energy

**DEFINITIONS**

PY	:	Deflator of GDP
PXT	:	Deflator of total exports
PMT	:	Deflator of total imports
PMN	:	Deflator of imports of goods
PYTT	:	Deflator of final demand
PIIT	:	Deflator of inventory investment
PXNS	:	Deflator of exports of non-energy goods, in US dollars
PMES	:	Deflator of imports of energy, in US dollars
PXMS	:	Deflator of exports of goods, in US dollars

EXOGENOUS:

POIL : Petroleum spot price in US dollars per barrel  
 OPEN : Trend of openness of the domestic market

## EXTERNAL (OUTPUT OF THE LINKAGE BLOCK)

PMNSZ : Imports of non-energy goods price index in US dollars  
 WPXMS : Double-weighted competitors' export prices of goods in US dollars  
 WPXNS : Double-weighted competitors' export prices of non-energy goods in US dollars

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LABOUR MARKET (WAGES, EMPLOYMENT AND UNEMPLOYMENT)

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## DEFINITIONS

LE == LEE + EX.LEE  
 LEE == LEEP + EX.LEEG  
 LU == EX.L - LE  
 LUR == 100\*LU/EX.L  
 UPRO == YQ/LE  
 WC == YWH/LEE  
 ULC == WC/UPRO

## BEHAVIOURAL WAGE RATE EQUATION

WR = F(PCP, PY, LUR, UPRO) + U.WR

ENDOGENOUS:

## BEHAVIOURAL

WR : Wage rate per employee

## DEFINITIONS

LE : Total employment  
 LEE : Total number of employees  
 LU : Unemployment  
 LUR : Unemployment rate  
 UPRO : Labour productivity per person employed  
 WC : Wage cost per employee  
 ULC : Unit labour cost

EXOGENOUS:

EX.POPT : Total population  
 EX.POPW : Population in working age  
 EX.L : Total labour force  
 EX.LSE : Number of self-employed  
 EX.LEEG : Number of employees in the public sector

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SECTORAL INCOMES

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YWB == LEE\*WR  
 YWH == YWB + SCC + YWO  
 GOS == Y - YWH - TI + SUB + R.GOS  
 YDH == YWB + TPH + YWO + YNWH - TYH - SCH  
 YDHQ == YDH/PCP\*100  
 YC == GOS - YNWH + INTG - YG + YX + R.YC

QUASI-BEHAVIOURAL EQUATIONS FOR PROFIT AND PROPERTY INCOME AND OTHER LABOUR INCOME

$$\begin{aligned}
 YWO &= EX.YWOR*YWB \\
 YNWH &= F(EX.LSE*WR,INTG,GOS) & + U.YNWH \\
 YG &= EX.YGR*GOS \\
 INTG &= RDG*DEBT \\
 RDG &= F(RL) & + U.RDG
 \end{aligned}$$

ENDOGENOUS:

QUASI-BEHAVIOURAL

YWO : Other labour income  
 YNWH : Non-wage income of households  
 YG : General government trading surplus and profit  
 INTG : Interest payment on public debt  
 RDG : Implicit interest rate on government debt

DEFINITIONS

YWB : Wage bill  
 YWH : Compensation of employees  
 GOS : Gross operating surplus  
 YDH : Disposable income of households  
 YDHQ : Real disposable income of households  
 YC : Companies' profit before tax

EXOGENOUS:

STRUCTURAL

EX.YGR : Profit share of government  
 EX.YWOR : Average other labour income rate

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SOCIAL CONTRIBUTIONS, TAXES AND TRANSFERS

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$$\begin{aligned}
 SCC &= EX.SCCR*YWB \\
 SCH &= EX.SCHR*YWB \\
 TYH &= F(YWB,YNWH,TPH) & + U.TYH \\
 TYC &= EX.TYCR*YC \\
 TI &= (EX.VATR/(1 + EX.VATR))*CPQ + *PCP/100 + EX.TIR*(Y + MT) \\
 TPH &= F(LUR,EX.POPW/EX.POPT)*Y & + U.TPH
 \end{aligned}$$

ENDOGENOUS:

BEHAVIOURAL

TYH : Income tax  
 TPH : Net current transfers received by households

Quasi-behavioural

SCC : Employers' social contributions  
 SCH : Employees' social contributions  
 TYC : Corporate profit tax  
 TI : Indirect taxes

EXOGENOUS:

POLICY

EX.SCCR : Average employer social contribution rate  
 EX.SCHR : Average employee social contribution rate  
 EX.TYCR : Average corporate profit tax rate  
 EX.TIR : Other indirect tax rate  
 EX.VATR : Value-added tax rate

---

**NET ACQUISITIONS OF FINANCIAL ASSETS, SAVINGS RATIO AND GOVERNMENT DEBT**


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SAVH == YDH - CPQ\*PCP/100.  
 SAVHR == 100\*SAVH/YDH  
 SAVC == YC - TYC + R.SAVC\*GOS  
 SAVG == -CG + YG + (TYH + TYC + SCC + SCH + TI)  
           - SUB - INTG - TPH + R.SAVG\*TPH  
 DEFG == - SAVG + IG + R.DEFG\*ITQ\*PIT/100  
 DEBT == DEBT(-1) + DEFG

ENDOGENOUS:

## DEFINITIONS

SAVH : Households' savings  
 SAVHR : Households' savings ratio  
 SAVC : Companies' savings  
 SAVG : General government savings  
 DEFG : General government deficit  
 DEBT : Nominal government debt

---

**BALANCE OF PAYMENTS**


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YXX = XT\*EX.YXXR  
 YXM = MT\*EX.YXMR  
 YX == YXX - YXM  
 BPT == XT - MT + YX  
 BPC == BPT - EX.TPX

ENDOGENOUS:

## DEFINITIONS

YX : Net factor income from abroad  
 BPT : Balance on goods and services  
 BPC : Current balance national accounts based

## QUASI-BEHAVIOURAL

YXX : Factor income received from abroad  
 YXM : Factor income paid abroad

EXOGENOUS:

## EXTERNAL

EX.TPX : Net unrequited transfers paid abroad

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**TRADE-FEEDBACK MODELS**


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OIL EXPORTERS: NETHERLANDS, UNITED KINGDOM, CANADA, AUSTRALIA, NORWAY, OPEC, CENTRALLY  
 PLANNED ECONOMIES, REST OF WORLD ZONE  
 NON-OIL EXPORTERS: REMAINING COUNTRIES/ZONES

MMSQ = F(XMSQ,PXMS/PMMS)  
 PXMS = F(VOIL,POIL,EXCHR,PMNSZ)  
       = POIL/PPOIL\*100  
       = F(EXCHR,PMNSZ)

+ U.MMSQ  
 \* R.PXMS (OIL EXPORTERS)  
 \* R.PXMS (OPEC)  
 \* U.PXMS (NON-OIL EXPORTERS)

ENDOGENOUS:

BEHAVIOURAL

MMSQ : Real imports of goods, in US dollars  
 PXMS : Deflator of exports of goods, in US dollars

EXTERNAL (OUTPUT FROM TRADE LINKAGE):

PMMS : Deflator of imports of goods, in US dollars  
 PMNSZ : Deflator of imports of non-energy goods  
 XMSQ : Real exports of goods, in US dollars

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**LINKAGE BLOCK**

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OIL EXPORTERS: NETHERLANDS, UNITED KINGDOM, CANADA, AUSTRALIA, NORWAY, OPEC, CENTRALLY PLANNED ECONOMIES, REST OF WORLD ZONE

STRUCTURAL MODELS: BELGIUM, DENMARK, GERMANY, GREECE, SPAIN, FRANCE, IRELAND, ITALY, NETHERLANDS, PORTUGAL, UNITED KINGDOM, UNITED STATES, JAPAN (OR SUBSET OF THESE COUNTRIES)

TRADE-FEEDBACK MODELS: REMAINING COUNTRIES/ZONES  
 f.o.b. — CUSTOMS DATA

INDEX I: FOR THE EXPORTING COUNTRY OR ZONE

INDEX J: FOR THE IMPORTING COUNTRY OR ZONE

LINKAGE SYSTEM IN US DOLLARS:

PXNS(I) == PXMS(I)  
 = (PMS(I)\*\*(1/(1 - VOIL(I))))  
 /(POIL/PPOIL\*100)\*\*(VOIL(I)/(1 - VOIL(I))) \* R.PXNS(I)  
 (OIL EXPORTERS EXCEPT OPEC)  
 MMSZQ(J) == MMSQ(J) \* R.MMSZQ(J)

BEHAVIOURAL EQUATIONS EXPLAINING EXPORTS OF GOODS FROM I TO J

XX(I,J) = PXMS(I)\*(F(MMSZQ(J),PXNS(I)/PMNSZ(J)) + U.XX(I,J))  
 = PXMS(I)\*(F(MMSZQ(J),  
 PXNS(I)/PMNSZ(J)\*\*(1 - VOIL(I))) + U.XX(I,J))  
 (I: OIL EXPORTERS)  
 = PXMS(I)\*(C(I,J)\*XESQ(I) +  
 F(MMSZQ(J) - MESQ(J),PXNS(I)/PMNSZ(J)) + U.XX(I,J))  
 (I: UK OR NL, J: STRUCTURAL MODELS)  
 = PXMS(I)\*(MESQ(J) - SUM(K: C(K,J)\*XESQ(K)) + U.XX(I,J))  
 (I: OPEC, J: STRUCTURAL MODELS, K: UK, NL)

ONE(J) == MMSZQ(J)/SUM(I: XX(I,J)/PXMS(I))  
 X(I,J) == ONE(J)\*XX(I,J)  
 XMS(I) == SUM(J: X(I,J))  
 PMMSZ(J) == SUM(I: X(I,J))/SUM(I: X(I,J)/PXMS(I))

LINKAGE OUTPUT DATA TO COUNTRY MODELS IN US DOLLARS:

XMSQ(I) == XMS(I)/PXMS(I)\*100  
 PMNSZ(J) == SUM(I: X(I,J))/SUM(I: X(I,J)/PXNS(I)) (I: EXCLUDES OPEC)  
 PMMS(J) == PMMSZ(J) \* R.PMMS(J)  
 (TO TRADE-FEEDBACK MODELS)  
 WPXMS(I) == SUM(J: X(I,J)\*SUM(K: X(K,J))/  
 SUM(K: X(K,J)/PXMS(K)))/SUM(J: X(I,J))  
 (SUMMATIONS OVER K EXCLUDE I)

$WPXNS(I) = \frac{\sum(J: X(I,J) * \sum(K: X(K,J)) / \sum(K: X(K,J) / PXNS(K)))}{\sum(J: X(I,J))}$   
 (I: UK OR NL, SUMMATIONS OVER K EXCLUDE I AND OPEC)  
 $EX.EXCHR(J) = EXCHR(J) / DOLLAR$  (TO STRUCTURAL MODELS EXCLUDING US)  
 $EXCHR(J) = 1 / DOLLAR$  (TO TRADE-FEEDBACK MODELS)

#### WORLD TRADE:

$WMMSQ(I) = \frac{\sum(J: X(I,J) * MMSQ(J))}{\sum(J: X(I,J))}$

#### ENDOGENOUS:

##### BEHAVIOURAL

$XX(I,J)$  : Exports of goods in US dollars from I to J  
 f.o.b. — during simulation before adjustment for adding-up condition

#### DEFINITIONS

$EX.EXCHR$  : Exchange rate local currency per US dollar (structural models)  
 $EXCHR$  : Auxiliary variable for the exchange rate in the trade-feedback models  
 $MMSQ$  : Real (c.i.f.) imports of goods  
 $MMSQZ$  : Real (quasi-f.o.b.) imports of goods  
 $ONE$  : = 1 (Correction factor to impose adding-up on bilateral exports in value with respect to quasi-fob imports)  
 $PMMS$  : Import price of goods (c.i.f.)  
 $PMMSZ$  : Import price of goods (quasi-f.o.b.)  
 $PMNSZ$  : Import price of non-energy goods (quasi-f.o.b.)  
 $PXMS$  : Export price of goods (f.o.b.)  
 $PXNS$  : Export price of non-energy goods (f.o.b.)  
 $WMMSQ$  : Export market growth (import volumes weighted with bilateral export shares)  
 $WPXMS$  : Competitors' export price of goods, double-weighted  
 $WPXNS$  : Competitors' export price of non-energy goods, double-weighted (UK and NL only)  
 $X(I,J)$  : Exports of goods in US dollars from I to J  
 $XMS$  : Total exports of goods in US dollars (f.o.b.)  
 $XMSQ$  : Real exports of goods (f.o.b.)

#### EXOGENOUS:

$R,*****$  : C.i.f./f.o.b. Correction factors for transformation of c.i.f. into quasi-f.o.b. figures and vice versa  
 $DOLLAR$  : = 1 (Auxiliary variable used for simulating a depreciation of the US dollar against all other currencies in linked mode)  
 $POIL$  : Petroleum spot price (Saudi light) in US dollars/barrel  
 $VOIL$  : Share of energy in total exports (oil exporters excluding UK and NL)

#### EXTERNAL (OUTPUT FROM STRUCTURAL OR TRADE-FEEDBACK MODELS)

$MESQ$  : Real imports of energy in US dollars (c.i.f.)  
 $MMSQ$  : Real imports of goods in US dollars (c.i.f.)  
 $PXMS$  : Export price of goods (f.o.b.)  
 $PXNS$  : Export price of non-energy goods (UK and NL)  
 $XESQ$  : Real exports of energy (UK and NL)  
 $VOIL$  : Share of energy in total exports (UK and NL)

#### PARAMETER:

$C(I,J)$  : Fixed share of trade partner J in energy exports of I  
 $PPOIL$  : Average oil price in US dollars of base year



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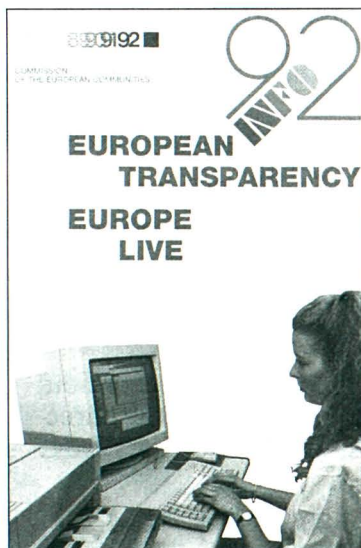
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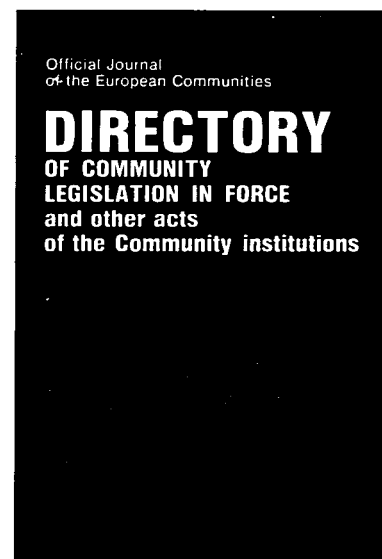
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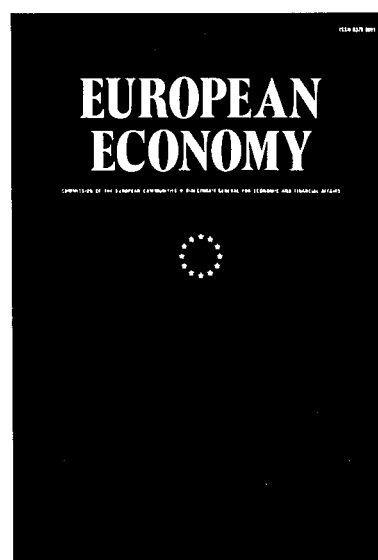
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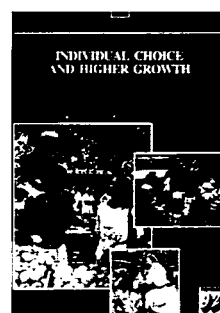
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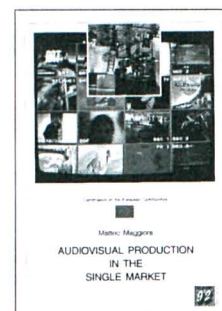
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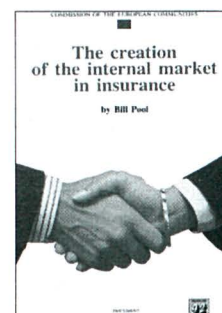
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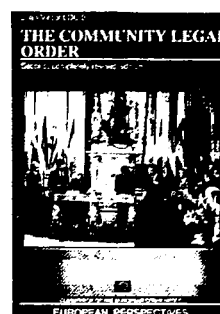
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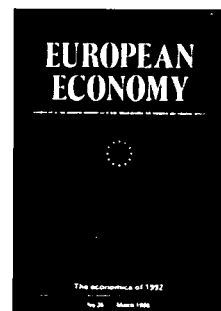
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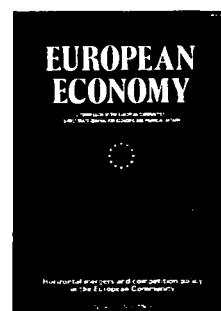
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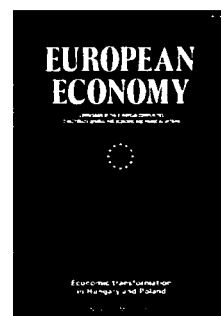
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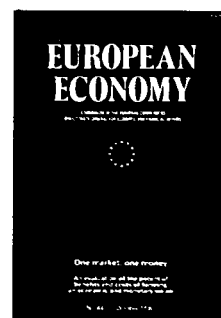
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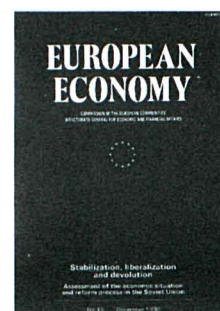
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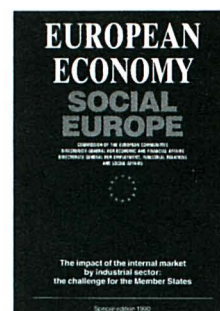
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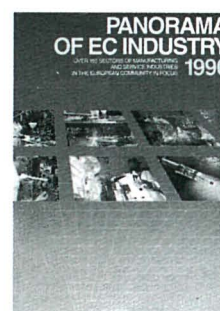
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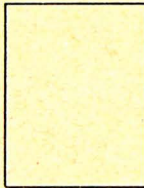




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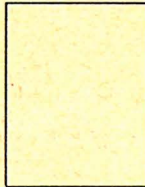
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