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Regional Policy  
and Cohesion

# Sixth Periodic Report

on the Social and Economic Situation

and Development of the Regions of the European Union

(presented by the Commission)

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# Executive Summary

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The *Sixth Periodic Report on the social and economic situation and development of regions in the EU* arrives at an important moment both for the European Union as a whole and for Cohesion policies in particular. The transition to the Euro has already started and there is the prospect of enlargement towards Central and Eastern European countries. This occurs against a backdrop of increasing globalisation and a 'second industrial revolution' based on information technology.

All of these changes have important implications for regional economies and labour markets and this report provides background information on social and economic trends in the regions. As well as updating much of the information contained in previous Periodic Reports and in the First Cohesion Report (1996), it also contains new data and analyses.

## 1. The situation in the regions

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In previous Periodic Reports and in the Cohesion Report, the first signs of real convergence of lagging regions were detected, but the message was mixed, with some indicators showing convergence while others were unclear. The evidence is now unambiguous: the GDP, or output, per head of poorer regions is converging towards the EU average. Over the 10 years 1986 to 1996, the following changes are evident:

- GDP per head in the 10 regions where this was lowest increased from 41% of the EU average to 50%, in the 25 poorest regions, it rose from 52% to 59%.

- GDP per head in the four Cohesion countries went up from 65% of the EU average to 76½%, and, according to forecasts, to 78% in 1999.

This is an unusually rapid pace of convergence, both from an historical and international perspective. It has been driven largely by closer European economic integration, but the Structural Funds have also played an important part. As an example, exports and imports between the Cohesion Four and other EU Member States have doubled in real terms over the past decade and now amount in each case to around 120 billion ECU.

However, the above figures also show that significant disparities remain; even where catching up is occurring relatively rapidly, the full process can take a generation or more. In addition, although most regions are experiencing at least some convergence, their performance varies widely. The more favoured lagging regions, particularly capital cities such as Dublin or Lisbon, are catching up much more rapidly than their rural hinterlands. This underlines the importance of reviewing the distribution of assistance periodically to ensure that limited resources are concentrated in the regions that most need it.

Although regional output is converging, the situation regarding unemployment is less positive. Despite cyclical recovery since 1994, unemployment in the EU still stood at just under 10% in late 1998, meaning that there were 16½ million people without work who were looking for jobs.

Increasing unemployment over the past 25 years or so has affected some regions much more than others and some have hardly been affected at all. The 25 regions with the lowest rates of unemployment are much the same now as 10 years ago and their rates

have remained steady at around 4%. By contrast, rates in the most affected regions have climbed from 20% to nearly 24%.

A particular concern is the scale of long-term unemployment; 49% of the unemployed have been out of work for a year or more, 30% for at least two years. A closely related problem is the exclusion from the labour market of certain individuals and social groups — such as many women and young people. These forms of unemployment are particularly worrying, since they seem largely resistant to general improvements in the economy. The 25 regions with the highest unemployment rates are particularly affected by such problems. In these regions, the long-term unemployed account for 60% of total unemployment (as against 30% in the 25 regions with the lowest unemployment). Moreover, only 30% of women of working age have a job and youth unemployment rates average 47%.

The resumption of growth alone will not resolve such problems. What is needed is an integrated approach combining a strengthening of the economic base with training measures aimed at improving the skills of those disadvantaged in the labour market and getting them into work. In addition, where so many women and young people are excluded from pursuing working careers and from contributing to the generation of economic wealth, mainstreaming of policies aimed at them is not an option but a necessity.

The regions of the EU can be roughly divided into three types (though some regions do not fit neatly into a single category):

- Large urban service centres. These regions typically perform well in terms of both GDP and employment. The 25 regions most concentrated in services have an output per head 27% above the EU average. Since the service sector is the main source of employment in the EU — jobs in market services in particular increasing by 12 million over the past decade — service centres generate significant employment opportunities, often extending well beyond the region concerned. Nevertheless, there can still be serious unemployment blackspots within the cities themselves.
- Industrial regions, the economy of which tends to be centred on medium-sized cities, which are often part of a network. The fortunes of these re-

gions depend strongly on the health of the particular industries located there. Since much of the sector is performing well, manufacturing regions are often successful; the 25 regions in which employment is most concentrated in manufacturing have an output per head 8% above the EU average and unemployment of over 1½ percentage points below the average. However, a minority of industrial regions particularly affected by restructuring have high rates of unemployment, sometimes (but not always) combined with moderately low GDP per head.

- Rural regions, with relatively high employment in agriculture. These regions generally perform reasonably well in terms of unemployment, although problems may show up in other ways, eg in terms of high outward migration. However, some agricultural subsectors are low value-added and face significant restructuring pressures. The 25 regions with the very highest dependence on agriculture (and this can be extreme, covering anything up to 40% of the labour force) are particularly affected and have an average unemployment rate of 14.7%. This underlines the importance of facilitating diversification.

Policy must, therefore, be tailored to the different types of need in different regions. For regions undergoing restructuring, the main problem is unemployment, rather than low output and underdevelopment. Unemployment blackspots are often found in otherwise successful areas, despite the opportunities surrounding them. For these regions, an integrated approach is, therefore, needed, not just increasing local economic activity, for example, but equipping the people who live there, particularly those who are disadvantaged, to play a full part in the economy.

Demographic trends are likely to affect the EU labour market substantially in the long-term, and the report examines projections to 2025. Three factors stand out in particular:

- Low birth rates will mean an ageing of the population, with consequences for pensions as well as for health care. Over the next 5-10 years, this will be particularly pronounced in the Northern regions of Italy, Southern and Eastern Germany, Southern France and mainland Greece. By 2025, the effects will be most pronounced in Northern Italy and central France where the number of over-

65s for every 100 people of working age will have nearly doubled, increasing to 40 or more. The number of over-80s, a critical determinant of the need for long-term care and the demands on the health service, will increase everywhere, but particularly in Greece, Spain and Italy, with consequent pressure on public budgets.

- Similarly, the labour force will continue to age, raising questions about its future adaptability to technological change. The provision of lifelong learning is, therefore, likely to become a more pressing issue in the future.
- Labour supply is projected to increase up to 2005, due mainly to increasing female participation rates and, less so, to continued inward migration. From then on, declining population of working age should begin to have an effect and the labour force is projected to start shrinking from around 2010 onwards. However, the distribution of the decline between regions means that it cannot be relied on to resolve regional disparities in labour market balance. In some regions with relatively low unemployment, notably in Northern Italy, labour supply may even start to decline in the next few years, possibly creating labour shortages, though it is also possible that growth in demand for labour would give rise to increased participation. In some high unemployment regions, notably in the Southern parts of Spain and France, labour supply is expected to go on rising for some time to come and is unlikely to help reduce unemployment in the medium-term.

## 2. Competitiveness

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Competitiveness has two main dimensions — productivity and employment. The EU is performing reasonably well on the former and badly on the latter; income and output growth of just over 2% over the last decade came mainly from increased productivity, which grew by almost 2% a year, while employment rose by less than ½% a year. This pinpoints the labour market in general and the need to increase the employment-intensity of growth, in particular, as significant challenges to competitiveness in the EU.

Lagging regions face the double challenge of catching up with the present, as well as adapting to the future. For some regions, notably in Ireland, Spain and Southern Italy, productivity is close to (or in the case of Ireland, above) the EU average and the main challenge is the generation of employment. Conversely, Portugal and the new Länder in Eastern Germany have relatively high employment rates, but in both, productivity would need to increase by 50% to converge to the EU average. In Greece, significant increases would need to take place in both productivity (by 40%) and employment (20%).

An unfavourable sectoral structure together with a lack of innovative capacity seems to be among the most important factors underlying lagging competitiveness, suggesting that the key development challenge in the regions affected is to improve the productive base and their potential for growth. Poor accessibility and low levels of education among the work force are often contributing factors to reduced competitiveness but, for the most part, regional disparities in these respects are less important than they were.

There is also evidence, however, of the key importance of less tangible factors which cannot easily be quantified, particularly the efficiency — or lack of it — of public administration, the extent and effectiveness of business support services, the availability of social facilities, the prevailing business culture and various other aspects of the institutional structure, which create a favourable environment for the necessary changes in the more tangible factors to occur. The success of Northern Italy, for example, or the lagging development of many parts of the South, cannot be explained simply in terms of the structure of economic activity, accessibility and education levels.

This, therefore, argues strongly for an integrated approach to regional development which explicitly acknowledges the complexity of the process and takes due account of the interaction between factors, intangible as well as tangible. The need, in sum, is for a long-term strategy which addresses simultaneously the many aspects of the problem of a lack of competitiveness and attempts to build up the social capital of a region — its business culture, administrative structure, institutional relationships and so on — in parallel with its physical infrastructure, the skills of its work force and its productive base.

## Factors underlying competitiveness

Although there has been some narrowing in recent years, the technology gap (measured by such indicators as patent applications and spending on research) between the Cohesion countries and the other Member States far exceeds the gap in GDP per head (except for Ireland, which has more or less caught up in both respects). The disparities are most significant in terms of output indicators, ie in terms of the innovations which stem from research and development, underlining the need to improve the efficiency of the process by which research effort is translated into new products or more efficient ways of doing things in lagging regions. In this respect, it is important to bear in mind that companies can innovate and become more competitive through the transfer of technology, possibly by means of direct investment, without necessarily having to do their own RTD and applying for patents.

SMEs play a major role in employment creation and the development of lagging regions. The number of SMEs is highest in the Southern Member States, although this is partly due to their different pattern of sectoral specialisation. In addition, SMEs tend to be concentrated in more favoured regions of these countries, particularly capital cities, while in the poorest regions there are comparatively few. Tackling such imbalances must be part of an integrated approach to regional development which also takes account of the sectoral distribution of SMEs and the extent of their presence in the more dynamic sectors. Recent research suggests that the potential contribution of SMEs to development depends on other conditions, such as the availability of support services and on their links with large firms and/or the networks between them.

Foreign direct investment (FDI) contributes to regional development, not just by increasing the capital stock but also by introducing new products and techniques. In order for lagging regions to derive the full benefits of FDI, however, it is important that the firms making the investment become integrated into the local economy. Over the past 10 years, the EU has been the world's major investor abroad, but it has also received large inflows of FDI. In relation to GDP, Ireland especially but also Portugal and Spain have benefited from above average inflows of investment from countries outside the EU as well as from other Member States.

Despite progress in recent years, significant disparities in transport infrastructure remain between regions, and the four Cohesion countries still lag behind other parts of the Union, particularly in terms of the standard of provision. Even more progress has been made in reducing disparities in telecommunications infrastructure. The Cohesion countries still have somewhat less extensive networks, as measured by the number of telephone lines per 100 inhabitants. However, with the notable exception of Greece, the gap in the quality of networks, as measured by the extent of digitalisation, has largely been eliminated.

The availability of reliable sources of energy at reasonable cost is closely linked to economic growth and development. Investment in energy infrastructure is necessary to close the remaining disparities in provision between different regions. In particular, the market in natural gas is still very segmented, and certain regions continue to be at a disadvantage in terms both of market structure and of infrastructure.

Disparities in human capital, ie the education levels of the work force, are also tending to narrow, though significant differences remain in the relative number of young people remaining in education and initial vocational training beyond compulsory schooling. The weight of the past is reflected in the high proportion of people of working age with only a basic level of education. Three-quarters of those aged 25 to 59 in Portugal and two-thirds in Spain have no qualifications beyond basic schooling. These figures are substantially lower, however, for the 25 to 34 age group, reflecting the progress being made to raise levels.

Institutional factors are increasingly seen as key elements in competitiveness. Such factors include the endowment of social capital, in the form of the business culture and shared social norms of behaviour which facilitate cooperation and enterprise, which is of particular importance for regional development. Networks between firms are both a product of social capital and an element of it. These combine the economies of scale normally open only to large firms with the dynamism and flexibility of small units and, as such, are especially important for innovation.

In fact, social capital (or the lack of it) is a key factor in a broad range of elements contributing to regional competitiveness and is cited as an important issue underlying aspects as diverse as innovation and inner city social problems. A relatively low level of social

capital in many lagging regions in the Union is a major constraint on their competitiveness.

The efficiency of public administration is another institutional factor of importance. In recent years, there have been significant changes in the principles governing public sector management, a key feature being emphasis on performance evaluation, so that lessons from the past can be systematically fed into decision-making to improve policy in the future (to create a 'learning organisation'). Another feature is a shift towards decentralisation and partnership, enabling different levels of government as well as the private sector to participate in the policy process and to bring their different kinds of expertise and experience to bear.

According to studies, the delivery system for the Structural Funds makes two important contributions to the institutional endowment of lagging regions, through:

- programming and evaluation, which together have created a policy-making process with continuous improvement in the measures implemented (again the 'learning organisation') and which are often described as the main innovation to arise from the Funds. Such a process requires an accumulation of expertise within public authorities and, for most Member States, the impetus to acquire this came from the Structural Funds. In addition, the Commission is developing and diffusing best practice techniques for evaluation;
- mobilising private and public sector partners at the local level, which is not just a benefit in terms of increasing the effectiveness of the Funds, but is also starting to contribute to the accumulation of social capital and to the creation of networks in lagging regions. The Structural Funds provide the incentive and the opportunity for contact between many different actors from diverse areas of the local community who might not otherwise work together and can, therefore, help overcome obstacles to closer interaction. The contact so established can generate benefits across a wide range of economic activities in the region concerned.

### 3. The role of EU structural actions

Despite significant progress in recent years, the regional cohesion problem in the EU remains considerable. The 25% of the EU population living in Objective 1 regions have an average GDP per head little more than two-thirds of the EU average. GDP per head in Objective 1 regions is, however, gradually converging to the level in the rest of the Union. Between 1989 and 1996, those regions with Objective 1 status throughout the period went from 63½% of the EU average to 69%. Only 4 of these regions experienced a widening of the gap.

The gap is the result of both lower productivity and lower employment rates than in other parts of the Union. The closing of the gap that has occurred since 1989 is predominantly due to a higher growth of productivity in Objective 1 regions than elsewhere rather than higher employment. Objective 1 regions are, therefore, becoming more competitive, but, except in a few cases, this has not yet been translated into job creation. Indeed, unemployment is a major problem in many such regions, as well as in Objective 6 areas. Just over one in 6 of the labour force in Objective 1 regions are unemployed, compared with one in 10 in the EU as whole.

For Objective 2 areas, the gap in unemployment with the rest of the EU, which is the main focus of policy, has closed on average since 1989. Experience, however, varies between Member States. In Objective 2 areas in Germany, France and Italy, unemployment was higher in 1997 than in 1989, while in Denmark, the Netherlands and the UK, it was markedly lower. Objective 2 areas have a high dependence on a very limited number of manufacturing sectors which have accounted for the major part of job losses. Nevertheless, there is evidence of small enterprises growing in importance and increasing the number of people they employ, offsetting to some degree the jobs lost in large firms.

In Objective 5b areas, except for those in the Netherlands and the UK, unemployment has risen steadily since 1989, including during the present economic recovery, which suggests that the structural element may be becoming more important. On the other hand, employment has risen by more than in other parts of the Union, which suggests a larger increase in the labour force than elsewhere. It also suggests signifi-

cant diversification of economic activity away from agriculture, which is the main aim of policy, and there is evidence of net job creation in manufacturing industries where SMEs predominate, especially those connected to the rural economy, though also in other areas.

Various studies undertaken to assess the impact of the Structural Funds on assisted regions indicate that they have made a significant contribution to the reduction in regional disparities across the Union. In particular, a central estimate from the four main macroeconomic models used to estimate the effect of the Funds, suggests that they have added around ½ percentage point or more to the growth of Objective 1 regions. By 1999 the cumulative effect of the Funds is estimated to have increased the GDP of Greece, Ireland and Portugal by nearly 10% in each case and that of Spain (much of which is not covered by Objective 1) by over 4%. These figures suggest that a significant proportion of the catching up that these countries have experienced over the period 1989-99 would not have happened in the absence of the Funds.

However, the models also highlight the extent to which the effectiveness of the Structural Funds depends on other factors, such as sound macroeconomic and other policies at the national level and the structure of economic activity in the region concerned.

## 4. Enlargement

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The situation in the Central and Eastern European (CEE) countries has evolved rapidly since the collapse of the previous regime around the turn of the decade. After initial sharp falls in income and output, most of the CEE countries have experienced growth since 1993 or 1994. The recovery has, in general, been most marked in the countries which have made the most progress in moving towards a market economy, underlining the gains to be achieved from reform. On the basis of the recovery and closer economic integration with the EU, many CEE countries have made large strides towards preparing for EU membership.

However, much work needs to be done in terms of boosting output, reducing unemployment and re-

gional disparities and improving the quality of infrastructure, and the Structural Funds will have a significant role to play in this. In addition, before the CEE countries are ready to participate in EU structural policy, major effort will be necessary to put in place structures for the administration of the Funds.

Although output contracted significantly in the early years of transition, economic recovery from 1993 onwards has allowed certain CEE countries to narrow the gap in output per head with the Union. In 1997, GDP per head in the countries, taken together, was around 40% of the EU average. In addition, this masks significant imbalances, such as Latvia, whose GDP per head is only 27% of the EU average, and Slovenia, for which this figure is closer to 68%. Only two regions, Prague and Bratislava, have a GDP per head above 75% of the EU average.

Regional imbalances within CEE countries are characterised by the relative prosperity of urban centres and certain Western regions bordering the EU, which have benefited from the expansion of the service sector. Conversely, employment has plummeted in other regions as a result of large-scale job losses in traditional industries and reductions in agriculture. Nevertheless, employment in agriculture and industry remains high in some regions, reflecting delayed restructuring

Unemployment has risen significantly in most countries, but with considerable variation in rates, ranging from 5% in the Czech Republic to 14% in Bulgaria, Latvia and Lithuania. There are also significant regional disparities with, again, large urban centres and most Western regions having lower unemployment. The labour force has declined as the availability of jobs has diminished and people have withdrawn from the work force and, in many CEE countries, participation rates are now close to the EU average. Participation is regionally differentiated, often with high rates in areas where restructuring is still incomplete.

European-wide economic integration is reflected in growing trade flows. By 1995, the EU was the main trade partner of all CEE countries, and the share of the latter in total EU trade is now superior to that of Japan. This has given rise to a significant EU trade surplus with the countries and EU-CEE exchanges are increasingly dominated by intra-industry trade. The CEE countries as a group are also experiencing a sig-

nificant inflow of foreign direct investment, though flows are concentrated in a few countries with well-advanced reform programmes. EU Member States are by far the main source of investment, further confirming the increasing degree of economic integration.

In addition to the economic challenges outlined above, the CEE countries still need a lot of investment in transport infrastructure and environmental protection. While the level of infrastructure in many areas is similar to that in the EU, the quality is, in general, significantly lower.

Despite major structural problems, most CEE countries have yet to develop regional policies. With transition, CEE governments, at differing speeds, dismantled the machinery of state intervention in the economy and accorded priority to macroeconomic stabilisation. However, as economies stabilised, most governments began to introduce development policies in recognition of the need to address regional disparities. This has been facilitated by decentralisation of government and encouraged by the prospect of EU membership.

Accordingly, in most countries, the legal, institutional and budgetary structure for regional policy which will be necessary to participate in EU structural policy has begun to be established. In some CEE countries (Hungary, Latvia and Romania), a specific legal basis for regional policy now exists. At the national level, the ministerial structure responsible for regional policy has been improved and administrative procedures are being put in place. At the regional level, administration has been strengthened by decentralisation.

However, fully establishing these structures and procedures is likely to be a long process. CEE regional policies are still weak, lacking a comprehensive strategy and a programming approach. Measures tend to take the form of limited projects, implemented through sectoral policies which are only loosely coordinated. There remains a need to strengthen the Ministries responsible for regional policy and to develop their operational capacity, as well as to formulate national strategies for regional policy on the basis of which sectoral policies can be coordinated. Financial procedures also need to be improved so as to channel the support from the EU Structural Funds efficiently. Much still needs to be done, therefore, before

the CEE countries will be ready to participate in EU structural policy.

The economy of Cyprus is in many ways well prepared for accession. Although harmonised PPS figures do not exist yet, the GDP per head of Cyprus in these terms may be close to or even above 75% of the EU average, with potential implications for eligibility for Objective 1 at accession. Unemployment is low and employment high, although correspondingly productivity is also low.

# **Part 1 The situation in the regions**

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## 1.1 The economy

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Since the spread of the industrial revolution last century, Western European economies have grown on average by 2-2½% a year, though with marked variations around this trend during particular periods. One of these periods occurred after the war in the 1950s and 1960s, sometimes referred to as the 'long boom', when growth in Europe averaged almost 5% a year. High growth during these years was associated with expanding trade and investment, a stable institutional and policy framework (including stable exchange rates) and the import of US technology<sup>1</sup>.

The boom ended with the oil crises of the 1970s. Since 1973, growth in the EU has once again averaged 2-2½%. This is slightly less than in the US, whereas previously it had been substantially above. It implies a doubling of output — and real income — every 30 years or so. In the 10 years 1986 to 1996, GDP in the EU grew, on average, by just over 2% a year (Table 1), though much more in the first half, 1986 to 1991, when growth, buoyed by expansion of the global economy and closer European integration, averaged over 3% a year. In the second half, 1991 to 1996, as a result partly of the downturn in the world economy, growth in the EU averaged just 1½% a year and GDP fell by ½% in 1993 for the first time since the oil crisis in 1975.

Recovery in 1994 was followed by some faltering in 1995 and 1996 when growth averaged only just over 2% a year, due in part to exchange rate uncertainty and a rise in real interest rates. Both problems were exacerbated by doubts about the credibility of national budgetary policies and the consequent prospects for the introduction of the single currency in 1999. As it has become clear that policy makers are committed to both EMU and budgets which can be sustained in the long-term, credibility has improved and despite the worsening of the global economic sit-

uation, growth over the period 1996 to 1999 is projected at over 2½% — slightly above the long-term trend.

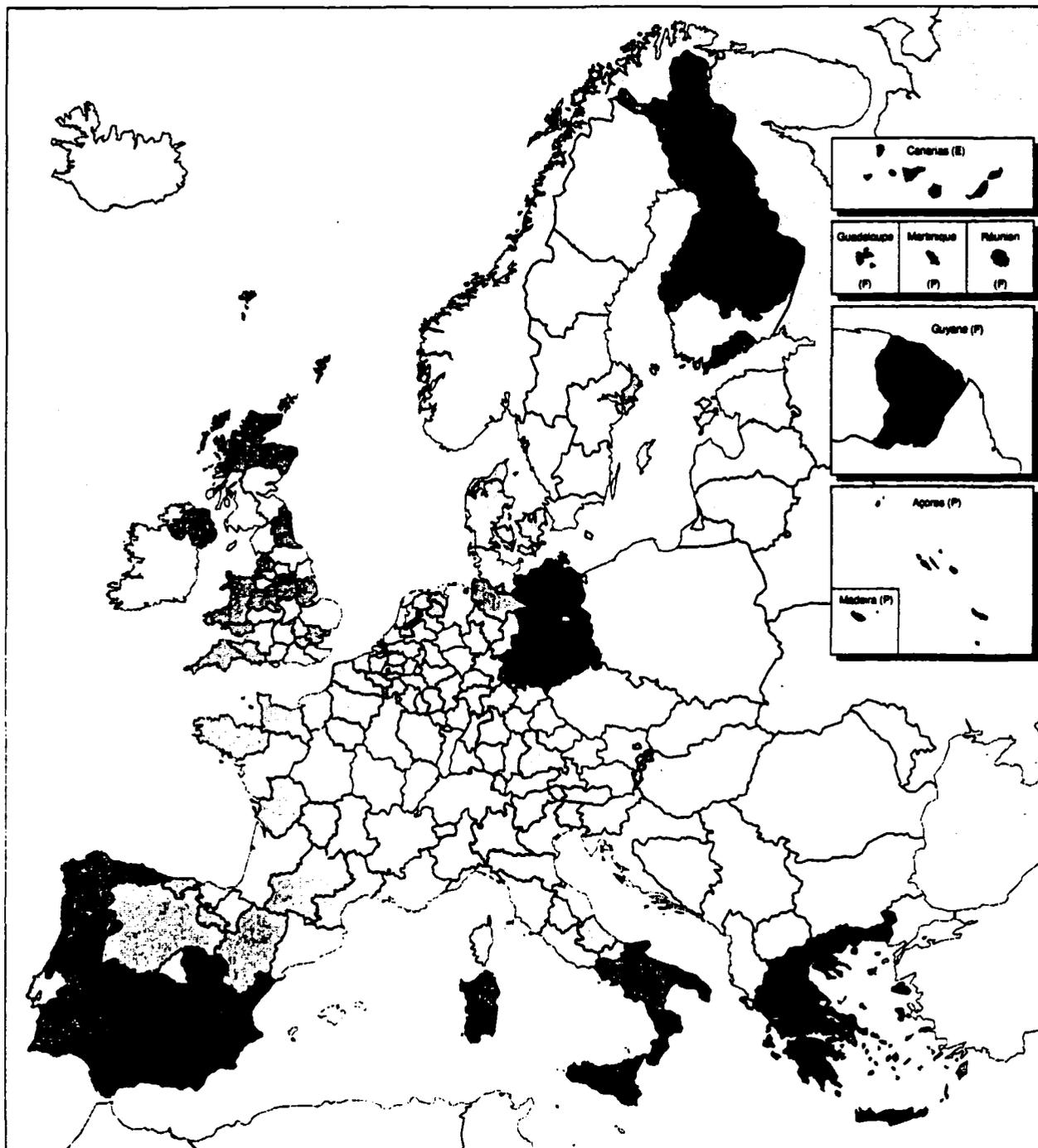
### Regional patterns

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There are striking disparities in economic performance between different parts of Europe, particularly between the central and peripheral regions (Map 1)<sup>2</sup>. GDP per head (measured in terms of purchasing power standards, PPS, to take account of differences in price levels) is typically half to two-thirds of the EU average in the Southern periphery, stretching from Greece through Southern Italy to Southern and Western Spain and Portugal, and around 60% of the EU average in most of Eastern Germany. In all of the EU's outermost regions (as defined in the Treaty), except the Canary Islands, GDP per head is around half or less of the average. There are also clusters of poorer regions in the Northern periphery, particularly in Northern and Eastern Finland and the North and West of the UK. By contrast, GDP per head is well above average in the more central area extending from the North of Italy through Southern Germany to Austria as well as in the BENELUX countries and Northern Germany.

The rest of this section is concerned with the scale of regional disparities across the Union, the variation in performance between different types of region and the specific problems in particular countries, which go beyond the simple core/periphery distinction.

The focus, in the first place, is on disparities between rich and poor regions and the way that these have changed over recent years. The fact that a region is relatively poor does not mean that it need be at a per-



**Map 1 GDP per head by region (PPS), 1996**

Index, EUR15=100

-  < 75
-  75-90
-  90-110
-  110-125
-  ≥ 125

Standard deviation = 26.9  
F(DOM) 1994

Source: Eurostat

0 100 500 km

### Measuring regional economies

The standard measure of the size and performance of a regional economy is Gross Domestic Product (GDP), usually divided by the number of inhabitants to give GDP per head. GDP is designed to measure total output in a particular area, including services. However, it is also a measure of income, the main components being wages and salaries, profits and rent, though it excludes transfers of income, from individuals and companies (which might transfer part of their profits elsewhere) as well as from government, in the form, for example, of social benefits.

This leads to a problem concerning the use of GDP as a measure of income in some regions, such as some city-regions, where commuting by people resident in other regions adds to the local work force and GDP. Income per head of the people living in the city is, therefore, overstated while that of neighbouring regions is understated. This, however, is not a major problem for most regions, especially the poorer regions which are the main focus of this report.

manent disadvantage in terms of its capacity to expand economic activity. Closer integration in the EU, combined with lower costs in poorer regions, has tended to favour some convergence in GDP over the period 1986 to 1996. This, however, was concentrated in the first half of the period and at the very end, while, in between, the recession of the early 1990s weakened the forces favouring poorer regions and reduced investment in their productive base, in part, because of smaller inflows of capital from the more prosperous areas. Recovery since 1994 has been accompanied by renewed convergence, though, in this period and before, the extent varies between regions, reflecting their supply-side characteristics.

Secondly, different kinds of region perform differently. An obvious feature is the sectoral mix, regions where growing sectors are strongly represented tending to do better than those with sectors undergoing restructuring. The ability to attain critical mass is also important. Regions which are rural, sparsely populated and/or less accessible are likely to find it difficult to accumulate an adequate level of demand or provide a sufficient range of services to compete at the European level, whereas urban areas are likely to find it easier. Capital cities, in particular, are consistently among the richest areas in a country and the

### When regions converge

The stylised fact, that convergence occurs at a more rapid rate during periods of economic growth and closer integration, is a simple yet powerful observation. It stems from the nature of the various forces which affect relative growth in different regions:

- the attraction of investment to regions where costs are lower and labour and other resources more plentiful;
- the transfer of technology and best practice from leading to lagging regions;
- the migration of workers from regions with low pay and low job opportunities to those with higher pay and more opportunities, which may not lead to convergence in output or income but may equalise wages between regions.

All three of these forces are boosted by economic integration, while the first two are also boosted by economic growth when business opportunities are expanding. (The effect on migration is less predictable since higher demand for labour in upturns in more prosperous regions may stimulate people to move but the lower unemployment in lagging regions at such times may encourage them to stay.) Since the first two are the main mechanisms for convergence at the EU level, convergence is likely to occur more in booms. Conversely since migration has historically tended to be the main mechanism in the US, convergence there has tended to occur more during recessions.

A final point is that there is nothing automatic about an individual region converging, even if this is happening generally. It is not enough for investment and new technology — the two long-run determinants of growth — to be potentially available. A region must also possess the supply-side features to attract both and must also have the capacity to make effective use of them.

most prosperous regions in the EU are invariably urban, whether they contain a single large city or a dynamic network of smaller towns and cities. Nevertheless, some urban areas can have inadequate infrastructure and a low-skilled work force and can form islands of poverty and social deprivation within a prosperous region. Indeed, there is evidence in parts of the Union of 'patchwork development', where the

performance of sub-regions diverges significantly from surrounding areas.

Thirdly, there are specific national features which affect regional performance. German unification provided a stimulus to growth in 1991-92, but the costs of transition have helped depress growth rates in Germany to below the average rate in the EU since then, even if growth, from a low base, was initially impressive in the East. In Finland, the decline in trade with the former Soviet Union (and the consequent collapse in demand) depressed output sharply in the years 1990 to 1993 and outpaced the capacity of national and regional labour markets to adapt. In the UK, the size and influence of financial markets and the closer links to the US led to recession coming earlier and being deeper than in most other parts of Europe.

## Indicators of regional disparity

There are many possible measures of regional disparity. For example, the GDP per head in the 10 poorest regions taken as a whole increased from 41% of the EU average in 1986 to 50% in 1996. Even adjusting for the statistical effect of the accession of Eastern Germany (see box below), this represents a catching up of 7½ percentage points in 10 years. Relative GDP per head in the 10 richest regions has correspondingly declined over the period from 3.7 times the level in the 10 poorest ones to 3.1 times (Table 2).

The list of the 10 poorest regions has changed little over time, with 8 appearing in both 1986 and 1996. The regions concerned are generally remote and in many cases ultraperipheral. They include the French overseas dominions (DOMs), some Mediterranean islands, the Spanish region of Extremadura and some Portuguese regions. GDP per head in all of the bottom 10 in 1986 converged towards the European average over the period, in many, by 10 percentage points or more.

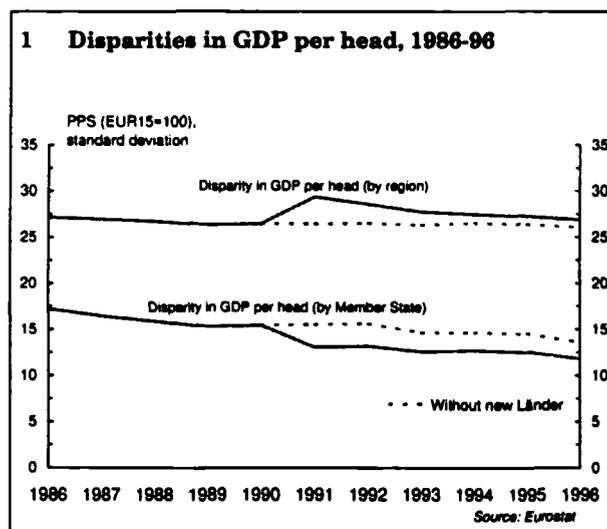
The list of the 10 richest regions has also changed little and, again, 8 were included in both years. These consist of four capital cities (Brussels, Ile de France (Paris), Wien and London) and four regions in West Germany. Relative GDP per head in these regions increased further over the period from 153% of the EU average to 158% (though this may possibly be due to increased commuting — ie more output being pro-

duced by non-residents — rather than increased output per resident — see Box).

Extending the number of regions compared, GDP per head in the 25 where this was lowest increased from 52% of the EU average in 1986 to 59% in 1996. GDP per head in the 25 richest regions declined from 2.7 times the level in the 25 poorest to 2.4 times over the 10 years. This is all the more impressive, since the list of poorest regions in 1996 contains 5 East German regions which were not included — and for which data were not available — in 1986.

An overall indication of changes in disparities in GDP per head can be obtained from statistical measures such as, in particular, the standard deviation (weighted for population), a measure of overall differences from the mean (Graph 1), which summarises developments in all regions rather than just the two extremes. Excluding the effect of the new Länder becoming part of the Union, there was a small decline in the measure over the 10 years 1986 to 1996, indicating a slight reduction in the average disparity. A small fall in the measure in the second half of the 1980s was followed by a small rise in the recession of the early 1990s and subsequently by a reduction to the pre-recession level during the recovery between 1994 and 1996. It remains to be seen whether the continued recovery in the remainder of the 1990s will have brought a further narrowing of disparities.

However, the small reduction in the overall disparity is the result of a sharp decline in disparities below average GDP per head and an increase above the average. As noted above, the relative prosperity of both



the richest and the poorest regions increased over the period. The summary measure reflects this, disparities being compressed at the bottom end of the distribution and expanded at the top, the typical poorer region (ie one with output below average) experiencing an increase in its GDP per head of some 3 percentage points relative to the EU average.

At the same time, there has been very little change in the ranking of particular regions, and the order in terms of GDP per head was much the same in 1996 as 10 years earlier (Spearman's rank correlation coefficient between the two rankings was 0.91 — 1 being a perfect match). As GDP per head in regions with a relatively low level has converged on the average (or diverged away from the average in richer regions), it has, therefore, done so at a similar rate in regions with similar GDP per head right across the EU.

This is reflected in the fact that, increasingly, disparities are not between but rather within Member States (Map 2, Table 3). Catching up in the four Cohesion countries often stems more from growth in relatively rich urban centres, particularly capital cities, than from that in poorer regions. This corresponds to a well-known development phenomenon, more favoured regions initially experiencing faster growth than the less favoured. In the first phase of development, therefore, disparities within a country often widen, while in the second phase, efforts need to be concentrated in the poorer regions to ensure they benefit from national success (from 'trickle down'). Narrowing disparities in Portugal suggest it may be in the second phase, while widening disparities in Greece suggest it is still in the first phase.

The other major cause of growing disparities in Member States is the effect of economic restructuring. Although there are overall gains to increasing specialisation which enable firms in the same sector to benefit from externalities as well as economies of scale, regions relatively dependent on declining industries tend to lose, those where growth sectors predominate tend to gain. Increasingly, the regions badly affected by this are ones in Northern Member States which were previously prosperous.

## Urban, rural and sectoral issues

Two key influences on regional economic performance are the urban-rural mix and the sectoral com-

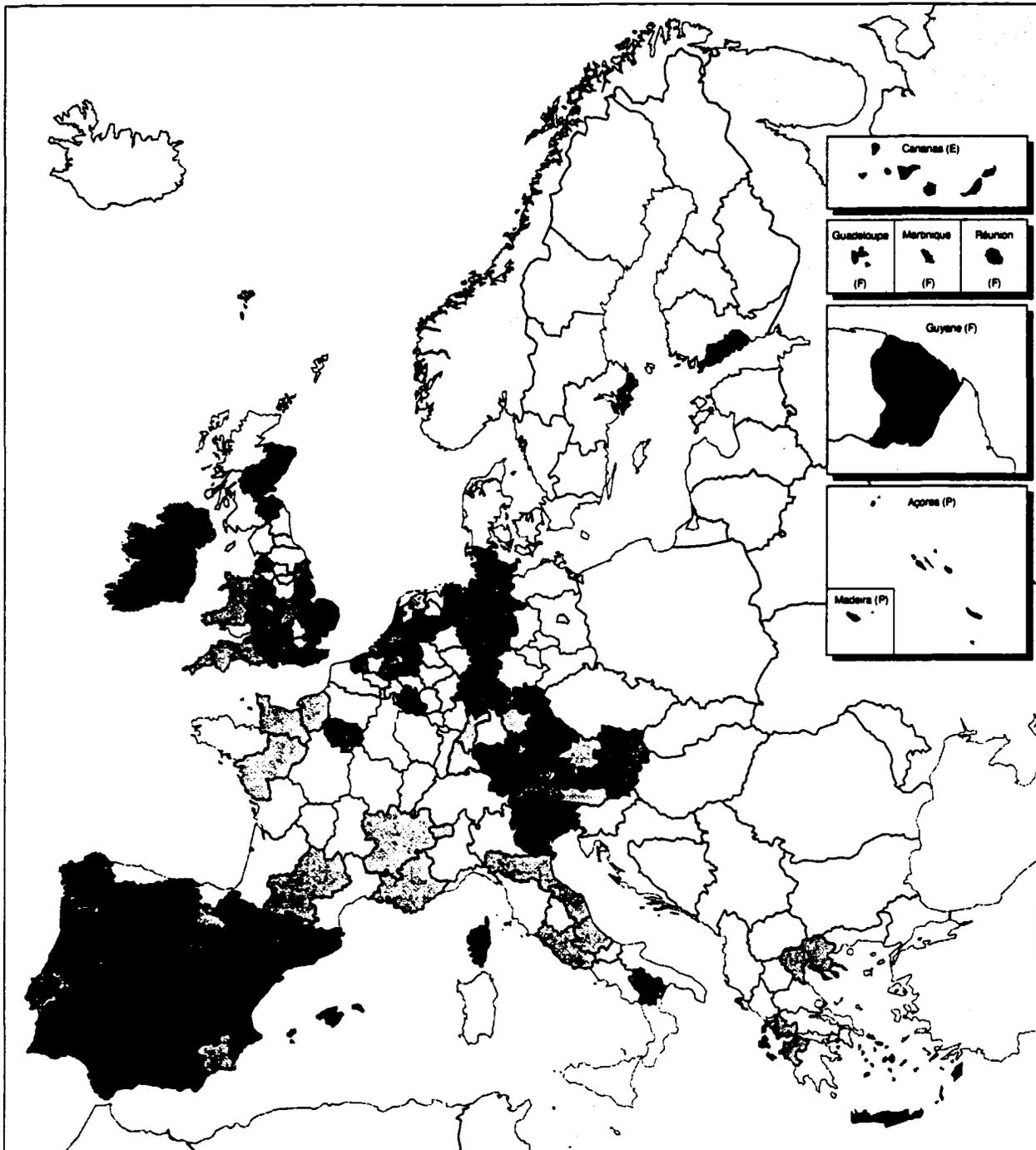
position of economic activity. There is a clear link between the two — for example, there is a close identity between rural areas and agricultural ones. The following stylised classification of regions can be used for analytical purposes:

- urban regions distinguished in terms of population density and subdivided between:
  - regions in which activity is concentrated in services
  - regions in which activity is concentrated in manufacturing
- rural regions distinguished by the sparseness of population and often where agriculture is relatively important.

This is obviously only a very broad system of classification and many regions do not fit neatly into one of these categories. Urban areas, for example, may often have a significant proportion of activity in manufacturing even where they are classified as being predominantly service centres, and vice versa. Moreover, in rural areas, only a minor proportion of activity will be directly in agriculture. However, distinguishing groups of regions which most closely fit this classification may enable general features linked to a particular sector to be more clearly identified than in the case of more mixed regions.

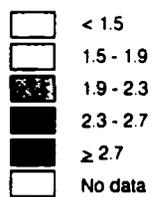
The first step is to identify the urban and rural areas of the EU. A common approach is to distinguish densely populated areas (more than 500 inhabitants per square km), intermediate areas (500 to 100) and thinly populated ones (less than 100). For present purposes, the densely populated regions can be defined as 'urban' and the sparsely populated as 'rural'<sup>3</sup>. Where possible, the classification is performed at the municipality (or commune) level but, for some purposes, data are only available for NUTS-2 regions (see Annex for the details of the classification).

Using this definition, half (49%) of the Community population lives in urban areas, just under a quarter (24%) in rural areas, and a little over a quarter in intermediate areas. These urban areas account for only around 3½% of the EU's surface area, the rural areas for over 80%. Urban areas are concentrated in or near the rich central part of the EU, reflecting the association of cities with wealth creation (Map 3), and



**Map 2 Growth of GDP by region, 1986-96**

Annual average % change



EUR15 = 2.1  
Standard deviation = 0.8

D: excluding new Länder  
F(DOM): 1986-94

0 100 500 km

Source: Eurostat

an urban ribbon can be distinguished running from Belgium and the Netherlands through Western Germany to Northern Italy. Most of the other major urban areas, such as Paris, Rome, the South-East and North-West of England and Copenhagen lie close to this.

Outside the central area, the settlement pattern is more polarised with significant urban areas — often capital cities and/or coastal conurbations — separated by large thinly-populated tracts. In many peripheral parts, notably in Scotland, Northern Ireland and Ireland, Greece, Sweden and Finland, urban areas are relatively small and scattered and rural areas predominate.

A final point to note is the distinction between monocentric and polycentric urban networks. Large cities generally dominate the surrounding area and are often where services and economic activity, vital for the region as a whole, are concentrated. They are often important transport hubs. Relatively small, lone cities, such as Dublin or Helsinki, perform some of these functions for surrounding areas of low population. On the other hand, smaller towns or cities often form networks, where no one of them is dominant, and tend to be characterised by certain types of activity, particularly within manufacturing. This is particularly the case in parts of Western Germany, the Netherlands, Northern Italy and the Midlands in the UK.

To identify the most typical service, manufacturing and agricultural regions, the 25 regions with the highest concentration of employment in each sector were selected (Map 4). Although these regions represent extremes, as noted above, this helps to identify common developments which can then be used in the analysis of more mixed regions.

The regions most dependent on services are generally clustered around Northern capital cities but include an area in the Mediterranean between Rome and the Côte d'Azur. The highest concentration of employment in services is around London, where 4 regions of 13 million people are in the top 25 service regions. London is by far the largest financial centre in the EU, as well as being a centre of government and business services and the headquarters of some of the world's largest multinationals. It is followed by the Ile de France (11 million people) which has similar characteristics and then by regions around the twin

administrative and trading centres of Amsterdam and the Hague (7 million people in total).

In contrast to services, manufacturing is more closely associated with smaller towns and cities and with polycentric urban networks. Most of the top 25 manufacturing regions are in or near central and Southern Germany and Northern Italy and contain such networks. In fact, Germany accounts for just over half (13) of the 25 regions with the highest share of employment concentrated in manufacturing. The only ones outside Germany and Italy are based around medium-sized cities in Northern Spain.

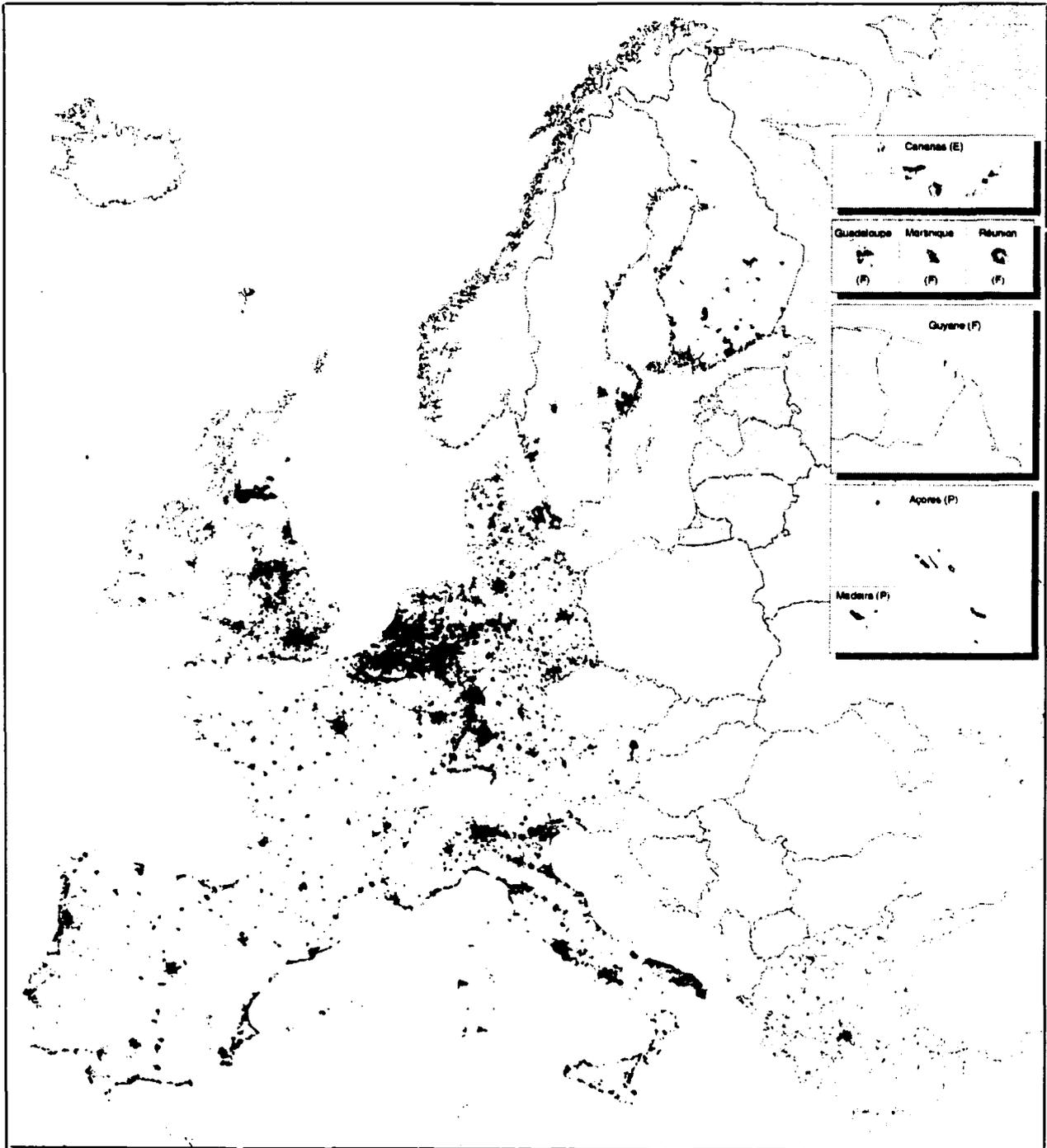
The 25 regions with the highest concentration of agriculture are, as would be expected, rural, peripheral areas in Scandinavia and the Mediterranean. Nine of the top 10 are in Greece, in all of these agriculture accounting for a third of employment as against an average of 5% for the EU as a whole, and all the Greek regions, except Athens and the Aegean Islands, figuring in the top 25.

### Trends in these areas

Each of these types of region has particular strengths and weaknesses. In each group, there are successful regions which have managed to capitalise on their strengths and others which have succumbed to their weaknesses and have suffered declining activity. In some cases, there are marked contrasts in performance within a region.

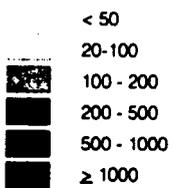
As regards urban areas, towns and cities tend to be centres of prosperity, creativity, culture and innovation in the EU as well as communication hubs. In addition, a number of larger cities serve important functions as gateways to, and key decision-making centres in, a rapidly-changing global economy. The 10 regions with the highest level of wealth creation in the EU, except for Luxembourg, contain major cities. Regions (NUTS-2) classified as urban have a combined GDP per head of 22% above the EU average (Table 4). If this reflects the relative level in municipalities, it implies that areas defined as urban account for around 60% of total GDP in the EU.

At the same time, the main problems facing the EU — unemployment, poverty, economic restructuring and the destruction of the natural and physical environment — are for the most part concentrated and accentuated



**Map 3 Population density by NUTS-5 region, 1991**

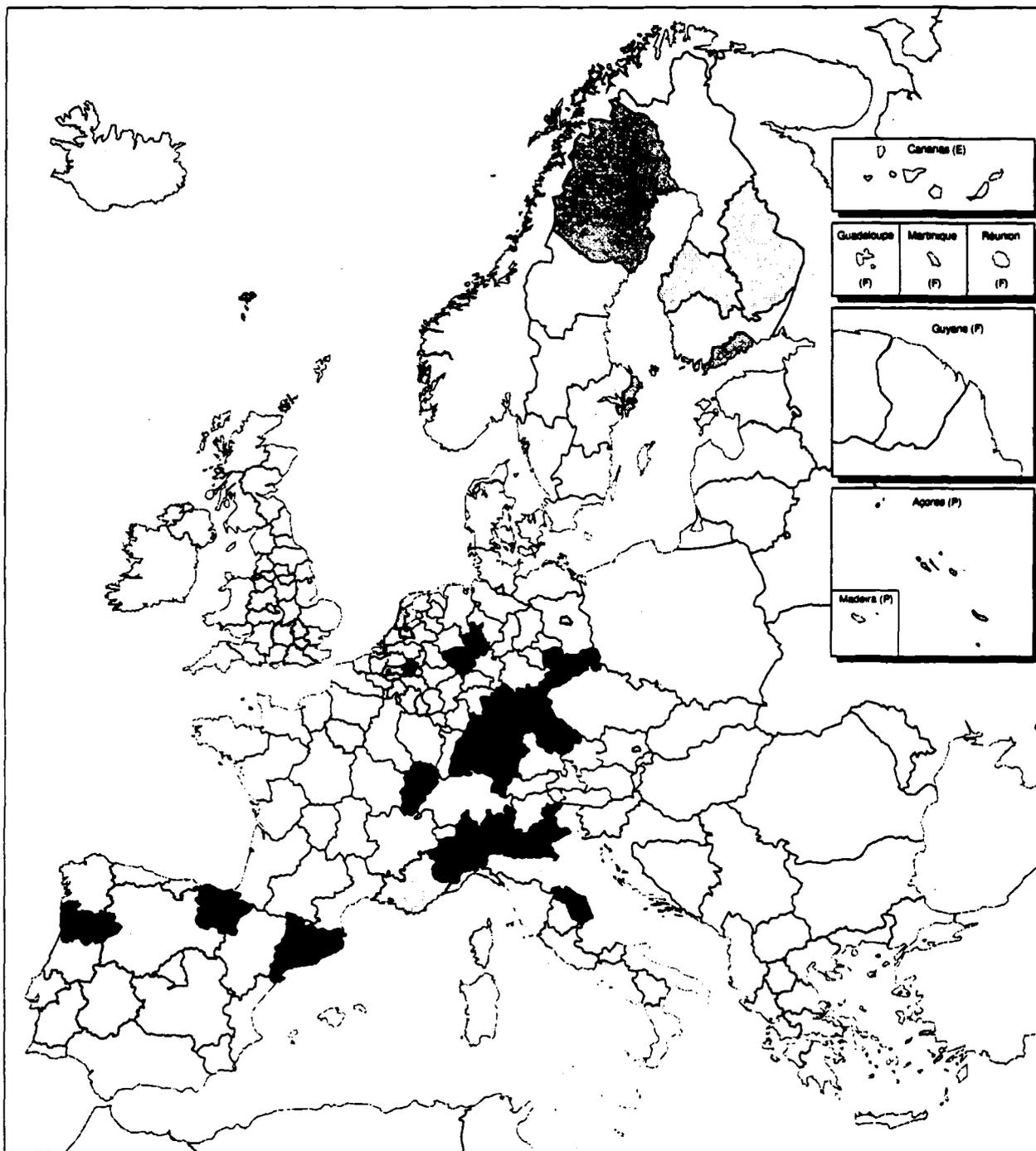
Inhabitants/km<sup>2</sup>



UK (Scotland): NUTS-4

Source: Eurostat, SIRE

0 100 500 km



**Map 4 Regions with highest employment in agriculture, industry or services, 1997**

Top 25 regions

-  Agricultural employment
-  Industrial employment
-  Employment in services
-  Other regions
-  No data

Employment according to place of residence

Source Eurostat. LFS

0 100 500 km

in urban areas. Opportunity and deprivation are often created simultaneously and in close proximity. For example, the largest financial centre in the EU, the city of London, is next to some of the most poverty-stricken and deprived areas in the UK.

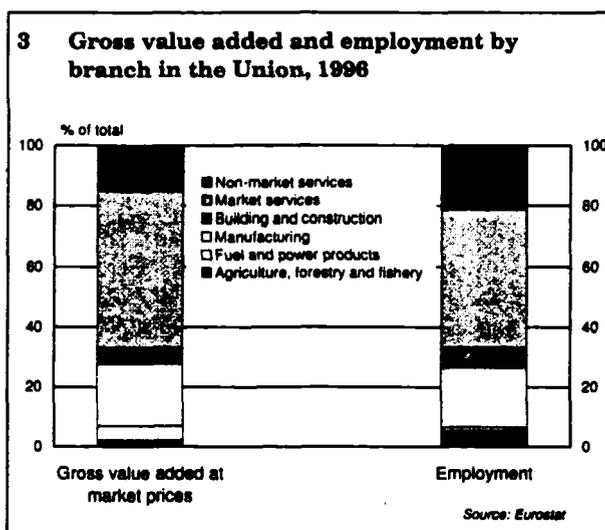
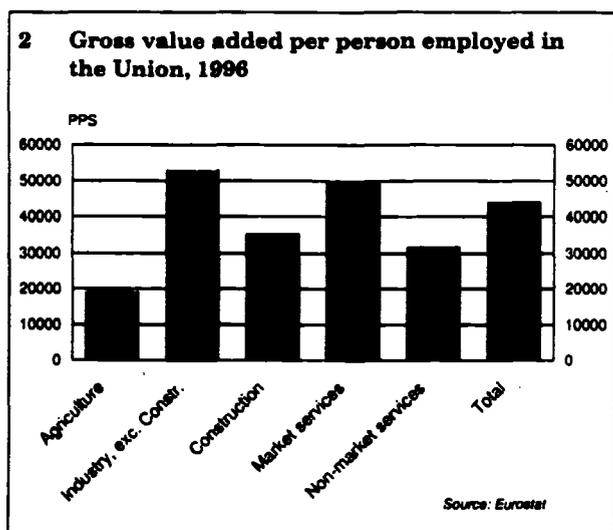
Major urban centres are characterised by services, often concentrated in the more advanced sectors, as well as in communal services, which are mostly non-market, where growth of employment has been most marked (Table 6). Moreover, within these sectors, higher-level functions tend to be performed disproportionately in large urban areas. For example, 14% of urban employment is in the financial and business service sectors, as compared to around 6% in rural areas. This does not take account of the fact that higher level financial functions are almost exclusively concentrated in a few urban centres, and financial sector employment in rural areas consists almost entirely of local branches of high street banks. Urban areas are also centres of public administration, again the overall figures — 30% in non-market services as against 26% in rural areas — do not reflect the fact that more important functions tend to be concentrated in urban areas.

Correspondingly, the top 25 service regions are among the most economically successful in the EU, with combined GDP per head of 27% above the EU average (Table 7), reflecting the preponderance of higher valued-added services and the high level of output per person employed which they display (Graphs 2 and 3). In some of these regions, however, activity is concentrated in lower valued-added services, especially in the public sector (where the absence of profits

reduces value-added, output per person employed being some 30% below the average level for services as a whole). In addition, the absence of a strong private sector means that overall employment levels tend to be low. In these cases — in Merseyside, Corsica and the North of Sweden, for example — GDP per head tends to be below average.

Manufacturing is more evenly spread across regions and is most highly concentrated in intermediate areas, where networks of smaller towns and cities predominate. Although all towns are to some extent service centres, the economy of these towns is typically based on particular manufacturing sectors. The top 25 manufacturing regions are relatively strong economically, with a combined GDP per head of 8% above the EU average as a whole and most individual regions having a level close to or above the average (Table 8). Even those with below average GDP per head are among the fastest growing regions in Europe, which reflects the fact that although many parts of manufacturing are in decline, especially in terms of employment, the more advanced parts are performing well, at least in output terms.

The influence of restructuring is, however, probably understated by this exercise, since the top 25 manufacturing regions tend, by definition, to be the more successful ones. Differences within manufacturing are much wider than between manufacturing and services. In addition to the differing fortunes of different industries (pharmaceuticals as opposed to textiles, for example), rationalisation and the realisation of competitive advantage mean that many industries are growing in some regions but declining in others,



which suggests that concentration may be higher in future. It also suggests that the counterpart of good performance in the top 25 manufacturing — or, indeed, service — regions, is restructuring and output decline in other regions.

In rural areas, too, there is a dichotomy between strengths and weaknesses. On the one hand, they contain a wealth of natural resources, habitats and strong cultural traditions, are desirable places to live and are increasingly important tourist locations for the pursuit of recreational and leisure activities. On the other hand, many rural regions are in marked decline. Overdependence on resource-based activities, particularly agriculture, leaves them vulnerable to the restructuring and rationalisation of such sectors. The inadequate scale of other industries often leaves them with few viable development options. The result can be depopulation and an exodus of young and highly qualified people especially, leaving an ageing and lower skilled population behind.

Rural areas tend to have low levels of output and income (Table 5). Together they account for just over 20% of EU population, but their GDP per head is only 79% of the EU average, implying that rural areas account for around a sixth of total EU GDP. It should be noted, however, that their low level of income may be mitigated in some degree by a lower cost of living (the PPS measure of GDP allows for national but not regional differences in prices). The poorest rural areas are located in the South of the Union, in Greece, Portugal, Southern Italy and Spain.

Agriculture, mining and quarrying account for nearly a sixth of employment in rural areas. This means, however, that five-sixths of employment is in other sectors. Indeed, manufacturing provides twice as many jobs as agriculture. Even taking account of the fact that much of rural manufacturing and services will be linked in some way to agriculture, it indicates that there is much more to rural areas than agriculture, though there is no denying the link between the two.

Since agriculture is a relatively small sector in value-added terms (accounting for just 2% of EU GDP) and value-added per person employed is only around 42% of the EU average, it is difficult for regions to become prosperous through agriculture alone. However, for the more remote and less accessible regions, it can be difficult to develop other sectors to

an adequate scale. The top 25 agricultural regions are all poorer than the EU average, with the exception of the Åland Islands in Finland, which are a special case, and their combined GDP per head is over a third lower than the average, emphasising the gap in development which exists (Table 9).

At the same time, the 25 most agricultural regions represent an extreme, being drawn largely from the most backward regions in the EU. Although they serve to highlight some of the main features affecting agricultural regions, they exaggerate them. In practice, there is no automatic link between rural areas and poverty. Not all rural economies are weak and not all of them are overdependent on agriculture. Those that are more accessible, contain thriving urban areas and have diversified away from the lower value-added parts of agriculture, are in many cases performing better than average.

A good example is Emilia-Romagna, the success of which is based on high value-added activities compatible with the rural environment and good links to Northern Italian urban centres. Other examples include East Anglia and Rhône-Alpes, both of which contain small cities specialising in high technology. All three examples illustrate the importance of sectoral balance for economic development and prosperity.

They also illustrate the importance of the relationship between urban and rural areas. Urban areas are vital locomotives for the development of neighbouring rural areas. In an increasingly globalised economy, where there is increased potential for links between urban areas, it is important that this should not be at the expense of links to local rural areas.

## Trade

The importance of trade in stimulating growth, competitiveness and employment is well attested, both in economic theory and history. Foreign trade does not simply furnish market opportunities and broaden the range of goods available for consumption. It also stimulates investment, on the one hand, and innovation and technology transfer, on the other. Since these are the two main factors underlying long-term growth, especially in lagging regions, periods of expanding trade have tended to be periods of high

growth and increasing convergence between regions.

Trade is a significant part of the EU economy. Total exports of goods and services accounted for around 30% of GDP in EU countries in 1997. Most of this trade, some 60%, was between Member States and internal to the EU, which suggests that more than one in six jobs in the EU is directly dependent on internal trade.

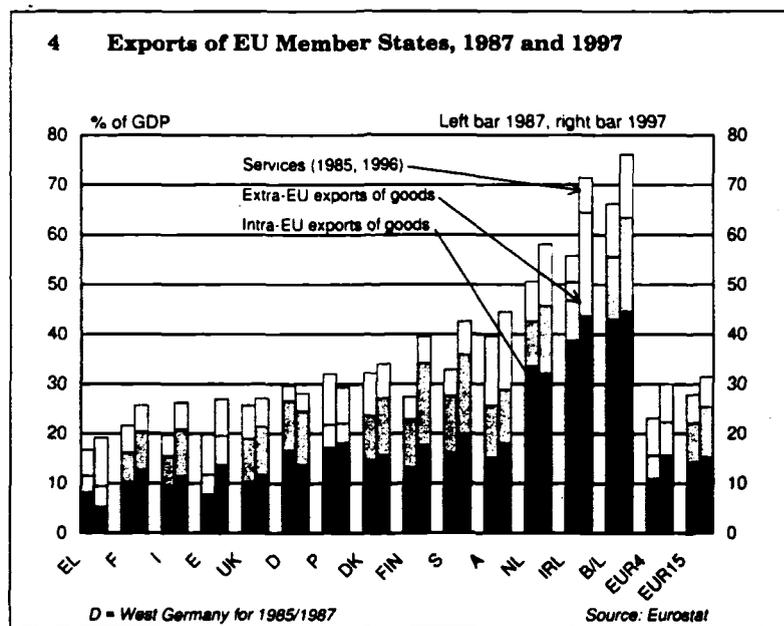
Closer economic integration in the EU has increased opportunities for trade between Member States and these are likely to increase further with the single currency. Between 1987 and 1997, despite the recession of the early 1990s, internal EU trade in goods increased from 14% of GDP to almost 15%. Even in a poor economic climate, therefore, internal trade has proved a reliable component of the economy. External trade<sup>4</sup> has also grown, from 8% of GDP to nearly 10% over the same period, reflecting the increasing globalisation of the EU economy. With sustained economic growth and the advent of the single currency, internal trade promises to be a significant contributor to overall growth, while the continuing trend towards globalisation is likely to mean that external trade will also increase in importance, putting ever greater onus on competitiveness.

The scale of trade of any country is determined at least in part by its size and geography (Graph 4). For obvious reasons, small countries, such as Ireland, or ones neighbouring large economic areas, such as Belgium, will tend to be large exporters and importers. For every Member State, however, irrespective of their size or position, over half their exports of goods are to other parts of the Union, the proportion ranging from around 55% in Italy, Finland and the UK to over 70% in Belgium, the Netherlands and Spain and over 80% in Portugal. The same is true for services, except for the UK, where only just over a third of exports go to other Member States. At the other extreme, more than 75% of service exports from Spain and Portugal go to the rest of the Union.

For the four Cohesion countries, in particular, trade within the EU has acted as a powerful stimulus to growth. As Euro-

pean economies have become more integrated, Cohesion Four exports of goods to the rest of the EU have increased from 11% of their combined GDP to over 15% between 1987 and 1997. At the same time, exports of services to other Member States rose from 4½% of their GDP to over 5½% in the same period (these figures exclude Ireland for which no data on intra-EU trade in services are available). The rise is all the more significant since their GDP increased by one third over the period, so in real terms their exports nearly doubled. However, all of them, except Ireland, still have relatively low exports of goods relative to GDP given their size, especially Greece, where total exports of goods were under 10% of GDP in 1997. While this is compensated to some degree by high exports of services, exports relative to GDP in all of the countries exceeding the EU average, especially in Greece (11% of GDP), it indicates that there is potential for further increases.

The Cohesion Four, because of their relatively high growth, have also increased in importance as an export market for other Member States (Graph 4). Between 1987 and 1997, their imports of goods from the rest of the EU increased from 11% of their GDP to 16%, doubling in real terms and reaching some 120 billion ECU in 1997. Although their imports of services from other Member States are much smaller relative to their exports, largely reflecting their high income from tourism and, in Greece, the importance of earnings from shipping, they still amounted to around 16 billion ECU in 1997 (again excluding Ireland). Export opportunities are



likely to increase further, both as the Cohesion countries grow richer and as the European economies become even more integrated.

It is also relevant to examine the composition of trade (Tables 10, 11 and 12). While the EU as a whole is close to balance in many manufacturing sectors, reflecting the tendency in most advanced economies to export and import the same kind of good, the imbalances which exist indicate that the EU tends to have a comparative advantage in 'medium-tech' products rather than in basic goods or 'high-tech' sectors. Such products, in general, have above average value-added but perhaps are likely to show a lower growth in demand in future than high-tech products.

In 1997, therefore, the most significant net imports were of raw materials, including energy, while the EU had substantial net exports of engineering products and various kinds of machinery, including motor vehicles and space and aviation equipment, as well as of chemicals and pharmaceuticals. It was also, however, a net importer of 'high-tech' products, such as office machinery and electronic equipment, including TVs and audio equipment.

The Cohesion Four, on the other hand, have a somewhat different composition and, in general, tend to specialise in more basic, low value-added products, for which the prospects of demand growth are unfavourable. In addition, and perhaps as a consequence of the relative concentration of exports on this kind of product, Portugal and, more particularly, Greece had sizeable deficits on visible trade in 1997 and only Ireland of the Cohesion countries had a surplus.

Three of the Cohesion Four, all except for Ireland, are, therefore, net exporters or are close to trade balance in clothing and textiles, and seemingly a high proportion of exports are relatively low value-added products, in contrast to Italy which is also a major net exporter, while Portugal and Spain are also net exporters of wood products. Although all four countries have a high level of employment in agriculture, only Greece is a large net exporter, and the export performance of Portugal and Spain is poor given the number employed in the sector. Only Ireland of the four specialises in exporting finished food products, so adding value domestically to the goods before they are shipped abroad.

The four countries, except Ireland which is a major net exporter, all have poor trade performance in high-tech sectors and are substantial net importers of chemicals and pharmaceuticals, office machinery, electrical and telecommunications equipment and precision instruments. All four countries are net importers of aviation and space equipment and all except Spain, net importers of motor vehicles and other transport equipment.

### **A portrait of the weaker regions and Member States**

In 1986, the year of the accession to the EU of Spain and Portugal, the four Cohesion countries had a combined GDP per head, in PPS terms, of around 65% of the EU average. Over the next 10 years, growth in the four was higher than that in the rest of the Union and by 1996, their GDP per head had risen to 76½% of the EU average, an increase of around 10 percentage points over the decade, adjusting for the effect of German unification (see Box).

This convergence has been strongly dependent on the economic climate. The Cohesion countries outperformed the EU average in the boom years of 1986 to 1990 and at the beginning of the recession of the early 1990s. However the recession itself affected the Cohesion countries more than other parts of the Union, and convergence came to a halt. Since 1995, however, with recovery, the gap has begun to narrow again and forecasts for 1999 suggest that GDP per head in the four has risen to 79% of the EU average. While the experience since 1986 emphasises the long-term nature of convergence, as the gap in GDP per head remains wide despite the progress made, the four countries taken together are catching up at a rapid rate in relation to both historical experience and that in other parts of the world.

There have, however, been marked differences in performance between the four countries. Ireland has been more successful than any of the others, recording by far the highest rate of growth in the EU over the 1990s even during the recession years. GDP per head, which was only around 61% of the EU average in 1986, increased to over 96% a decade later and is estimated to have exceeded the EU average in 1998.

### **Convergence in GDP per head: the effect of German unification**

Comparisons of GDP per head in the four Cohesion countries with the EU average are affected by the inclusion of the new German Länder in the calculation of the average from 1991 on. This had the effect of reducing average GDP per head in the Union and, accordingly, of increasing the relative level in the Cohesion countries and in lagging regions. Because no reliable data exist for GDP in the former East German Länder before 1991, it is not possible, as it is in the case of other new entrants, to adjust the EU average to include the new Länder in earlier years. However, some allowance needs to be made in order not to overstate the degree of convergence.

One method commonly used is to remove Eastern Germany from the EU average at the end of the period, to make it comparable with the beginning of the period. In 1996, this raised the average by some 1½%, so Cohesion country average GDP per head would be 75½% of the revised EU figure, as opposed to 76½%. Since the Cohesion countries averaged 65% of the EU as a whole in 1986, the adjustment reduces convergence from an apparent 11½ to 10½ percentage points.

Another method is to make the adjustment at the point of accession. Between 1986 and 1991, the GDP per head of the four Cohesion countries rose from 65% of the EU average to 71%, excluding the new Länder from the calculation of the EU average in both years. Between 1991 and 1996, it increased from 73% to 76½%, in this case including the new Länder in the calculation of the average in both years. Convergence is, therefore, 9½ percentage points when measured this way.

A final point to make is that the narrowing of the gap in GDP per head of the Cohesion countries with the rest of the Union over time does not only reflect faster growth of their GDP than elsewhere. It is also affected by changes in relative price levels as reflected in the PPS measure (or by revisions in the PPS estimates themselves). These changes reflect an increase in prosperity, but not necessarily an increase in productivity. See the methodological annex for more information.

Much of the growth has been driven by inward investment and the development of multinational enterprises in specific sectors, and there are concerns about the extent of linkages into the local economy and spillovers into other sectors. This has given rise to doubts about the durability of high growth rates. Another sign of potential fragility in the economy is the concentration of growth in certain areas, particularly in the East of the country. Nevertheless, the record of the recent past remains impressive and there is no question that real income and employment have risen markedly. Moreover, service sectors have also developed rapidly, especially in Dublin, and these offer further potential for growth in the future.

Portugal, like Ireland, has also achieved growth above the EU average since 1986, though at a more modest rate. Like Ireland also, growth has been unevenly distributed across the country. On joining the EU, it experienced large inflows of foreign investment and a marked increase in exports, both of which stimulated growth. As a result of this and as a consequence of the appreciation of the Escudo which raised real income levels, GDP per head increased from 55% of the EU average in 1986 to 70% a decade later.

Despite the growth over the period as a whole, Portugal did not escape a slowdown in growth in the early 1990s and recovery was delayed longer than elsewhere, as a result partly of weak investment and partly of over-concentration in traditional sectors such as clothing and textiles. Although significant progress has been made, some fragility in the economy remains and there is a particular need to modernise the industrial structure. Growth has resumed since 1995 and GDP per head for 1999 is estimated at 72% of the EU average.

Development has been concentrated in the coastal strip and the two urbanised regions of Lisboa and Norte, for which most of the gap in GDP per head relative to the EU average has been closed. The poorer regions and the interior are also catching up — typically experiencing a rise of some 15 percentage points in relative GDP per head over the decade 1986 to 1996 — but significant differences remain. The most dramatic is between Lisboa, where GDP per head was 88% of the EU average in 1996, and neighbouring Alentejo, where it was just 60%. At the same time, however, considerable social problems have emerged in Lisboa.

Spain has also experienced relatively high growth since 1986, GDP per head increasing from 70% of the EU average in 1986 to 79% in 1996. Recession hit particularly hard in 1993, GDP being lower in 1994 than two years earlier, but growth has been above average since then and GDP per head is projected to increase to 80% of the EU average in 1999. Prospects for continuing convergence of output per head in Spanish regions seem favourable.

Spain is the second largest Member State (after France) in terms of land area, so it is perhaps to be expected that the pattern of development should be complex and uneven. Growth has been high in the prosperous regions of Madrid and Cataluña, which already had a strong economic base, but also in the very poorest regions in the South, where a strengthening of the economy is evident. On the other hand, regions with output in between, particularly those on or near the Northern coast, are performing less well. Nevertheless, GDP per head in only one Spanish region — Murcia — is failing to converge towards the EU average.

The strongest growth since 1986 has been in Madrid, driven by a strong service sector, and this has spilled over into neighbouring regions. GDP per head in the capital was just above the EU average in 1996, while in Cataluña, it was only slightly below (99%), like other regions in the North-East, building on a strong industrial base and attracting significant inward investment.

Regions in Southern Spain have historically had a weak economic base and are still some of the poorest in the EU. Significant supply-side improvements, however, are beginning to pay off and GDP per head in all of these regions is now converging rapidly towards the EU average. Two of the poorest regions, Castilla-la-Mancha (where GDP per head rose from 54½% of the EU average in 1986 to 66% in 1996) and Extremadura (where it rose from 44% to 55%), have recorded some of the highest growth rates in Spain. On the other hand, GDP per head in Murcia has remained unchanged at 67% of the EU average and Southern regions, in general, remain heavily dependent on agriculture. Although the situation has improved in the recent past, with the end of the drought in 1996 which helped increase production in the South by 13%, this is largely a short-term factor and major diversification and continued supply-side improvements are necessary to maintain the impetus towards convergence.

At the same time, growth in most of the Northern coastal regions has been relatively slow. The poor performance in manufacturing continues to limit (but not prevent) convergence and restructuring looks set to continue. As in the South, however, one of the poorest regions, Galicia, has shown a relatively high rate of growth, its GDP per head rising from 55% of the EU average in 1986 to 63% in 1996.

In Greece, the poorest Member State in the Union, growth has been little higher than in the rest of the EU since 1986. Macroeconomic reforms, however, have started to have some effect in recent years and GDP per head in 1996 was just under 68% of the EU average, up from 60% in 1986. Growth historically has fluctuated widely from year to year; the rate in 1985, 1988 and 1991 exceeding the EU average at 3% to 4%, while GDP actually fell in 1987 and 1990, both years of high growth in the rest of the EU. Greece has still to take advantage of the export opportunities in the rest of Europe and to break free from over-dependence on domestically generated demand.

Regional disparities in Greece have historically been small. The economy as a whole is still relatively underdeveloped and most economic activities are isolated to a significant extent from developments in the rest of the EU. However, increasing trade and competition have begun to have a differential effect between regions, with Athens being favoured, in part because of its better access to the rest of EU, most air and sea traffic passing through it. Its strategic position, moreover, has been strengthened since the closing of the main road link to the rest of the EU because of the problems in the former Yugoslavia.

In consequence, growth has been concentrated in Athens, which is now both the main service and manufacturing centre in Greece and disparities are opening up with the rest of Greece. GDP in the Athens region is forecast to grow by 1 percentage point more than the national average, while prospects for other areas look poor<sup>5</sup>. This is particularly true of the rural and mountainous interior of the country where agriculture accounts for 30–40% of employment, much more than anywhere else in the Union. Only the islands, where tourism remains buoyant, seem to have a favourable outlook.

Although GDP per head in Italy as a whole is just above the EU average, in regions in the South, it is between 60% and 80% of the EU average, comparable

to the level in Greece and Portugal and the poorer regions in Spain. The lagging regions in Italy have historically been hampered by a lack of infrastructure, but while the situation in this regard has improved in recent years, they remain heavily dependent on the public sector, which is subject to increasing constraints on expenditure. As a result, GDP per head changed little relative to the EU average in the 10 years 1986 to 1996.

The new Länder in Eastern Germany share many of the problems of the other poor regions of the EU, including outmoded and inadequate infrastructure and uncompetitive firms. At the time of unification in 1991, GDP per head was around a third of the EU average and the new Länder were the poorest regions in the Union. Major investment by the German Government served to increase output per head to around two-thirds of the EU average in 1994. A slowdown in growth since then has provoked fears that catching-up may now take much longer than originally expected.

In both Finland and Sweden, GDP declined significantly in the early 1990s. Changes in the economic environment, in particular the collapse of trade with the former Soviet Union in the case of Finland, exerted more pressure than labour market institutions were able to bear and the fall in output was amplified by a sharp reduction in employment. Between 1989 and 1992, the decline in their relative level of income was unprecedented in the modern EU, GDP per head in Finland falling from 105% of the EU average to 87% and in Sweden, from 109% to 97%.

Although both countries have made a partial recovery — to just below the EU average in 1998 — the effects are still being felt in the poorer regions (GDP per head in Itä-Suomi in Finland, for example, is still only 75% of the EU average). The Northern part of Sweden and the North and East of Finland are sparsely populated, economically fragile and peripheral (the distance from Kiruna in the North of Sweden to Malmö in the South being nearly twice that from Malmö to Brussels), the harsh climate combining with low population density to increase the cost of maintaining physical and social infrastructure. The mainstay of these regions is the public sector which makes them vulnerable in the present restrictive budgetary climate.

A final point to note is that a few poor regions are in relatively prosperous parts of the EU. The reason for their low level of output and income lies, in general, in extensive restructuring and while modernisation of the industrial structure is, by definition, a common phenomenon, some regions are affected much more than others. Restructuring, affecting coal mining in particular, is a key factor in the decline of South Yorkshire in the UK (GDP per head falling from 86% of the EU average in 1986 to 74% in 1996) and Hainaut on the French-Belgium border. The effects of restructuring have been exacerbated by urban and social problems in Merseyside (its GDP per head down from 86% of the EU average to 73% over the period), while in Burgenland in Austria (72% of the EU average in 1996), they have been reinforced by the fact that it was cut off for several decades from much of its natural hinterland by Communist States.

## Conclusions

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There is clear evidence that GDP per head, and therefore the output and income of poorer regions, is converging towards the EU average. Over the 10 years, 1986 to 1996, the level in regions with below average GDP per head typically increased by around 3 percentage points relative to the EU average. Convergence, moreover, seems to have been more pronounced in the poorest regions, the 25 with the lowest GDP per head in 1986 narrowing the gap with the EU average by 5½ percentage points and the 10 lowest by 7½ percentage points. In the four Cohesion countries taken together, the gap narrowed by around 10 percentage points over the period and projections for 1999 suggest a further narrowing of 2 percentage points.

This rate of convergence is unusually rapid, both in historical and global terms. A marked growth in trade as European economies have become more integrated has been a major stimulus, exports and imports between the Cohesion Four and the rest of the EU doubling in real terms between 1986 and 1996 and now amounting to over 100 billion ECU in both cases. Supply-side improvements in many of the weaker regions, a strengthening of their productive potential and a shift into higher value-added sectors, with support from the Structural Funds, have also been important.

Significant disparities remain, however, and convergence remains a long-term process. Nearly 20% of people in the EU still live in regions with output per head 25% or more below the EU average. By comparison, just 2% of people in the US are in a similar position, and average disparities between States are less than half those between equivalent regions in the EU<sup>6</sup>. At the same time, the long-term nature of convergence is underlined by the fact that, even in such a long-established economic union as the US, disparities between regions are still declining, the average dispersion in GDP per head between States falling by around 20% since the early 1960s<sup>7</sup>.

In addition, although GDP per head in most of the poorer regions is converging towards the EU average, the pace at which this happens varies and different types of region have performed very differently. Urban areas have generally performed well, despite serious economic and social problems in certain parts, as have regions with high concentrations of manufacturing and/or service activity, though there are exceptions, notably in those dependent on the public sector and those where there has been rationalisation of manufacturing. Rural areas, in particular, are vulnerable, especially those with heavy dependence on agriculture.

New challenges lie ahead. Enlargement in the past has brought new problems for the Union, but also new opportunities and increased diversity. The prospective enlargement to the East is no different in these respects. The changing global environment, moreover, with the intensification of competition that it brings, underlines the need for continued support for regions undergoing economic and social restructuring, so that they are able to take advantage of the new opportunities and new markets which are opening up and which are just as much part of global change.

### The measurement of the quality of life

GDP, which is the statistical measure of total output of an economy and, therefore, of the income which it generates, is commonly used as an indicator of economic welfare. In recent years, however, there has been growing interest in the development of alternative indicators that measure the quality of life in a broader sense than simply the amount of goods and services which are produced and the income associated with this. Specifically, the aim has been to incorporate such elements as life expectancy, the quality of the environment and levels of literacy which determine the well-being of society as much as real income. The concern has also been to take account of the depletion of exhaustible resources, such as fossil fuels or various ores, and the pollution of the environment caused by existing methods of production and patterns of consumption, the true costs of which are not reflected in the way that GDP is measured. In particular, the valuation of output is currently based on market prices which tend to understate, or to exclude altogether, the costs of replenishing the resources consumed in the production process (such as the Amazonian rainforests), or of developing alternatives if the resources cannot be replaced, and of cleaning up the environment in the event of pollution.

This concern is closely related to the notion of sustainable development, which can be defined as the pursuit of a growth path which meets the needs and aspirations of the present generation without compromising those of future ones. The concept of green accounting has been developed as a means of identifying such a development path by explicitly allowing for the costs of resource depletion, pollution and other externalities not reflected in market prices and of incorporating these into an extended system of national accounts. This, however, raises a number of measurement problems, since it involves the assignment of monetary values to essentially intangible elements, such as environmental degradation or the use of resources which cannot be replaced, except perhaps in the very long-term. The fact that there is no fully objective way of doing this makes it difficult to get general agreement about the values to be assigned and even about the precise approach to be adopted to calculate them. Accordingly, the adoption of a system of 'green' national accounts by the EU and other countries is still some way off. Nevertheless, work is proceeding towards this ultimate objective, which is an essential corollary of shifting from the pursuit of growth *per se* as a

major objective of policy to that of sustainable development.

In line with the undertakings given at the Rio Earth Summit (Agenda 21) to develop green accounting and sustainability indicators, the Commission has adopted a multi-dimensional indicator approach (*satellite accounts*), under which indicators and accounts measuring environmental, resource or energy effects are produced alongside the conventional national income accounts. This involves measuring environmental expenditure, establishing natural resource accounts, examining economic instruments to help protect the environment and improving techniques of assessing damage and assigning monetary values to this. The aim is to derive indicators of sustainability from such accounts.

The Commission has chosen a two-step approach to constructing satellite accounts of this kind. In line with the themes identified in the *5th Action Programme on the Environment*, a set of 50–100 physical indicators in 10 policy areas will be established which will provide a relatively complete description of the pressures on the environment from human activities. The number of indicators selected is a compromise between the precision of measurement, which would require an even larger number, and the manageability of the system, which is facilitated if the number is smaller. The relevant indicators and the weights attached to them to construct a set of indices will be chosen on the basis of recommendations by a scientific advisory group.

These indices will be incorporated into a *European system of integrated economic and environmental indices* (ESI), modelled after the existing Dutch NAMEA system, aimed at measuring the contribution of the various economic sectors to the different kinds of pressure on the environment.

Two pilot programmes will address the key issue of assigning monetary values to environmental damage. The EXTERNE programme is concerned with measuring the externalities involved in the use of energy and attempts to quantify the impact on health and ecosystems of emissions from various kinds of fuel and production processes, in terms of the willingness to pay for their avoidance. The second programme is concerned with environmental and climate changes, examining indicators of the cost of damage and avoidance and ways of putting monetary values on such aspects as the loss of life and bio-diversity.

Environmental considerations are a key aspect of regional policy, which needs to ensure that the development path pursued is sustainable. In line with OECD recommendations, the plans formulated and the programmes implemented should be subject to environmental assessment, indicators of sustainable development need to be established at regional level and data on natural resources collected for each region.

Lack of data at regional level is a major problem in this regard. Moreover, there is often a mismatch between the areas affected by environmental problems and the administrative areas which form the basis of the NUTS classification and data collection. Aggregation, or disaggregation, to the appropriate level cannot, therefore, always be performed. To improve the situation, data would have to be collected for smaller areas, such as NUTS-3 regions, and then aggregated, where necessary, to the areas appropriate for environmental assessment. In Germany, for example, a number of local studies have been undertaken to measure water quality, land use and other aspects, and similar studies would need to be carried out right across the Union in order to establish a regional system of green accounts.

- [1] For an overview and analysis of long-term growth trends, see for example N. Crafts and G. Toniolo, *Economic growth in Europe since 1945*.
- [2] Except where otherwise stated, 'regions' refers to the 206 NUTS-2 regions. For further information, see the Annex on methodology.
- [3] The OECD uses a definition for rural areas of 150 inhabitants per square km or less. This leads to broadly similar results, eg around 25% of the EU population live in regions fitting this description.
- [4] ie the average of imports and exports. The two are in practice similar since the EU was roughly in trade balance with the rest of the world over the period concerned.
- [5] Cambridge Econometrics (1998), *European regional prospects*.
- [6] DGXVI calculations, based on 1996 Gross State Product data from the US Bureau of Economic Analysis.
- [7] Harvey Armstrong (1995), *Trends and disparities in Regional GDP per capita in the European Union, United States and Australia*, unpublished study carried out for DGXVI.

## 1.2 Unemployment and the labour market

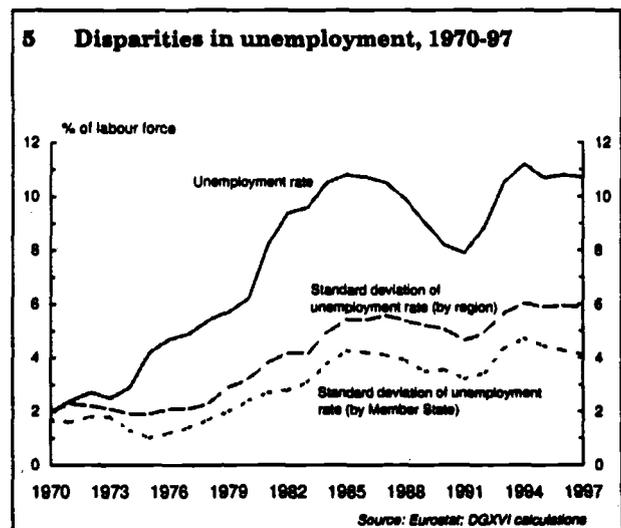
The main economic problem facing the EU remains the persistence of high unemployment. This is a long-standing problem. Between 1973 and 1985, unemployment in the 15 Member States taken together increased every year, from an average of only 2% to over 10½%<sup>1</sup> (Graph 5). Economic recovery in the second half of the 1980s temporarily reversed the trend but failed to reduce the rate to below 7½%. The level of unemployment in 1985 was higher than at any time since the great depression of the 1930s, but worse was to come, as the recession of the early 1990s pushed up unemployment to 11.2% in 1994. Some 18½ million people were affected, around 1 in 9 of the work force. Recovery since then has reduced unemployment to just under 10% in late 1998, but this still represents some 16½ million people without work. Unemployment does not only affect the individuals concerned: it also means loss of potential production and income for the Union as a whole.

There are several noteworthy features of labour market developments in the Union:

- unemployment has risen rapidly during cyclical downturns in the economy but has fallen slowly during upturns, reflecting a failure to sustain employment growth for long enough during recovery periods. The result has been a 'ratcheting-up' of unemployment levels, the peak rate in 1994 being higher than in 1985, the low point in 1991 being higher than in 1980 (at the end of the upturn in the late 1970s). This compares unfavourably with the US, where falls during upturns have compensated for rises during downturns;
- the rise in unemployment has occurred in a context of *increasing* employment. Over the period 1987 to 1997, employment in the EU increased by 5 million, but this was not enough to keep pace

with 7½ million new entrants into the labour market;

- the increase in unemployment has been accompanied by widening disparities between regions. The less favoured regions have been hit disproportionately by the rise. Whereas unemployment in the 25 least-affected regions in the EU averages only 3–4%, only slightly higher than in the early 1970s, in the 25 most-affected regions, it now stands at between 20% and 35%, substantially higher than 25 years ago;
- high rates of unemployment have been associated, both over time and between regions, with high levels of long-term unemployment and a marginalisation — or social exclusion — of the unemployed (Graph 6). In 1997, just under half (49%) of the unemployed in the EU had been out of work for one year or more, representing 5.2% of the work force (in contrast to under 1% in the US);



- interregional differences in employment opportunities are concentrated, in particular, on women and young people. Employment rates of women are over 60% in the 25 regions with the lowest overall rate of unemployment, but less than half this rate in the 25 regions with the highest unemployment (Graph 7). Youth unemployment in the latter regions averages 47%, more than double the rate for those of 25 and over (20%).

## Labour market dynamics

Unemployment arises from a mismatch between labour demand and labour supply (exacerbated in some cases by the way that wages are set). In particular, marked regional variations in the demand for labour mean that, while in some regions demand matches labour supply and keeps pace with changes in it, in others it falls far short. Among the unemployed, however, there is a subset whose skills are inadequate or are no longer demanded and who, therefore, face marginalisation and exclusion from the labour market. These form what is called structural unemployment.

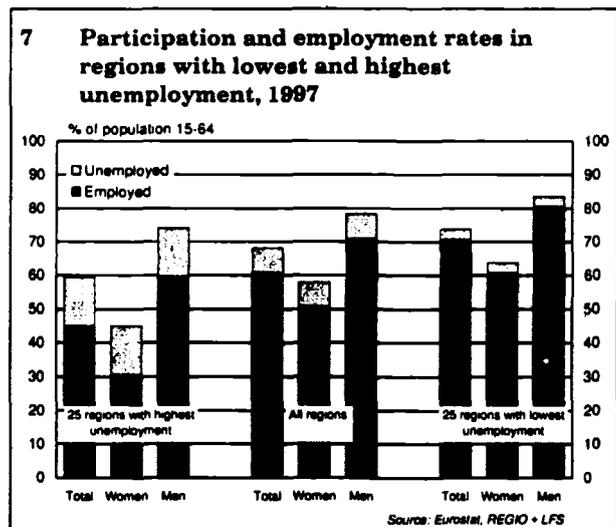
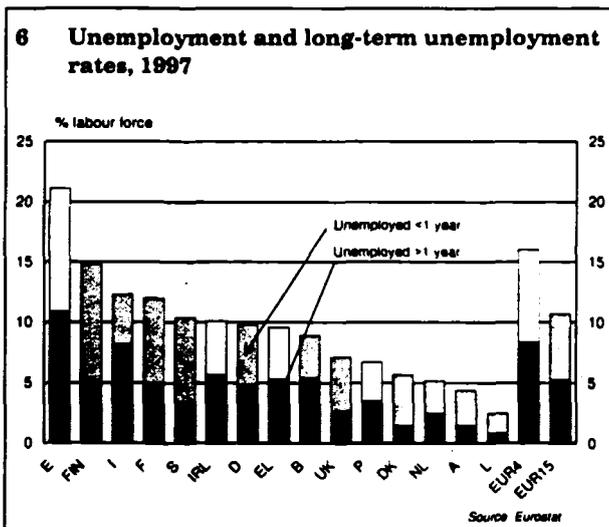
The demand for labour in any region depends on the strength of its economic base and on the job content of growth. Employment represents a simple measure of labour demand. In the EU as a whole, this increased by 5 million over the 10 years 1987 to 1997. There is a clear link between net job creation and economic growth (Graph 8): employment increased by 7½ million between 1987 and 1991, but fell by almost

5 million from 1991 to 1994. Although it has risen since then — by almost 2½ million between 1994 and 1997 — the average increase over the 10 years as a whole was under 0.5% a year.

While employment has increased, the rise has not been enough to keep pace with the growth in population of working age and the growing proportion of those who want to work.

The rise in labour supply, however, is not the cause of high unemployment in any meaningful sense. Indeed, causality can run in the opposite direction, with high unemployment discouraging the participation of women and young people in the labour market and so driving down the supply of labour. The Nordic countries, Portugal and the UK have the highest rates of participation, or activity, in the EU, at 70–80% of working-age population. Yet in Denmark, Portugal and the UK, unemployment is among the lowest in the EU, with rates of 5–7%. Moreover, both Sweden and Finland had exceptionally low rates of unemployment, 2–4%, before the recent crisis. This is in line with the experience in the US, where unemployment is only around 5% and the rate of participation is almost 80%. Moreover, working-age population, as well as participation, has risen by substantially more in the US than in the EU over the past 10 years.

Low activity rates can be seen as an indicator of an unused pool of labour, particularly in the case of women. Indeed, one of the most striking features of labour markets in the EU is the low rate of activity in many regions, especially in those where unemployment is high. In regions in Spain, Southern Italy and

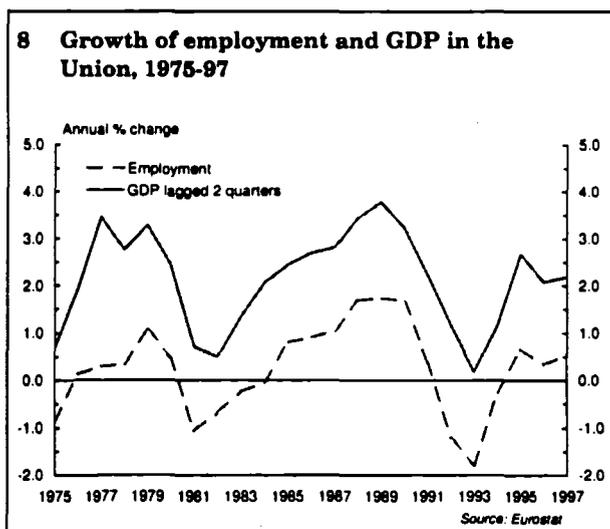


Greece, activity rates of women are little more than 40% of working-age population.

As noted above, a significant part of unemployment is due, not just to insufficient labour demand compared to labour supply, but also to a structural mismatch between the two. A simple definition of what is called 'structural unemployment' is that excess supply in one section of the labour market can coexist with excess demand in another. Workers can be unemployed at the same time as there are unfilled vacancies, simply because they do not possess the skills, or are in some way unsuitable, for the jobs on offer. The result is that some people have only limited access to the labour market and are unlikely to find work even if there were an increase in the demand for labour.

The level of taxes and social charges levied on labour is a potential contributor to this mismatch, especially as regards the employment of low-paid and low-skilled workers. High charges can represent an important deterrent to the creation of such jobs, while providing at the same time a possible incentive to employers and employees alike to avoid payment by arranging for the work to be done in the informal, or black economy, rather than the formal one.

Another cause of structural unemployment is lack of skills. The low-skilled, in general, are much more likely to be unemployed than those with higher skills, unemployment of those aged 25 to 59 with only basic schooling averaging 12½% across the Union in 1997 as against just under 6% for those with university-level education. In addition, skills can become obsolete because of a change in the pattern of demand or in the



### Definitions of labour market concepts

A number of summary statistics, such as 'participation rates' or 'employment rates', are used to describe different features of the labour market. However, it is not always obvious exactly what these concepts mean and what the relationship is between them. The conventions used in this report are set out below.

There are around 248 million people aged 15-64 in the EU and 246 million of these are included in the Union Labour Force Survey, which is household based and, therefore, excludes those living in communal households, such as those in the armed forces. In 1997, these were divided broadly as follows:

- 124 million people in full-time employment (including 22 million self-employed);
- 25 million people in part-time employment;
- 18 million unemployed, in the sense of actively seeking work and being available to work (of which 9 million for more than one year);
- 79 million economically inactive (of which nearly 11 million would like a job, but are not actively looking or are not immediately available).

Apart from some rounding errors, other relevant concepts are defined and calculated as follows:

- the economically active or the labour force is the sum of those employed and those unemployed, ie  $124+25+18=167$  million people. The activity or participation rate is this figure relative to the total population aged 15-64, ie  $167/246=68\%$ ;
- the employment rate is the sum of those working part-time as well as full-time relative again to total population aged 15-64, ie  $(124+25)/246=60.5\%$ ;
- the unemployment rate is the total number unemployed relative to the total number of those economically active, ie  $18/(124+25+18)=11\%$ ;
- long-term unemployment can be expressed in two ways: the number of people out of work for a year or more as a proportion of the total number unemployed, ie  $9/18=49\%$ , or the number of long-term unemployed relative to the total labour force, ie  $9/(124+25+18)=5\%$ , which is the long-term unemployment rate.

processes of production. As economic development occurs, one kind of job disappears and another kind of job, needing different skills, takes its place.

Skills, moreover, do not only consist of formal educational qualifications but also of aptitude and the ability to work effectively in the working environment. Those out of work for long periods — such as the long-term unemployed and women returning to the labour market after caring for children — often lose these skills and need time in work to reacquire them, which can make employers reluctant to recruit such people.

There are various ways of estimating the extent to which unemployment is structural, in the sense that it is likely to be unaffected by an increase in labour demand, or, at least, that it will take some time for it to be affected. A simple estimate is provided by long-term unemployment. This serves as an approximate indicator of those who have limited access to the job market, including those whose skills are declining due to lack of contact with the world of work. This implies that structural unemployment is about half of total unemployment in the EU, which is similar to estimates produced by econometric analysis.<sup>2</sup>

It also implies that structural unemployment tends to be proportionately higher in high unemployment regions: in the 10 regions with the highest rates of unemployment, the long-term unemployed account for 56% of the total, while in the 10 with the lowest rate, the figure is only 34%.

The non-structural part of unemployment could be relatively quickly reduced by higher growth of output and increased investment or by an increase in the employment-content of growth. Structural unemployment, however, tends to be more persistent. In this case, macroeconomic policies to expand output and employment may need to be combined with measures to increase skills and improve access to jobs, equalising opportunities for those marginalised in the labour market.

## The regional pattern of unemployment

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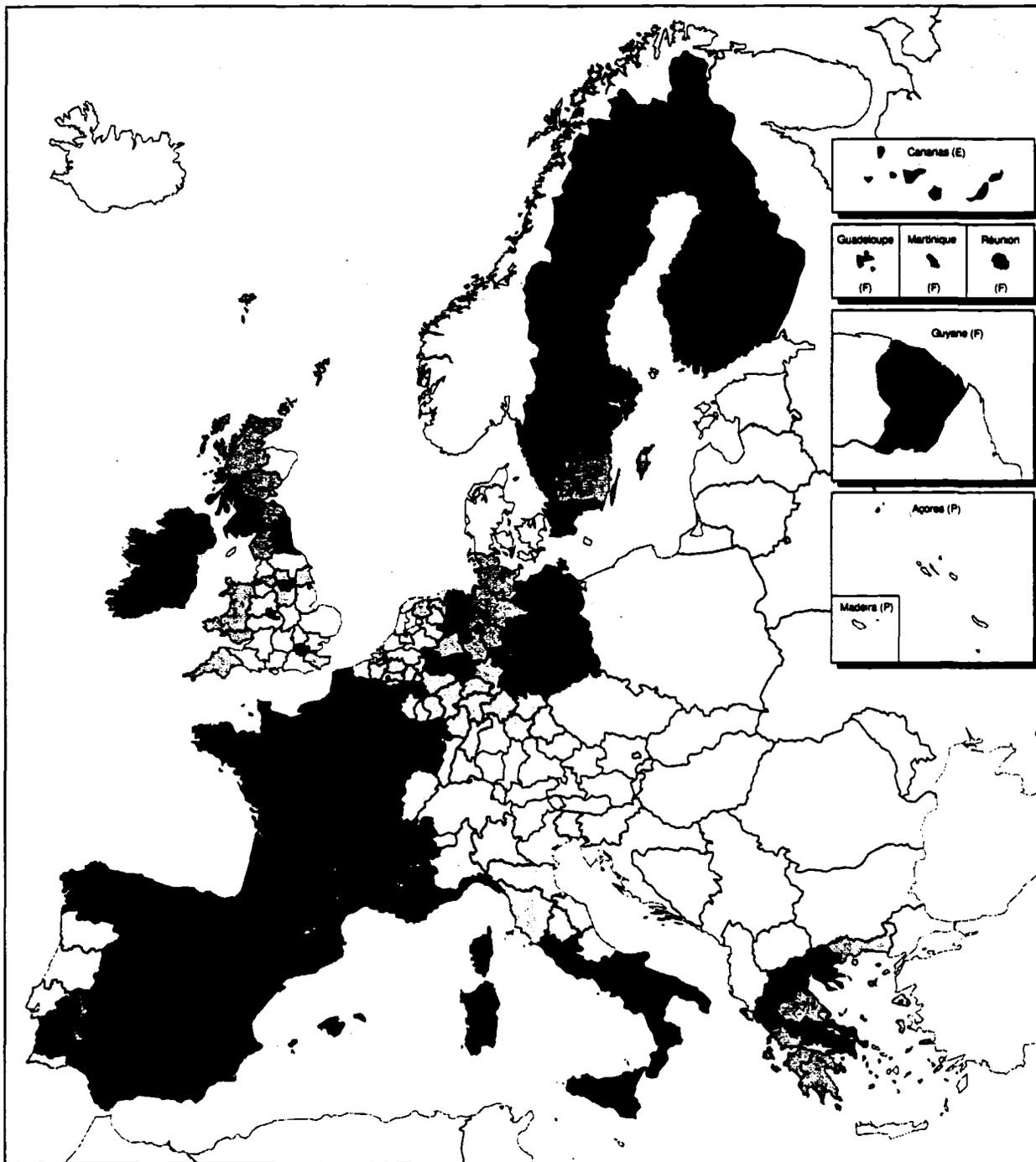
Unemployment rates differ strikingly between regions (Map 5). In parts of the South, ie Spain, Southern Italy and in the Mediterranean regions of France, unem-

ployment rates of 20–30% are prevalent, higher than anywhere else in the Union, along with French DOMs. These high rates, however, are not linked uniformly with low levels of regional output. The two Member States where GDP is lowest, Greece and Portugal, have relatively low rates of unemployment (though there are signs that this may be changing in Greece) (Table 16). There are also some unemployment blackspots in Northern Europe in regions undergoing economic restructuring, in particular, in Finland, Eastern Germany and the North-Eastern part of France, where rates are typically 15–20%. Moreover, in some urban blackspots, rates are even higher than this, despite low unemployment in the region as a whole.

Despite the fact that the overall unemployment rate in the EU in 1997 was very similar to that in 1987, the experience in different parts varied widely (Map 6). In Sweden, Finland and Southern Italy, there was a dramatic increase in unemployment. In the UK, the Netherlands and Ireland, on the other hand, unemployment fell by 4–5 percentage points in many regions. Unemployment declined in much of Belgium and in some Northern and North-Eastern parts of Spain, although in the latter case this was more than balanced by a rise in unemployment elsewhere in the country. Worryingly, the central and North-Western regions of Spain, which already had some of the highest rates in the Union, recorded significant increases, although in the South, there was little further rise in the very high rates which had already been attained. It should also be noted that, in Greece, restructuring has started to cause unemployment to rise.

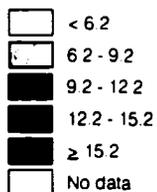
The proportion of the unemployed who have been out of work for a year or more gives an approximate guide to the extent of structural unemployment (Map 7). The highest figures are in the South of Italy, where typically two-thirds or more of total unemployment is long-term, rising to 80% in Campania. Figures of 60–70% are also common in the centre and East of Greece, the North-West coast of Spain and regions undergoing restructuring in Belgium and the Netherlands. On the other hand, in most regions in the UK and Sweden, the proportion is only 30–40% and in many parts of Denmark, Finland and Austria, it is even lower, at 20–30%.

In addition, young people under 25 are nearly 2½ times more likely to be unemployed than older workers (Map 8). Except in Germany — where, in part due to the apprenticeship system, the rate for young people is similar to the overall rate — youth unemploy-



**Map 5 Unemployment rates by region, 1997**

% of labour force

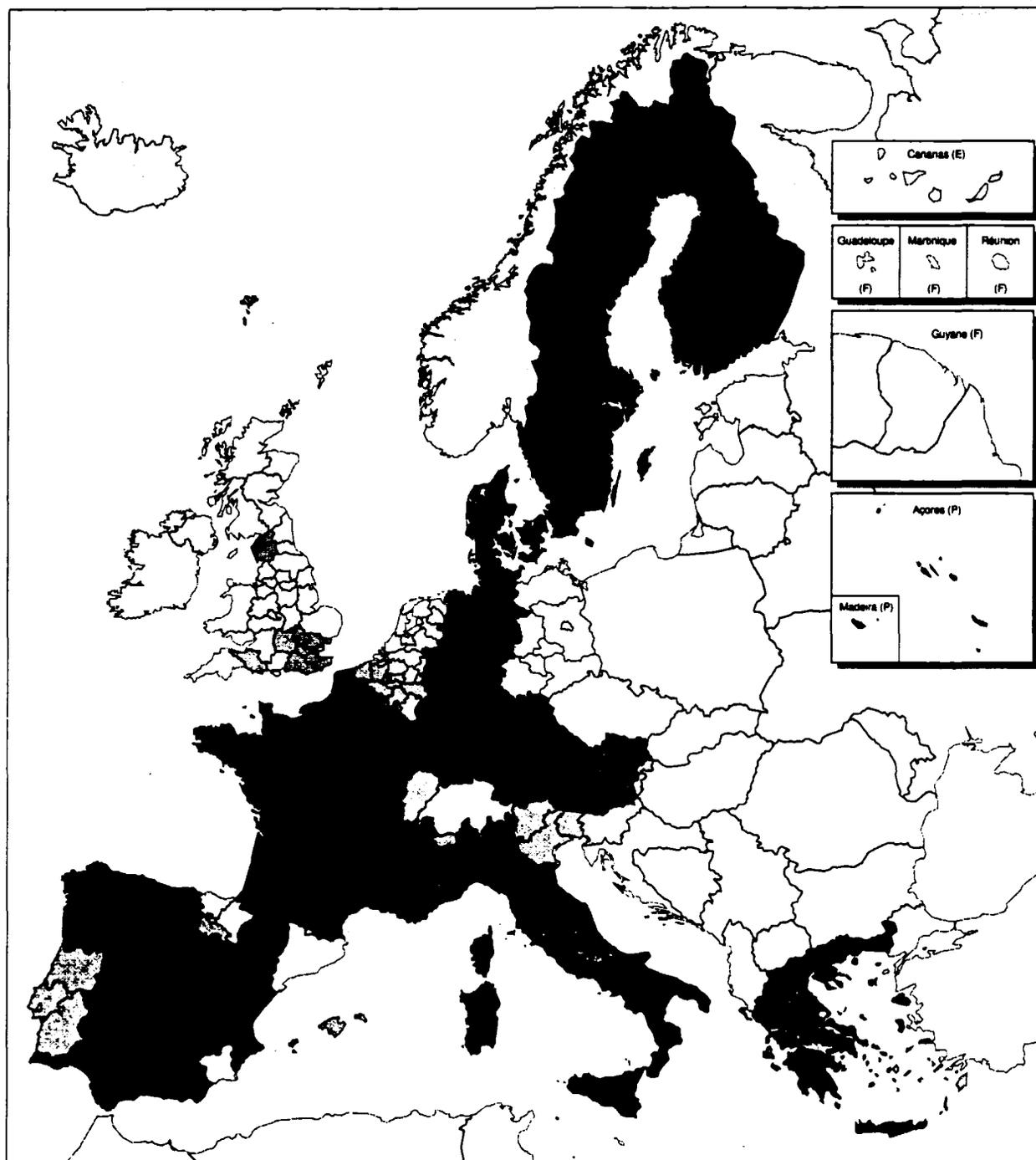


EUR15 = 10.7  
Standard deviation = 6.02

F(DOM): 1996

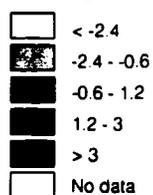
Source: Eurostat

0 100 500 km



**Map 6 Change in unemployment rates by region, 1987-97**

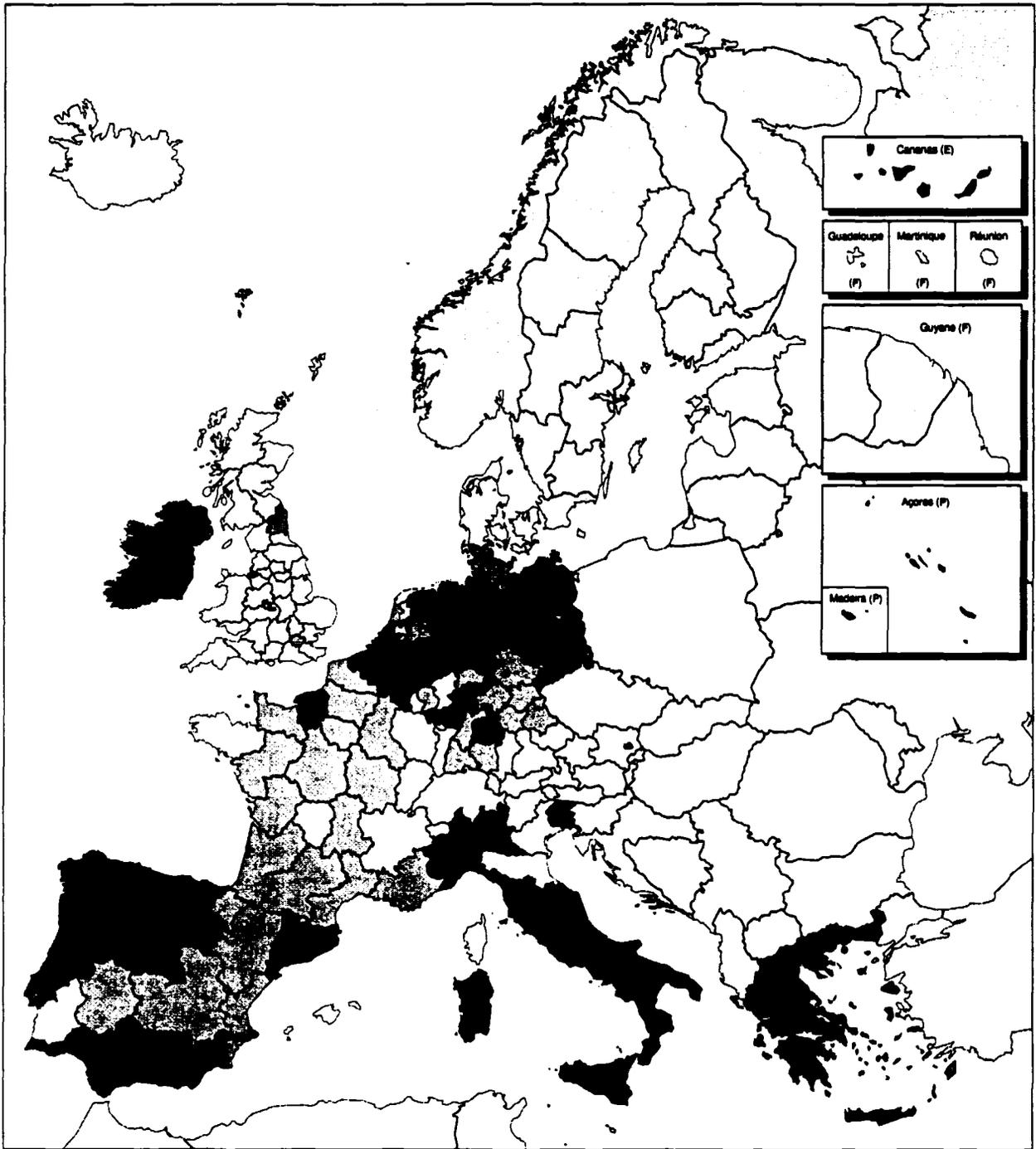
Percentage point change



EUR15 = 0.3  
 Standard deviation = 3.59  
 A, FIN, S: estimates

Source: Eurostat

0 100 500 km



**Map 7 Long-term unemployment, 1997**

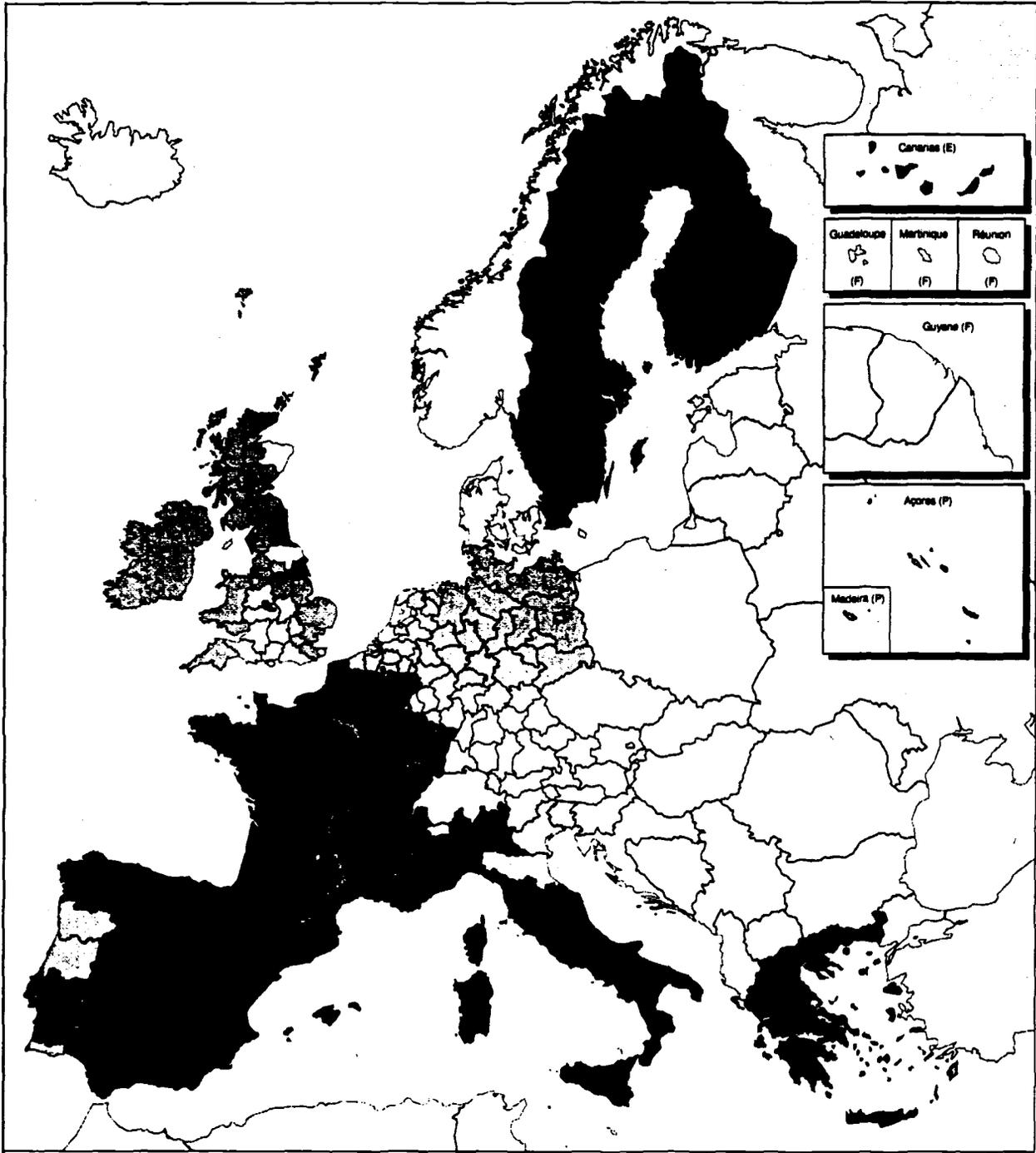
% of total unemployed



EUR15 = 49.0  
Standard deviation = 12.2

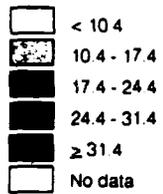
Source: Eurostat





**Map 8 Youth unemployment rates, 1997**

% of labour force, 15-24



EUR15 = 20.9

Standard deviation = 13.91

Source Eurostat

0 100 500 km

ment is significantly higher than the average across all countries and regions. The problem is particularly serious in regions where the average itself is high. In Spain, youth unemployment averages 40% and rises to 50–60% in regions with high overall unemployment, and in Finland and Northern Sweden, it is also high in areas where the overall rate is high.

The problem, however, can be equally serious in regions with lower unemployment. In the South of Italy, youth unemployment is, at 50–60%, as high as in the worst affected parts of Spain. Unlike in Spain, however, this represents four times the overall rate, reflecting the particular difficulty of finding a first job in the Mezzogiorno. This is also the case in Greece, while in Belgium and France, where youth unemployment is around 25%, much higher than the overall rate, it is concentrated on a relatively small number of young people, many of whom join the labour force with inadequate qualifications.

Comparisons of regions at opposite extremes serve to emphasise the scale of the disparities (Table 13). In the 10 worst affected regions, average unemployment was 28.1% in 1997 or nearly 8 times higher than in the 10 least affected regions, where the average was just 3.6%. While unemployment in the EU in 1997 was only slightly higher than in 1987, in the 10 worst affected regions it was up by more than 4 percentage points.

The composition of the 10 worst affected regions has changed more than for GDP per head. In 1987, they were entirely composed of regions in Spain, Ceuta y Melilla, Andalucía and Extremadura being notable examples. While these were still in the top ten in 1997, they were joined by the French overseas territories (DOMs), most notably Réunion, and regions in the South of Italy.

The structural element of unemployment is particularly evident in these 10 regions, the number unemployed for a year or more amounting to 56% of the total as against 34% in the ten least affected regions. The former figure represents nearly 16% of the labour force in the 10 worst affected regions, significantly higher than the overall unemployment rate in most regions of the EU.

In addition, while unemployment rates for women in the 10 least affected regions were similar to rates for men, in the 10 worst affected regions, they were significantly higher — 37% as against 28% (Tables 14

and 15). The figures for young people in the latter are also extreme; with average unemployment as high as 56% as against 23% for those of 25 and over, implying that under 45% of the young people in the labour market succeed in finding jobs in these regions.

Broadening the analysis, in the 25 worst affected regions, unemployment averaged 23.7% in 1997, more than five times the average of 4.2% in the 25 least affected regions. As for the 10 regions with the highest unemployment, the rate in the former increased by nearly 4 percentage points between 1987 and 1997, while that in the latter remained virtually unchanged. Moreover, the structural element in unemployment remains significant as does the disproportionate effect on women and young people.

While the same Spanish regions account for a large number of the 25 worst affected regions in both 1987 and 1997, the other regions included changed almost completely. The 6 regions in the UK undergoing restructuring which were included in 1987 experienced a marked fall in unemployment and were replaced by the French overseas territories (DOMs) (which were not covered in 1987), a number of regions in the South of Italy and regions undergoing restructuring in Finland and the Eastern part of Germany, as well as Corsica.

A striking feature to emerge is that while in some regions unemployment has changed relatively little since the early 1970s, in others it has doubled or even trebled. The tendency for disparities in unemployment to widen over time is confirmed by summary measures of dispersion, in particular by the standard deviation (weighted for population). This shows that the long-term trend towards a widening of disparities was halted temporarily during the years of high employment growth in the late 1980s, but continued from 1992 onwards (Graph 5).

While there is a fair amount of similarity in the relative level of unemployment across regions in 1987 and 1997, in the sense that the ordering of regions in terms of unemployment was not dramatically different, there was, nevertheless, a far greater movement up and down the order than in the case of GDP per head (the Spearman's rank correlation coefficient was 0.58 as opposed to 0.91).

The disparity in unemployment between regions across the Union is paralleled by a similarly wide differ-

ence in most Member States (Graph 9). Moreover, as at the EU level, the difference has widened over time (Table 13). Regional differences are greatest in France (if the DOMs are included), Italy and Spain. In 1997, unemployment in the worst-affected region in France (Réunion) was nearly 37%, while in the least-affected (Alsace), it was 29 percentage points lower. In Italy, the gap between Campania in the South and Trentino-Alto Adige in the North was over 22 percentage points. In Spain, the rate in Andalucia was over 32% (the highest in mainland Western Europe) and, at the other extreme, in Navarra (the only region in Spain with unemployment below the EU average), it was around 10%.

On the other hand, unemployment in all the regions in the Netherlands, Austria and Portugal is below the EU average, as it is in Denmark, Ireland and Luxembourg, where there are no regional data because of the size of the country. Similarly, in the UK, only Merseyside has a rate above the EU average, the mirror image of Spain in this respect.

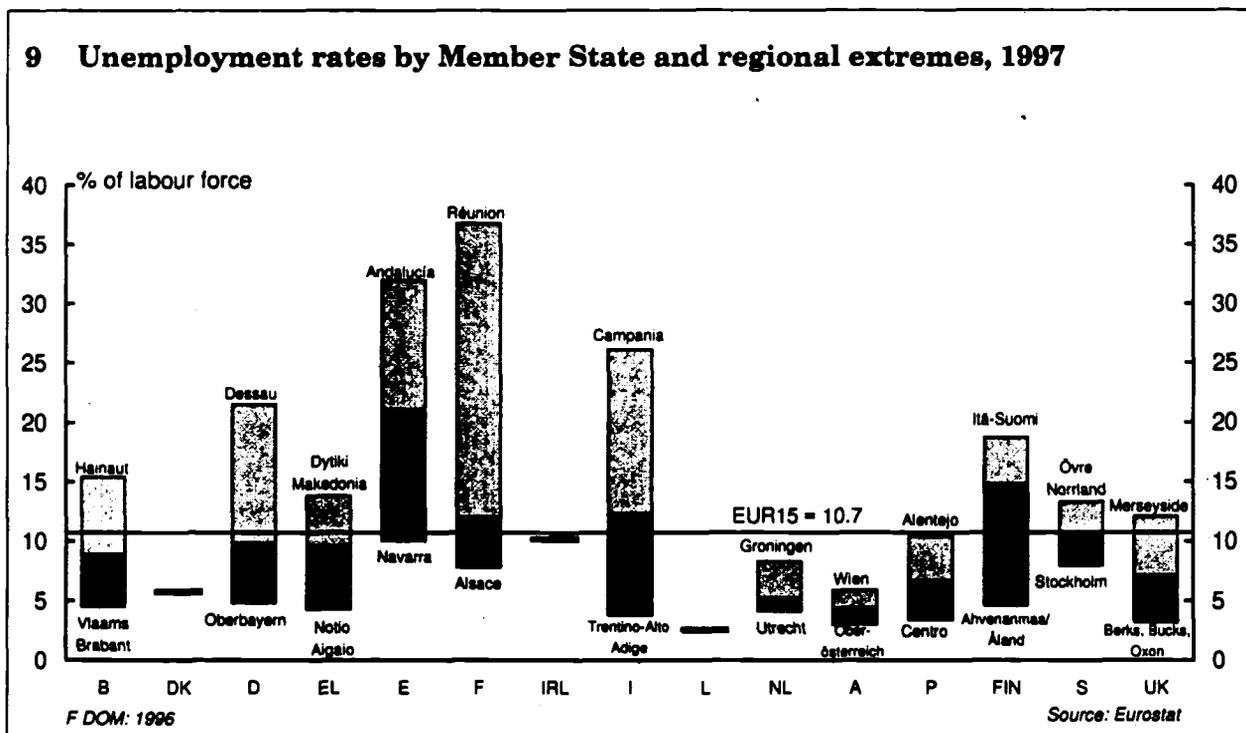
### Urban, rural and sectoral issues

Some interesting patterns emerge in terms of labour market characteristics between urban and rural areas, defined in the same way as in Section 1.1 above

(Table 6). The most significant feature is that, despite their relatively high GDP per head, unemployment in urban areas is higher on average than elsewhere. This, however, is not uniformly the case. While some areas are undergoing restructuring and/or experience a high level of social exclusion, in others, unemployment is relatively low.

Moreover, unemployment is almost as high in rural areas (averaging 11.3% in 1997) as in urban ones (11.5%), whereas in intermediate areas, it is significantly lower than in both (9.1%). This pattern is reflected in youth, female and long-term unemployment rates, though with slight differences. Unemployment of women is highest in rural areas (13.8%), while long-term unemployment is at its most serious in urban areas (6% of the labour force), suggesting that structural problems are particularly acute in such places.

The problem in particular urban areas is even more serious than the average figures suggest, since it is composed of areas which are among the most prosperous in the Union with very low unemployment and others where one-third to half of the work force are unemployed. Long-term unemployment is a particular problem in these areas, often accounting for a large majority of the unemployed.



In terms of sectors, employment declined in both agriculture and manufacturing between 1987 and 1997 but increased significantly in services, which accordingly accounted for much more than all of the rise of 5 million in the total number employed over the period (see Table 17). This differential pattern of sectoral change is reflected in the experience of regions which have concentrations of employment in the different sectors (Tables 7, 8 and 9).

Expansion was particularly marked in high value-added parts of the service sector (business services, especially), as well as in communal services (health and education). Nevertheless, employment in these services, and in the service sector as a whole, remains substantially below the level in the US (especially when related to working-age population — in the US, employment in services amounted to just over 54% of population aged 15 to 64, whereas in the EU, the figure was only just under 40%).

Despite these trends, unemployment rates in the most service-intensive regions are only slightly below average (9.6% in 1997). While manufacturing has tended to expand most in areas where it is already best represented — ie regional concentration has increased — the highest rates of growth in services seem to have occurred outside the regions where they already account for a high proportion of jobs.

Some 4 million jobs were lost in manufacturing between 1987 and 1997 and while these were concentrated in declining industries, even the more technologically advanced and dynamic sectors, which expanded in terms of output, experienced little if any growth in employment because of the long-term tendency for the capital intensity of production to increase and for fewer people to be employed per unit of output.

Despite this, the top 25 manufacturing regions have the lowest unemployment of any of the sectoral groupings (9.0% in 1997). Except in the three Spanish regions and one East German region included among these, all have unemployment below the EU average, some substantially below. This is even more marked for the top 10 regions, where unemployment averaged only 6.2% in 1997. As in the case of their GDP per head, this in part reflects the fact that the regions with the highest concentration of employment in manufacturing are, almost by definition, the most successful ones. It also reflects the importance of

success in manufacturing as a means of supporting job creation in other sectors, especially business services. Continuing concentration of manufacturing in these regions, many of which are located in Southern Germany and the North of Italy, implies that they are likely to benefit further in the future as other regions, where manufacturing is less important, lose out.

If the experience of the top 25 service and manufacturing regions is compared with the experience of urban areas in terms of unemployment, the low rates shown by regions which are still doing well in manufacturing, despite the substantial job losses in the sector as a whole, suggest that the high rates in other regions are linked to industrial restructuring. This is borne out by the high level of long-term unemployment in most of the areas concerned.

Agriculture has experienced the greatest decline in employment of all sectors. Although in absolute terms the reduction was only slightly less than in manufacturing (just under 4 million jobs lost), in relative terms, it meant that a third of the jobs which existed in 1987 had disappeared by 1997. Perhaps not surprisingly, the 25 regions with the highest concentration of employment in agriculture had an average unemployment rate of 14.7% in 1997, 4 percentage points above the EU average. There is a real risk that their position will deteriorate further given their high dependence on the sector, which accounts for nearly a quarter of all jobs in the areas concerned. In particular, in many of the Greek regions, where unemployment is below average at present, 30–40% of employment is in agriculture, indicating that economic restructuring has a long way to go.

If the experience in these regions is compared with that in rural areas as a whole, where unemployment is just below the EU average, it is evident that such areas include many with very low rates of unemployment. These, however, are those which are not solely dependent on agriculture, such as East Anglia in the UK with unemployment of 5.6% in 1997, which is a centre of high technology and Emilia-Romagna with a rate of 6.7%, where agriculture is concentrated in high value-added sectors and where there are close links with the industrial part of Northern Italy.

Although unemployment is below average in many rural areas, underemployment is common. For example, while part-time working is more prevalent in urban areas, a greater proportion of those working part-

time in rural areas (42%) would prefer a full-time job, representing a form of hidden unemployment.

Other features of the rural labour market are increasing diversification of employment towards activities such as tourism and a high number of self-employed and family workers, many working in small holdings, which, at 18% of the total employed, is double that in urban areas.

In addition, rural areas on average lag behind cities in terms of the skills of the work force. The proportion of the population in urban areas with an above average education level (54%) is higher than in intermediate areas (50%) and much higher than in rural ones (41%). This is reflected in the relative number working in the more skilled occupations, as managers, technicians or professionals, which is 39% of all those employed in urban areas as against only 26% in rural ones. Nevertheless, a number of areas within urban regions have a relatively low-skilled work force and a significant skills gap exists in such areas.

The age structure of the population also seems to work against rural areas. Whereas the number of people aged 65 and over amounts to 22% of those of working age (15 to 64) in urban areas, in rural ones, the figure is 27%, over 1 in 4. This reflects in part the tendency for people to move into rural areas when they retire, or even just before, but it also reflects an exodus of young people to urban areas where job opportunities are greater, so reducing the available work force.

In sum, although urban areas tend to have a stronger economic base than other regions, they also have higher levels of unemployment on average. In rural areas, the problem is as much of job quality and low wages. In both groups, however, there is a significant minority of regions and areas within these with very high rates of unemployment where economic restructuring is underway.

### Employment of women in the regions

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Despite progress in recent years, women are in many respects still at a disadvantage in the European labour market. Although the net additional jobs created over the past 10 years and more have virtually all gone to women, this job growth has failed to keep pace with the increasing number of women who want to work. As a

result, unemployment among women is much higher than for men in most parts of the Union, averaging 12½% as against 9½% in 1997. Despite the fact that women form just over 40% of Europe's labour force, they account for nearly half of the unemployed and slightly over half of the long-term unemployed. Employment rates for women remain significantly lower than for men, at only 50% over the Union as a whole as opposed to 70%. Moreover, many of these work part-time (32½% as against 6% of men).

The greatest challenge to equalising opportunities for women and men in the labour market lies in the need to enable both to reconcile work and family responsibilities in a better way than at present. Although reconciling the two is as difficult for men as it is for women, it remains the case that vastly more women than men are forced to make a choice in favour of their family and have to suspend their working careers. As a result, firms which are willing to be flexible and make themselves more family-friendly, allowing, for example, people to work part-time or flexible hours, are likely to be at an advantage in attracting and retaining women employees. This is perhaps a major reason for the concentration of women in the service sector.

There are other obstacles to be overcome, such as perceptions of women, including women's perceptions of themselves, if women are to be less concentrated in a few traditional activities and in relatively low positions within the company or organisation they work for. There are, however, positive trends:

- the difference between men and women in terms of the opportunity to work diminishes with rising educational levels and for university graduates the difference is relatively small. In 1997, for example, 80% of women graduates aged 25 to 64 were in employment, only slightly less than the figure for men (90%). On the other hand, only 44% of women with only basic schooling were in work as against 76% of men. Moreover, women's educational qualifications are rising faster than for men, those aged 25 to 29 having higher qualifications, on average, than men of the same age;
- the combination of increasing education and changing attitudes means that employment rates of women are converging on those of men — between 1987 and 1997, they rose from 46% of working-age population to 50%, whereas those

for men declined from 74% to 68%. Nevertheless, although the difference is diminishing, it remains large;

- women are concentrated in the growing service sector and are, therefore, less at risk of losing their job than men, who are employed disproportionately in agriculture and manufacturing where restructuring is taking place.

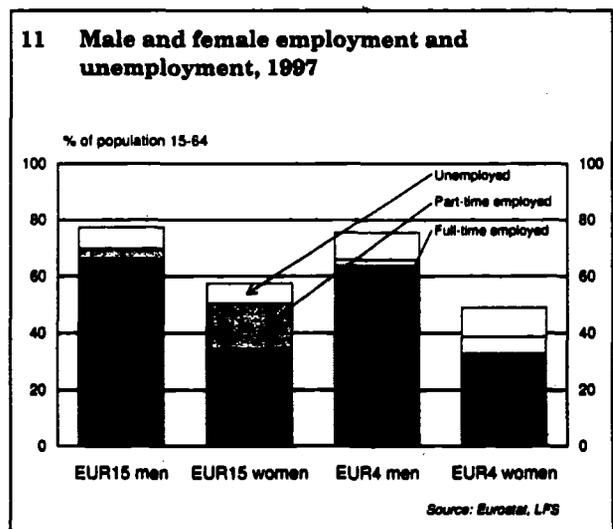
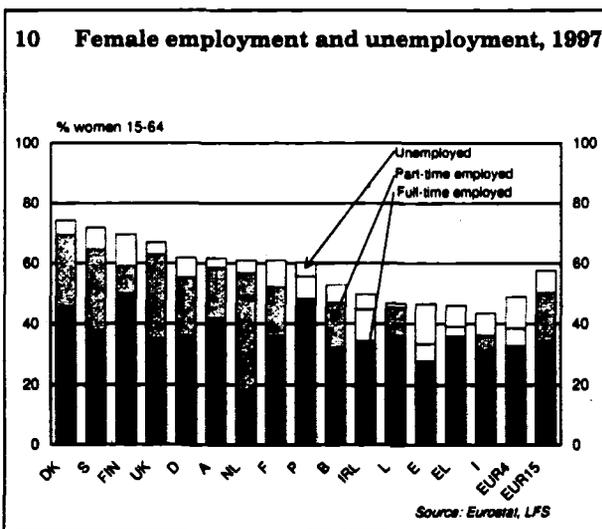
The regional pattern reflects this pattern of change. In some countries and regions, much progress has been made in opening up opportunities for women, while others still have a long way to go. For example, in Denmark, Sweden and Finland, employment and unemployment rates of women are generally much more similar to those of men than elsewhere in the Union (Map 10, Graph 10). This reflects a long tradition of inclusion, gender equality and child-care provision in these countries. The position is similar in the UK, probably reflecting the high proportion of service employment, and unemployment among women is actually less than among men, although employment rates for women with young children are relatively low.

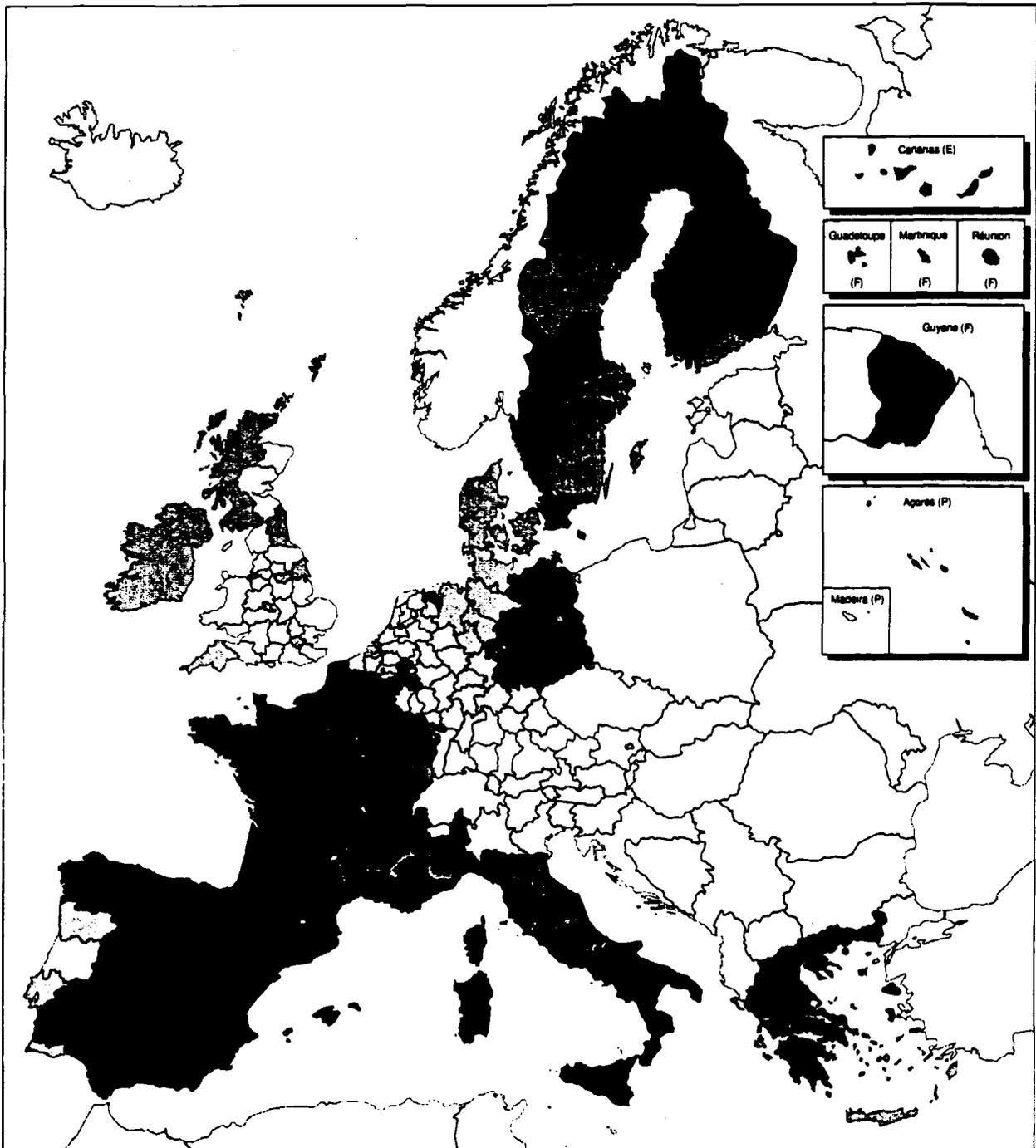
At the other extreme, in the Mediterranean countries of Spain, Italy and Greece, less than half of women participate in the labour market, despite an increasing activity rate, particularly in Spain. Moreover, those who do join the labour market generally experience high unemployment and, as a result, not much more than a third of women of working age in these countries have a job, while the opportunities for part-time work are much less than elsewhere (see, for example, Graph 11).

In lagging regions, in general, women are much more likely to be unemployed than men when they participate in the labour market. In the four Cohesion countries, unemployment among women is double that in the EU as a whole (22% as against 12½%). Women, therefore, tend to suffer disproportionately from increasing unemployment (Map 9). In 1997, rates for women were particularly high in Spain (ranging from 15% in Navarra to 42% in Andalusia), Southern Italy (34% in Calabria and Campania) and Eastern Germany (20–25%) as well as parts of Greece and Finland, and these regions showed the greatest increases over the period 1987 to 1997.

Much of the difference in employment rates of women between regions is attributable to part-time working, which is considerably more important in the higher employment areas. The number of women with full-time jobs in lagging regions, therefore, is not so much lower than in the rest of the EU relative to people of working age. The average rate in Spain and Italy is around 30%, only slightly lower than the EU average, and not so far behind the rate in the Nordic countries of 40–50%.

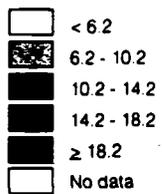
Only around 1 in 20 women of working-age, however, has a part-time job in Spain and Italy and only 1 in 30 in Greece, as opposed to around 1 in 6 in the EU as a whole and over 1 in 4 in Sweden and the UK. The opportunity for women to work part-time is, therefore, substantially smaller in regions in the former three countries, as well as in Portugal, than in most Northern parts of the Union (Map 11). Moreover, in the regions with the highest rates, part-time employment is not exclusive to women and a relatively high propor-





**Map 9 Female unemployment rates, 1997**

% of female labour force

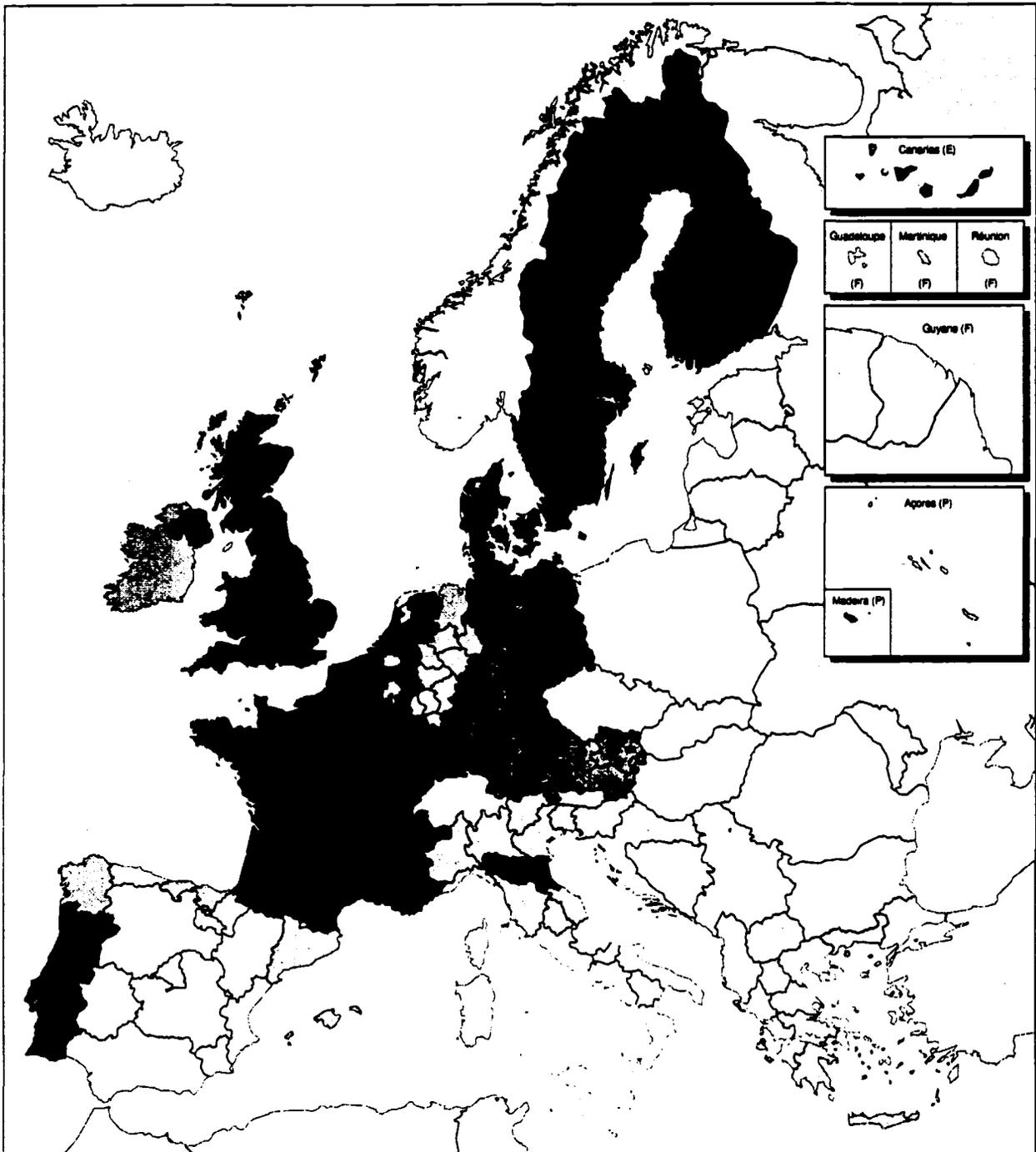


EUR15 = 12.2

Standard deviation = 8.1

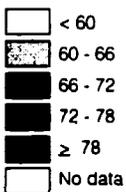
Source Eurostat

0 100 500 km



**Map 10 Female activity rates compared to male activity rates, 1997**

Female rate as % of male rate



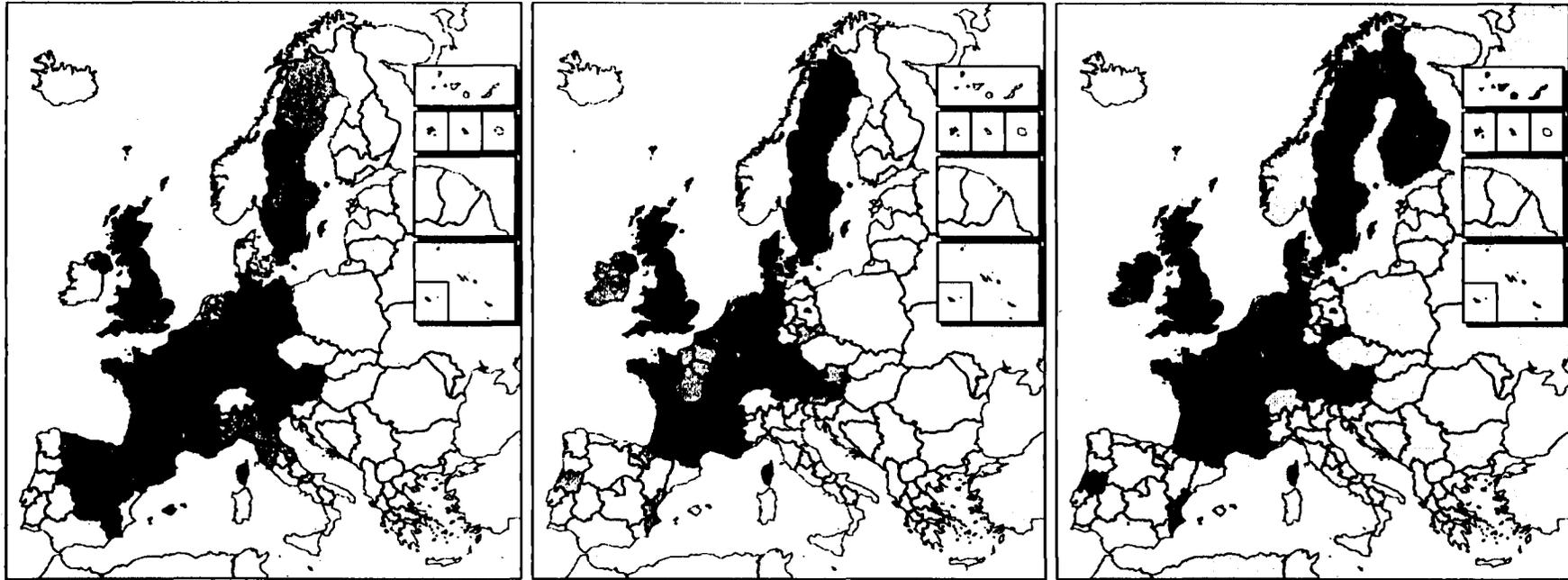
EUR15 = 69.2

Activity rate is employed plus unemployed relative to population 15-64

Source: Eurostat

0 100 500 km

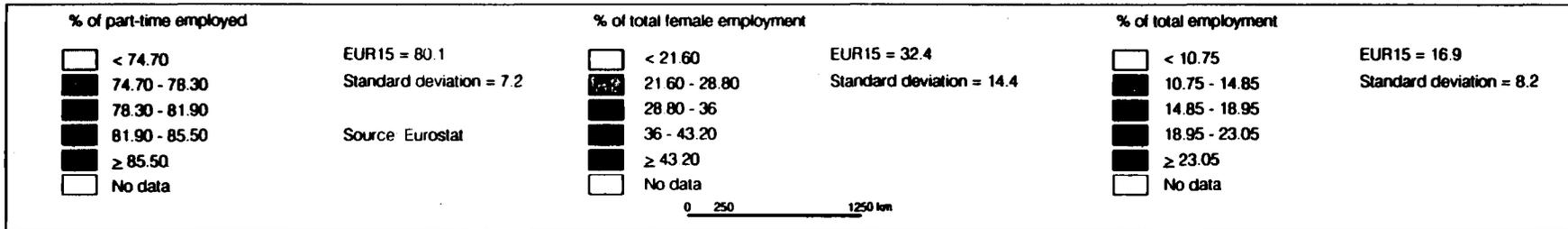
Map 11 Part-time employment, 1997



Women as % of total part-time employed

Female part-time employment

Total part-time employment



tion of men also work part-time (10% or more of men in employment in some cases).

The chance of working part-time makes an important contribution to the ability of women to pursue working careers. Although it is sometimes portrayed as a 'second-class' form of employment, the Labour Force Survey found that over 80% of women employed in part-time jobs in 1997 worked in them by choice and did not want to work full-time.

## The situation in the worst affected regions

Unemployment in Spain is the highest in the Union, affecting nearly 1 in 5 of the labour force — almost 3½ million people — in 1997. There are huge disparities across the country, the rate in the Northern regions of Navarra, La Rioja and Aragón, ranging between 10% and 15%, comparable to many regions elsewhere in the EU, while in the Southern regions of Andalucia and Extremadura, it was around 30%. In addition, low activity rates among women (around 40%) suggest significant hidden unemployment and a large underused pool of labour.

Changes in unemployment in Spain, as elsewhere, have generally mirrored economic performance, with marked reductions in the second half of the 1980s (when employment grew by 3½% a year) and large rises in the early 1990s (when employment fell by 1% a year). Recent recovery has again served to reduce rates, though this has tended to favour regions with unemployment below the national average. Over the period 1987 to 1997, rates fell from 15.1% to 10% in Navarra and from 23.2% to 18.8% in Pais Vasco, while they actually increased in Andalucia (from 31.1% to 32.0%) and Extremadura (from 25.9% to 29.5%).

Part of the reason for this lies in extensive restructuring as modernisation of the economy takes place. Levels of productivity have converged towards the EU average, but the new industrial base still needs to be broadened. However, although long-term unemployment rates are high, the proportion of the jobless who are long-term unemployed (just over half) is only slightly above the EU average. Moreover, unemployment has come down rapidly since the present recovery began and the employment-content of growth has

increased markedly, suggesting that it is one country in which unemployment might be reduced substantially by economic growth alone.

Regional unemployment in Portugal contrasts with that in Spain. Despite similar geographical and historical circumstances, unemployment performance in the two countries has been very different since the beginning of the 1980s. While rates in Spain have generally risen over this period, in Portugal, they have remained relatively low, fluctuating between 4% and 8%. Recent restructuring of the textile industry has been absorbed comparatively well given the scale of job losses, and even in Alentejo, the worst-affected region, unemployment was only 10% in 1997.

Explanations for Portugal's performance relative to Spain's include a higher and better balance of employment — activity rates of women are high and unemployment low, so there is little slack to be taken up — and less rigidity of wages and contracts of employment. In addition, high levels of support from the Structural Funds have smoothed the necessary modernisation of the structure of production. On the other hand, a large proportion of employment in agriculture and evidence of underemployment suggest that Portugal has still to face significant restructuring in the future. Part of the difference relative to Spain may, therefore, simply reflect the fact that economic restructuring is less advanced. Although Portugal starts from a relatively good position, continued advancement is likely to depend on the labour market remaining flexible and ongoing Community support for restructuring.

Unemployment in Greece is low but gradually increasing and, as in Portugal, there are features which give cause for concern. Restructuring is continuing in agriculture and in many industrial sectors as well as in the public sector, traditionally a large employer, but still has some way to go. The industrial base, however, is weaker than in Portugal. On the one hand, economic growth is lower. On the other, there is a large reserve of unused labour, with activity rates, particularly among women, being among the lowest in the EU.

The lack of jobs for women is reflected in the fact that the unemployment rate of women is more than double that of men, while youth unemployment, more than 4 times that for those of 25 and over, reflects an inadequate rate of new job creation. Unemployment rose

from 7.4% to 9.6% between 1987 and 1997 and in the poorer, largely mountainous and rural interior, which is most vulnerable to shocks, it increased by more (by around 8 percentage points to 14% in Dytiki Makedonia).

In Ireland, the decline of employment in agriculture has been more than offset by growth in other sectors; Ireland is one of the few countries in the Western world where manufacturing employment is still expanding. Although in the past economic growth failed to translate into increased employment, there is clear evidence of change in more recent years, partly as a result of macroeconomic stabilisation — helped from 1987 onwards by a series of national wage agreements. Employment has expanded markedly since 1991 (by over 3% a year), which is important, as participation among women, which has historically been very low, is increasing rapidly (the labour force grew by almost 2½% a year between 1991 and 1997).

There is some concern, however, about the structural element in unemployment, since employment growth has been concentrated largely in the East and the long-term unemployed, though declining, still amount to 56% of the total jobless. Considerable innovation in active labour market policy in recent years, supported by the Structural Funds, shows signs of helping the long-term unemployed get back into work, though it remains to be seen whether employment growth will spread across the country.

Regions in the South of Italy are undergoing restructuring, as many of the large firms, as well as the public sector, reorganise and rationalise. Small firms are, at present, the main source of job creation. Unemployment increased substantially over the period 1987 to 1997, in Calabria, the rate rising by 7 percentage points to 24.9% and in Sicilia, by 8 percentage points to 24.0%, while elsewhere in the Mezzogiorno, the rate went up by at least 4–5 percentage points.

This, however, is probably as much a result of labour market problems as pressure from rationalisation. Indicators of structural unemployment suggest that this is the highest in the EU. Exclusion is particularly high, unemployment of women is double that of men in many cases and activity rates of women are lower than anywhere else in the Union. Youth unemployment is nearly four times the rate for those of 25 and over and the long-term unemployed represent two-

thirds of the total jobless, higher than anywhere else in the Union.

Around 1 in 6 of the work force in the new Länder in Eastern Germany is unemployed, with as many again on short-term working. This is a result of major restructuring and, especially, rationalisation of industry. Given the scale of the initial problem, the labour market seems to have coped relatively well and there are some positive signs. Youth unemployment is slightly less than the overall rate and although unemployment of women is higher than of men, participation of women, if much lower than in 1991, is still among the highest in the EU (69% of working-age population). Hidden reserves of labour are, therefore, relatively small.

Regions in Finland have historically had low rates of unemployment. However, the severe shock of the early 1990s drove the complex collective bargaining system to virtual collapse. Employment fell by almost 20% between 1990 and 1994 and unemployment soared from 3½% to 18½%. The shock fell particularly heavily on the sparsely populated Northern and Eastern regions and unemployment rose to almost a quarter of the labour force in Lapland and parts of Itä-Suomi.

Since then, however, the situation has improved. Unemployment has declined, though the fall has been concentrated in the stronger regions; between 1995 and 1997, rates in Uusimaa in the South fell from 14½% to 12%, while rates in the East remained unchanged at around 20%. Structural unemployment, on the other hand, seems to be low so unemployment is likely to come down significantly as the economy recovers. Partly because of the long tradition of active labour market measures in Finland, less than a quarter of the unemployed have been out of work for a year or more, even in the worst affected regions. Women, moreover, are well integrated into the labour market, with unemployment and activity rates only slightly lower than those of men. The main worry is that youth unemployment is high, at around 38%.

Regions in Sweden have experienced similar problems, though on a smaller scale. Average unemployment rose from 2% in 1987 to 9½% in 1994 and subsequently rose further to 10% in 1997. As in Finland, the increase fell particularly on the sparsely populated Northern regions, where rates are around 13%. Structural unemployment, however, seems low,

with the long-term unemployed accounting for only around a third of the jobless, in part reflecting a long history of active labour market policy, and there is little evidence of exclusion of women and young people. The prospects for a significant future reduction, however, remain uncertain, not least because of the greater reliance than elsewhere in the Union on public sector employment.

## Conclusions

High unemployment is the major economic problem in the Union. At the end of 1998, just under one in ten of the labour force — 16½ million people — was without a job. In addition, low rates of labour force participation, particularly among women, indicate a vast pool of human resources which is lying idle.

Unemployment disproportionately affects particular regions and social groups and high rates of long-term unemployment mean social exclusion for significant numbers of people and serious difficulty in getting them back into work. Unemployment in the 25 worst affected regions averages 28%, while the 25 least affected regions have largely escaped the increases of the past 25 years, with rates of under 5%. Youth unemployment rates in the former average nearly 50% and less than 1 in 3 women of working-age are in work.

This suggests that, although sustained growth provides a favourable background for reducing unemployment, the market alone will not solve the problem. Structural problems require structural solutions:

- in particular, regional imbalances in the demand for labour mean that it is high in some regions but too low in others. Different solutions are required for different types of region. Less developed regions need help in boosting investment and improving their economic base. Regions undergoing restructuring, where unemployment is often highest, need help in smoothing the shift of employment to growing sectors. In all regions, flexibility is needed in the labour market to ensure that investment feeds through into job creation

and not just higher productivity. The job-content of growth, in other words, needs to be increased;

- around half of unemployment seems to be structural, linked to problems on the supply side, such as a lack of appropriate skills, which leads to marginalisation or the effective exclusion of certain people from the labour market. While measures to create jobs are necessary, they need to be combined with measures to promote access to these jobs, equalising the opportunities for those marginalised. Such measures include increased training or retraining to help workers adapt to structural change and assistance to help people find a job, especially the most disadvantaged, such as the long-term unemployed, young people lacking sufficient skills and women seeking to return to work after caring for children.

Member States have the principal role to play, by encouraging flexibility and ensuring that disadvantaged groups and those affected by restructuring receive support. The Structural Funds can also contribute, particularly by boosting economic development and hence job opportunities in weaker regions, but also by assisting the retraining of workers affected by structural change and by supporting measures to help the long-term unemployed and other disadvantaged groups into work.

[1] Figures for the 1980s exclude the new Länder and East Berlin.

[2] For example, "The Composition of Unemployment from an Economic Perspective", *Annual Economic Report for 1995*, European Commission.

## 1.3 Population and the labour force

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As forecast in the 5th Periodic Report,<sup>1</sup> the population in the Union has continued to grow at a higher rate than at the end of the 1980s. Although there has been a natural increase in population, with births exceeding deaths, inward migration into the Union has gained in importance. In 1995, it contributed nearly 80% of the total growth in population, though it declined somewhat in 1996 and 1997.

### Demographic developments, 1985–95

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- Total population of the Union (including the new German Länder) increased by 0.36% a year between 1985 and 1995, from 358½ million to 371½ million. The rise was greater in the second half of the period than the first, averaging 0.4% between 1989 and 1995 as opposed to 0.2% over the previous four years.
- Population aged over the period. While the proportion of young people under 15 declined from 19.7% to 17.6%, the share of those aged 65 and over increased from 13.5% to 15.4%.
- The Union labour force expanded by some 8½ million to 165½ million in 1995, a growth of 0.6%, mainly due to increasing participation of women and inward migration.
- Active population under 25, as well as in the 25 to 29 age group, declined partly because of demographic trends and partly because of increased participation in education and training. Among older people aged 50 to 64, the number of men in the labour force fell because of earlier retirement

(ie reduced participation) which offset demographic trends, while the number of women increased as higher participation reinforced population growth. In the age group in between, participation of men declined while participation of women increased markedly.<sup>2</sup>

### Population projections to 2025

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Demographic change depends on three factors: fertility, mortality (and so changes in life expectancy) and migration. Because of the uncertainty surrounding population forecasts, which increases with the length of the projection period, a frequent approach is to construct alternative scenarios, based on different, though reasonable, assumptions for these three factors. The latest Eurostat projections consist of a baseline scenario which essentially assumes a continuation of recent trends, a high growth scenario, which assumes higher fertility, lower mortality and higher net inward migration and a low growth scenario, which assumes the opposite. In some sense, these represent expected upper and lower limits for population growth up to 2025.<sup>3</sup>

#### Key features of the baseline scenario

The baseline scenario, which is similar to the latest population forecasts made by national statistical institutes in the different Member States, assumes:

- a slow recovery in the fertility rate from an estimated 1.44 in 1996 to 1.55 in 2000 and 1.65 in 2025;<sup>4</sup>

- a further increase in life expectancy, which has risen by more than 10 years since 1945, by almost 4 years for men and more than 3 years for women by 2025;
- slowly declining levels of net inward migration from around 760 thousand in 1995 to less than 600 thousand a year from 2010 onwards.

On these assumptions, Union population would continue to grow but at a rate of 0.3% a year until 2005, as against 0.4% between 1990 and 1995, and 0.1% a year from then until 2025 (Tables 18 and 19). From a Union population of 372 million in 1995 the baseline scenario predicts an increase to 377 million in 2000 and 388 million in 2025. Population will already be showing a natural decline by around 2010, but for a time this will be offset by net immigration. With birth rates remaining far below replacement level (ie the rate required to replace the parent generation, given death rates), the number of young people under 15 is set to decline in all Member States in the longer term, their share falling from 17% in 2000 to below 15% in 2025. Given this and the increasing share of older people, crude mortality rates, and so the rate of natural population decline, will accelerate. On this projection, Union population would start to fall from 2023 onwards

At a regional level, the differences in population trends are more pronounced and the change from growth to decline is more evident. While population is likely to grow in most regions over the period 2000 to 2005, it is already set to decline in Eastern Germany and the North-West of Spain and Italy, largely because of a natural fall in population, net outward migration being a factor only in Mecklenburg-Vorpommern and the Basque Country (Map 12). Emigration is also forecast to contribute to the decline in population in other regions, such as South-West Scotland, Lorraine, Alentejo, Calabria and Basilicata. The major cities in England as well as Bremen, Brussels and Vienna are also likely to experience a fall in population, partly as a result of an outward movement to neighbouring areas.

High growth rates, on the other hand, are expected in some regions in Southern Spain (mainly because of natural population growth), the South of France (mainly due to immigration) and Greece (because of both factors) as well as in a number of regions in the UK, Belgium and the Netherlands (Map 13). The high-

### Low and high growth scenarios

These two scenarios describe more extreme but still plausible population projections. They differ from the baseline projection in terms of each of the three factors which determine growth.

- *Low growth scenario:* fertility rates fall further to 1.40 in 2000 and only recover slightly to 1.44 in 2025. Life expectancy is projected to increase by two years for both men and women and net inward migration to fall to around 400 thousand from 2000 onwards.
- *High growth scenario:* fertility rates recover to 1.75 by the year 2000 and to 1.94 in 2025 (similar to the rate in the mid-1970s). Life expectancy increases by 8 years for men and 6 years for women. Net immigration rises until 2000 to more than 1 million a year and then falls to slightly below 800 thousand from 2010 on.

Under the low growth scenario, there would be a natural decline in population over almost all of the projection period, while there would be a net natural increase of between 500 thousand and 1 million a year in the high growth scenario. While over the near future, the difference in the three projections is relatively small, over the longer period, it is substantial. By 2025, population in the Union under the high growth scenario would have risen to 423 million, while under the low growth scenario it would have fallen to 358 million.

With fertility rates close to replacement levels, the share of young people in total population would remain around 17% until 2025 in the high growth scenario, while in the low growth one it would fall to below 13.5%.

Recent data for the period 1995–8 give some indications of which scenario — low, high or baseline — is closest to the initial outturn. For example, fertility rates are proving lower than predicted in the baseline scenario, so observed increases in the young population are around the average of the baseline and low scenarios. On the other hand, mortality rates as well as net migration were somewhat overestimated in the baseline scenario. Thus the aging of the population and the growth of the number of old people are both close to the average of the baseline and high scenarios. It seems therefore, at least on initial readings, that the baseline scenario is proving a good central estimate, although the other two scenarios need to be taken into consideration.

est growth of population continues to be in Flevoland in the Netherlands (a region reclaimed from the sea), though growth is also forecast to be high in Luxembourg and several West German regions, where both fertility rates and net inward migration are assumed to be relatively high.

By the period 2020 to 2025, many more regions are likely to have declining population (Map 14). These include all those in Italy and in Northern Spain as well as some in Greece, (Western) Germany and France because of fertility rates remaining below replacement level for an extended period — so causing natural population to fall (Map 15) — combined, in Germany, with reduced inward migration. Only in the UK and Sweden are fertility rates projected to be closer to replacement levels, so that in some regions which experienced a decline between 2000 and 2005, population could rise between 2020 and 2025 (in Greater London, Greater Manchester, the North of England, Norra Mellansverige, Mellersta Norrland). At the same time, in the South of France, major inflows of migrants (largely people retiring) from other regions of France as well as from countries outside the Union, such as in North Africa, are likely to continue. Once again, Flevoland is projected to be the highest growth region (population rising by 0.7% a year).

### The ageing of the population

While the different scenarios show very different trends for the share of young people in total population, this is not the case for the share of older people. Since all those who will reach the age of 65 or over by the end of the period have already been born, the only uncertain factors are the change in life expectancy and net migration. In all three scenarios, the number in this age group is projected to increase, just as it has since 1950. At present, it is rising by around 0.8 million, or 1%, a year, over twice the growth in total population. Under the baseline projection, growth would continue at this rate until 2005, after which it is forecast to increase to 1.1 million a year as the baby-boom generation reaches retirement age. This growth in the number of people of 65 and over is common to all Member States. In this scenario, the share of the population of 65 and over will increase from 16% in the year 2000 to 22% in 2025.<sup>5</sup>

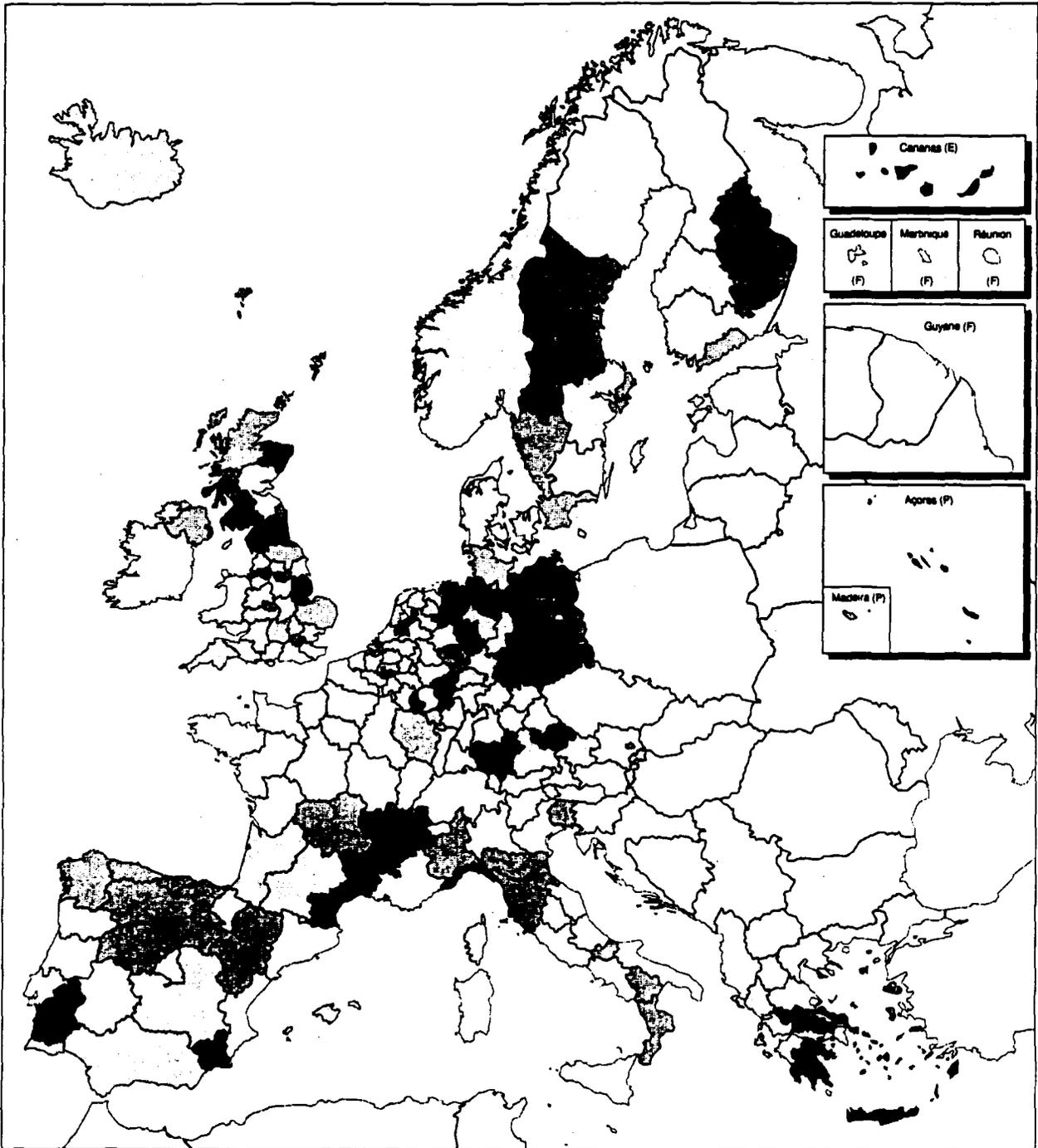
The significant increase in the share of older people (even under the high growth scenario) will have pro-

found consequences for systems of social protection, particularly for pensions, which for the most part are funded by contributions of employees and employers. The increase will mean that a significantly higher number of people above retirement age will need to be supported by those in work and paying contributions. While there were about 4.3 people of working age for every pensioner in 1995, by 2025, there will be fewer than 3 (Map 16).

The prospective problem, however, varies markedly between different parts of the Union. In the countries with a relatively young population, Ireland, Luxembourg and the Netherlands, the old-age dependency rate for the most part was 20% or below in 1995. This was also the case in some regions in the North-East of France, the South of Spain and Italy, the West of Austria and the South-West and North-East of Germany. In several regions in the South of France, the North of Spain and Northern-Central Sweden, however, the ratio has already reached 30% or so. In the Swedish regions, this is a result of emigration of people of working age, which is also the case in some parts of Northern Spain and the South of France. In Languedoc-Roussillon and Provence-Alpes-Côte d'Azur, on the other hand, significant immigration of people of pensionable age has the same effect on the rate.

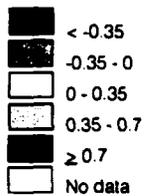
While no significant ageing effect is likely to be visible by 2005 in the UK, Sweden and Ireland, the old-age dependency rate is set to increase in Northern and central Italy as well as in Southern and Eastern Germany, the South of France and mainland Greece. The dramatic changes in the age structure of Union population will become apparent in 2025 (Map 16). In a number of regions in Northern Italy and central France, the old-age dependency rate is projected to rise to well above 40%, as a result of low birth rates over a long period of time, which has the effect of depressing working-age population, and, in France, of relatively low net immigration. Apart from in the South of Spain and Northern Portugal, only in Ile de France (Paris) and urban conurbations in England would the rate remain relatively low (around 25%), whereas in the Netherlands, where population was previously relatively young, the number of people of 65 and over relative to population of working age is likely to increase markedly to around the EU average.

Among those aged 65 and over, the share of the very old, those aged 80 and over, is expected — after a



**Map 12 Population growth by region, 2000-05**

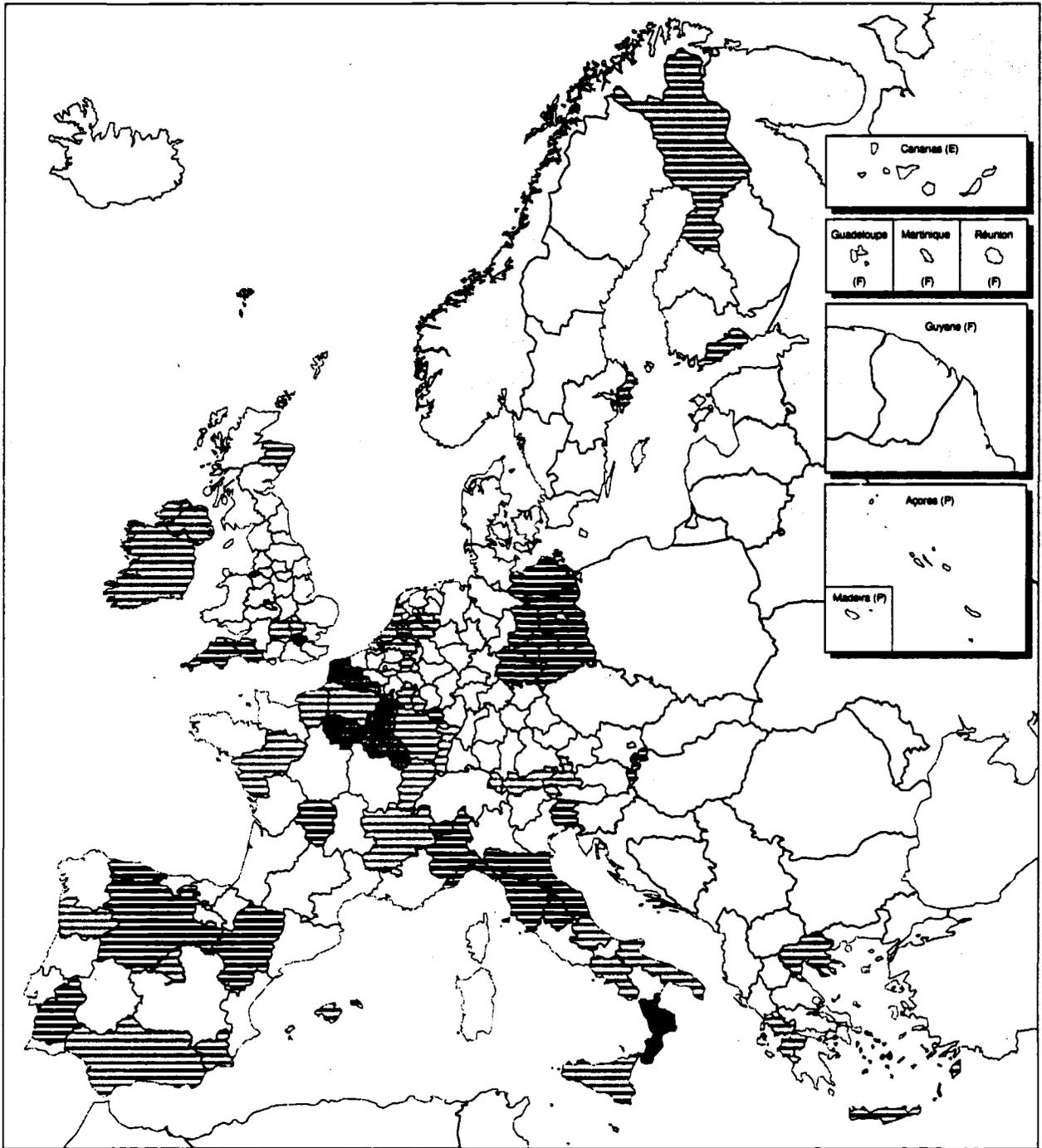
Annual average % change (baseline scenario)



EUR15 = 0.3

Source: Eurostat

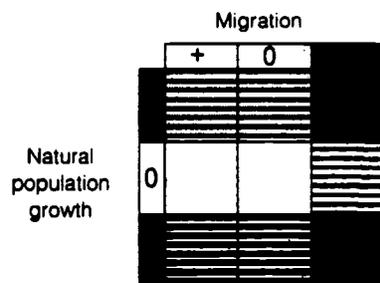
0 100 500 km

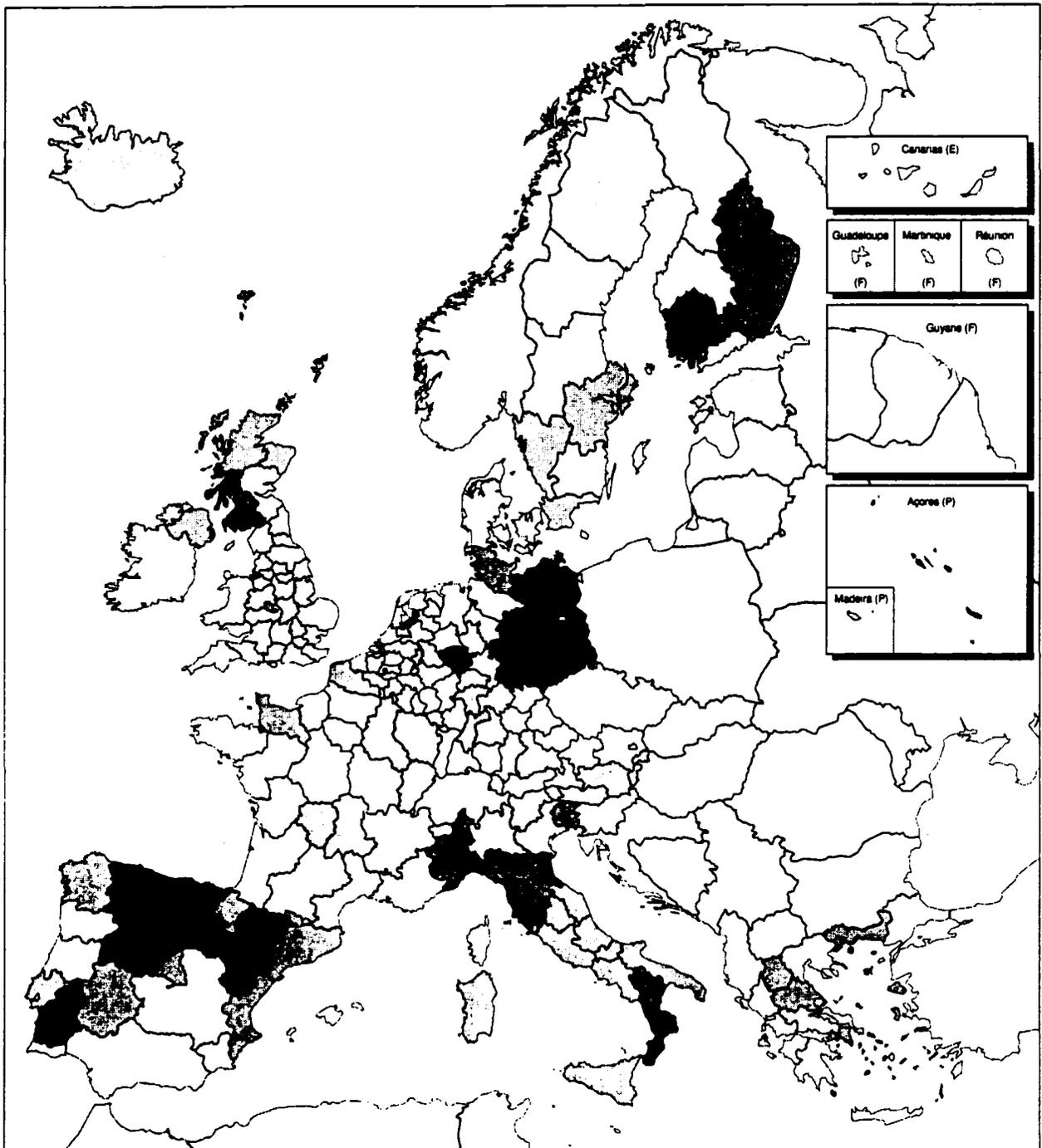


**Map 13 Population growth and migration, 2000-05  
(baseline scenario)**

0 100 500 km

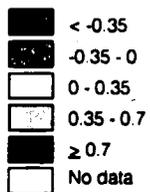
Source: Eurostat





**Map 14 Population growth by region, 2020-25**

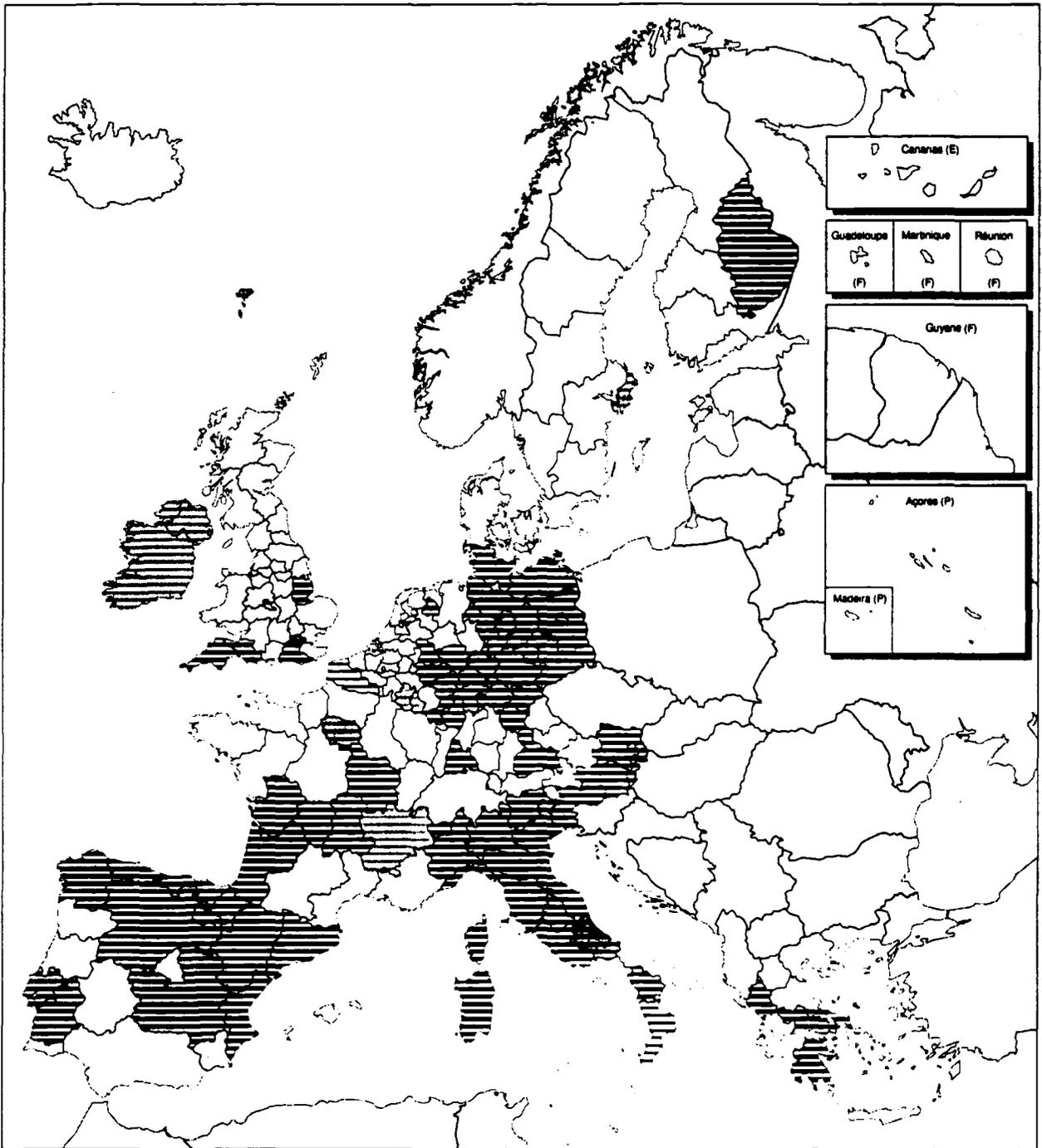
Annual average % change (baseline scenario)



EUR15 = 0.1

Source Eurostat

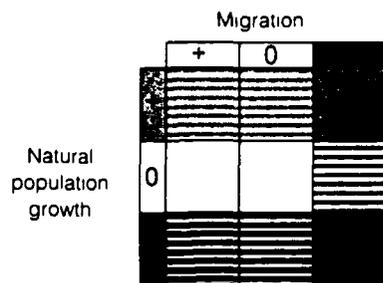
0 100 500 km



**Map 15 Population growth and migration, 2020-25  
(baseline scenario)**

0 100 500 km

Source: Eurostat



temporary fall up to the year 2000 — to increase continuously to over 27% in 2020 in the baseline projection. The increase is likely to be most pronounced in Greece, Spain and Italy, a development which would necessitate major efforts to extend systems of long-term care for the elderly, in the form of home help as well as nursing homes.

#### Dependency rates

The overall dependency rate is the total number of people above and below working age (15 to 64) relative to those of working age. As such, it summarises the consequences of changes in the fertility rate, life expectancy and migration for the age structure of the population.

The rate for the Union as a whole has, in practice, declined over the past 20 years from around 55% to just under 50%, signifying that there are slightly less than 50 potential dependants for every 100 people of working age. The decline reflects the fall in births and so in the number of children under 15 which has more than offset the increase in the number of people of 65 and over. This, however, will no longer be the case from the year 2000 on, and, according to the baseline projection, the rate will rise steadily, so that by 2025 there will be 58 potential dependants for every 100 people of working age.

At the regional level, the lowest dependency rates are generally found in capital cities and surrounding regions, though they are also low in most regions in Germany and Austria as well as in the North and centre of Italy because of the low birth rates in these areas (Map 17). In the more economically successful places, the effect of low birth rates has been reinforced by inward migration of people of working age (Darmstadt, Oberbayern and Lombardia, for example). The highest dependency rates generally occur in regions where there is an above average proportion of children, reflecting relatively high birth rates, such as in Ireland and various parts of France and Spain, which more than offsets, in some cases, in Ireland in particular, relatively small numbers of people of retirement age.

Projections indicate that the increase in the number of elderly people will push up the dependency rate in Western Germany and the North of Italy by 2005 (Map 17), and by 2025, across the whole of

the Union, despite the fall in relative numbers of children. The rate is likely to be particularly high (well over 60%) in France (especially in central regions), Sweden and Finland, except in each case in the capital city.

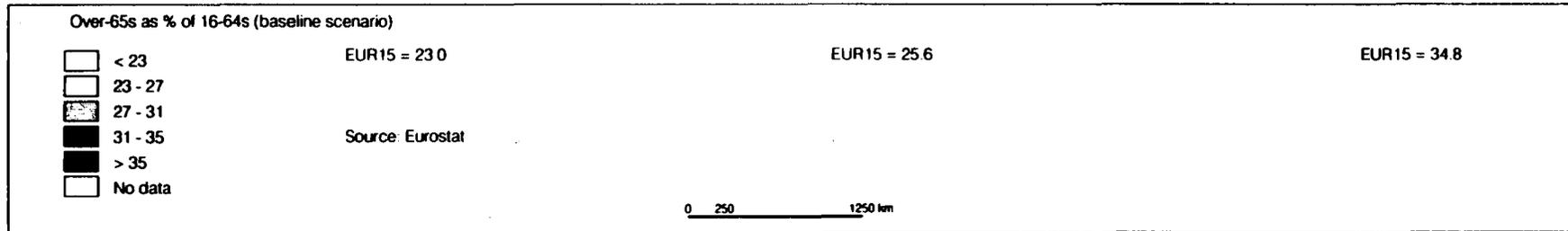
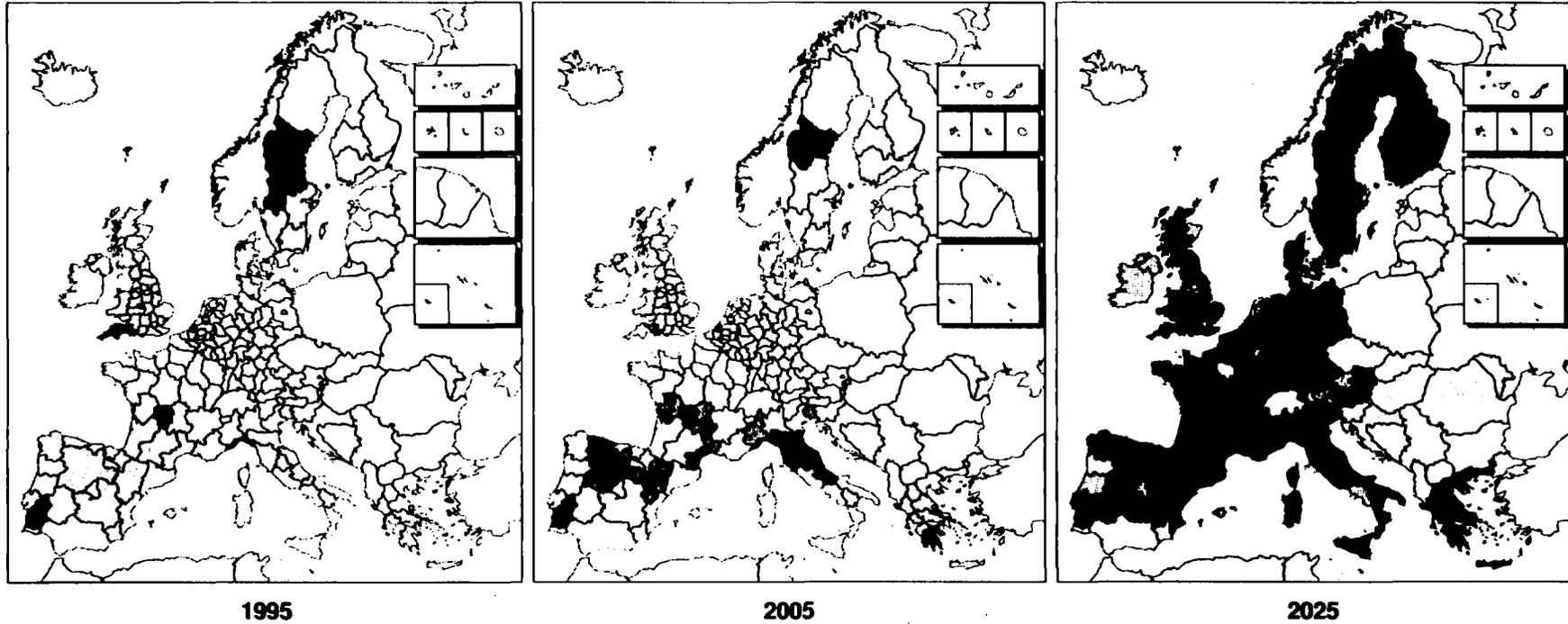
Although the dependency rate gives an indication of the relative number of people needing to be supported by those of working age, and so of the tax implications, it needs to be interpreted with care. On the one hand, it implicitly treats changes in the number of children and elderly people as if they were equivalent, whereas, in practice, the costs of pensions and long-term care are likely to be greater than those associated with caring for and educating children. Moreover, while the former costs fall to a major extent on the public sector, and, therefore, have fiscal implications, the costs of raising children tend to fall much more on the family. On the other hand, it fails to take account of the number of people of working age who are not in work and need to be equally supported by those people who are. The fiscal implications of future increases in the dependency rate, therefore, could potentially be offset by increases in the proportion of people of working age in employment, through both reductions in unemployment and increases in participation.

#### Labour force developments

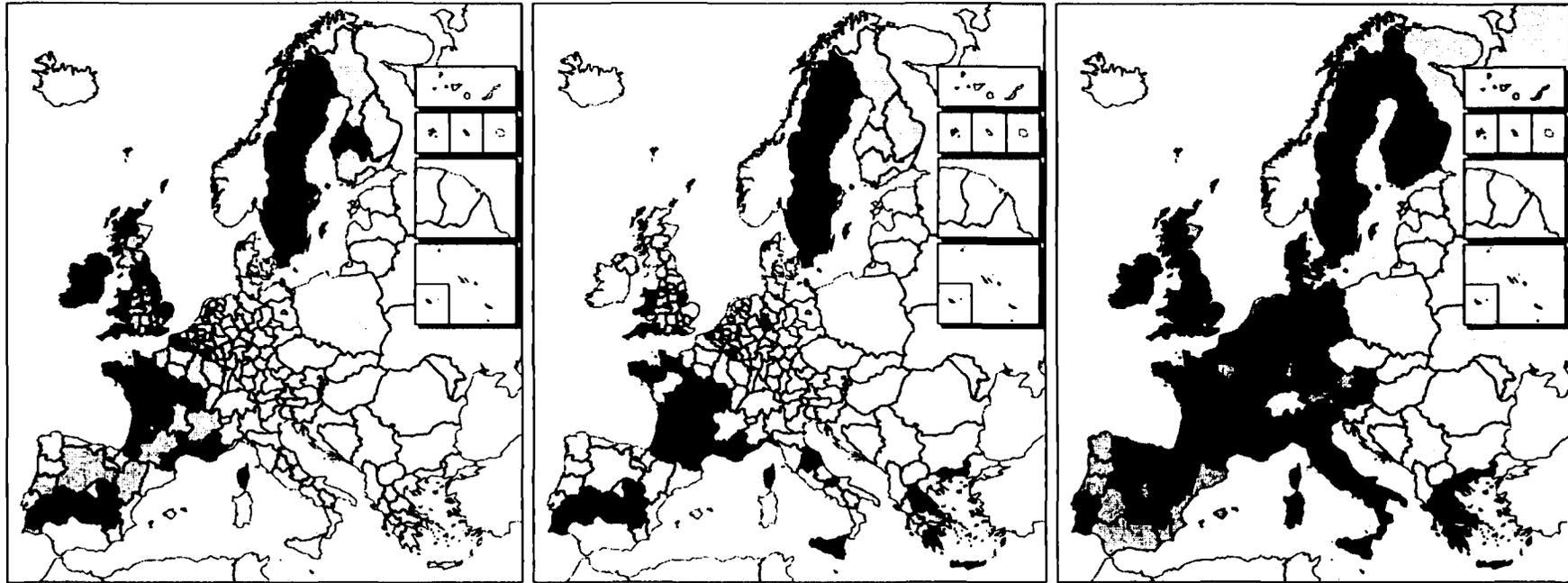
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The demographic prospects described above also have implications for the size and age composition of the labour force. These, however, are as much influenced by changes in participation as by demographic trends. Such changes are determined, in turn, by a range of factors, such as attitudes towards further education, the age of retirement and women working, as well as the availability of child-care facilities, the nature of pension schemes and the possibility of early retirement and the structure of households. They are also affected by economic factors, especially the ease or difficulty of finding a job, which has a strong effect on people's motivation to join the labour force. Participation, therefore, tends to increase as net job creation rises and to decline when it falls. Moreover, demographic trends can potentially influence participation, and vice versa, insofar as, for example, a reduction in working-age population relative to the demand for labour encourages more people to join the labour

Map 16 Old-age dependency rates, 1995, 2005 and 2025



Map 17 Overall dependency rates, 1995, 2005 and 2025



1995

2005

2025

Under-15s and over-65s as % of 15-64s (baseline scenario)

- < 0.45
- 0.45 - 0.50
- 0.50 - 0.55
- 0.55 - 0.60
- > 0.60
- No data

EUR15 = 49.2

EUR15 = 50.6

EUR15 = 58.2

Source: Eurostat

0 250 1250 km

### Low and high growth labour force projections

The two alternative scenarios for the labour force are based on the equivalent two projections of population. The low growth scenario, therefore, combines low growth of population with relatively small increases in participation and vice versa for the high growth scenario. The main specific assumptions are as follows.

- *Low growth scenario:* lower rates of economic growth than in the past with little growth in employment, giving little incentive for more people to enter the labour market. For young people, lack of jobs means more of them staying longer in education and a continuing decline in labour force participation. For women with young children, there is minimal move to more flexible working arrangements or increase in child-care facilities since employers lack the incentive to recruit more of them. The trend towards early retirement continues, especially among men, and those remaining in employment work full-time because of fears of losing their job altogether if they switch to working part-time. As a result, few additional jobs are created for others to move into.
- *High growth scenario:* higher rates of economic growth than in the past, so giving rise to significant increases in employment, encouraging more people to enter the labour market and employers — and governments — to make working arrangements more flexible. As a result part-time jobs increase, making it easier for young people to combine continuing education with paid employment and for women to reconcile family responsibilities with pursuing a working career. Participation of both, therefore, rises, for women in all Member States towards levels in Sweden and Denmark. In addition, those approaching re-

tirement age can switch to part-time work, further adding to the stock of jobs.

These two opposing scenarios lead to markedly different outcomes. In the low growth scenario, the labour force declines throughout the projection period, falling to only 144 million in 2025, some 23 million less than at present, with even the number of women declining after 2005. In the high growth scenario, the labour force grows up to 2020, though at a declining rate (by over 1% a year up to 2005 and just under ½% a year from then until 2020). By 2020, the labour force amounts to some 207 million, 40 million more than at present, and only starts to decline slowly from then on. This demonstrates forcibly that in the high scenario there is little reason for labour supply problems, in terms of the number of people entering the labour market at least, to constrain the growth of employment, and of the EU economy, for some time to come.

Some initial evidence (eg lower than expected net immigration and fertility) suggests that labour force growth could fall between the baseline and the low scenario. However, the baseline scenario is still a good central estimate of the future development of the labour force.

In addition, it is important to note that, over the next 5 to 10 years, the main influence on the growth of the labour force will be factors which affect participation, particularly the availability of jobs. Though demographic trends will have some effect, this is relatively minor and it is only in the longer-term beyond this period, that changes in fertility rates, life expectancy and net migration have an important effect on the outcome.

force or growth of economic activity stimulates an increase in net inward migration.

Given the wide range of factors affecting participation and the complex nature of the interrelationships between them, any projections of the labour force in future years are considerably more uncertain than those of population and are surrounded by a very wide margin of error. Nevertheless, they are of some interest since they serve to raise a number of potential issues. The approach adopted, as above, is to set out three alternative scenarios based on specific assumptions about future trends. None of these, it must be emphasised, should be regarded as forecasts but only as hypothetical illustrations of possible developments.

### Baseline scenario

In the baseline scenario, recent trends are assumed, for the most part, to continue. The main assumptions are:

- continued growth of the EU economy at just over 2% a year, distributed between regions much as in the past;
- modest increases in labour demand and employment growth as a result, with most of the growth going into part-time jobs, as in the recent past, and full-time jobs increasing only slightly;

- a small increase in labour force participation of young people under 25, in contrast to past trends, but centred on part-time work;
- increased participation of women in all Member States, except Sweden, especially in those where the rate is still low which are assumed to converge towards the rate in Sweden and Denmark;
- a limited rise in participation of women with young children, most of these working part-time, reflecting a modest move towards more flexible working-time arrangements and increased child-care facilities;
- a rise in the participation of women aged 50 to 64 in the short-term and, in the longer term, of men in the same age group as early retirement diminishes.

While the labour force in the Union grew by over 1% a year between 1985 and 1990, partly as a result of a high rate of net job creation, with the recession of the early 1990s, growth slowed down markedly to well under ½% a year between 1990 and 1995 (Tables 18 and 19). In the future, growth is projected to be slightly more than this over the period up to 2005, at around ½% a year. Thereafter, growth would slow down significantly, the labour force reaching its peak size in 2011 (at around 181 million some 14 million more than at present). After 2011, the labour force is projected to decline at an accelerating rate (exceeding ½% a year between 2020 and 2025) so that by 2025, it would only amount to some 172 million. This decline, moreover, is expected to affect all Member States after 2020.

A feature of the projection is that, whereas, in the past, population growth has contributed significantly to the increase in the labour force — particularly as the baby-boom generation joined the work force and as the numbers leaving it to move into retirement were relatively small because of the effects of the war — in the future, this will no longer be the case. Declining numbers of young people will enter the labour force, while the numbers reaching retirement age will increase. Despite inward migration, the demographic contribution to labour force growth will, therefore, decline sharply and will already be negative from 2005 on.

This, however, will be more than offset by an increase in participation, at least up to 2011. Though participation of men is projected to rise slightly, instead of falling significantly, as it has done for some years, the increase comes predominantly from growing numbers of women joining the labour force, their average activity rate rising from just under 58% at present to 64% by 2020, equivalent to an additional 12 million women in the labour market. In most Member States, except, in particular, in the Nordic countries, activity rates of women are projected to rise rapidly up to 2005 and more slowly from then on. For men, rates are projected to fall in most Member States after 2005, largely because of the ageing of those of working age and a rise in the relative numbers in the older age groups for whom participation tends to be lower.

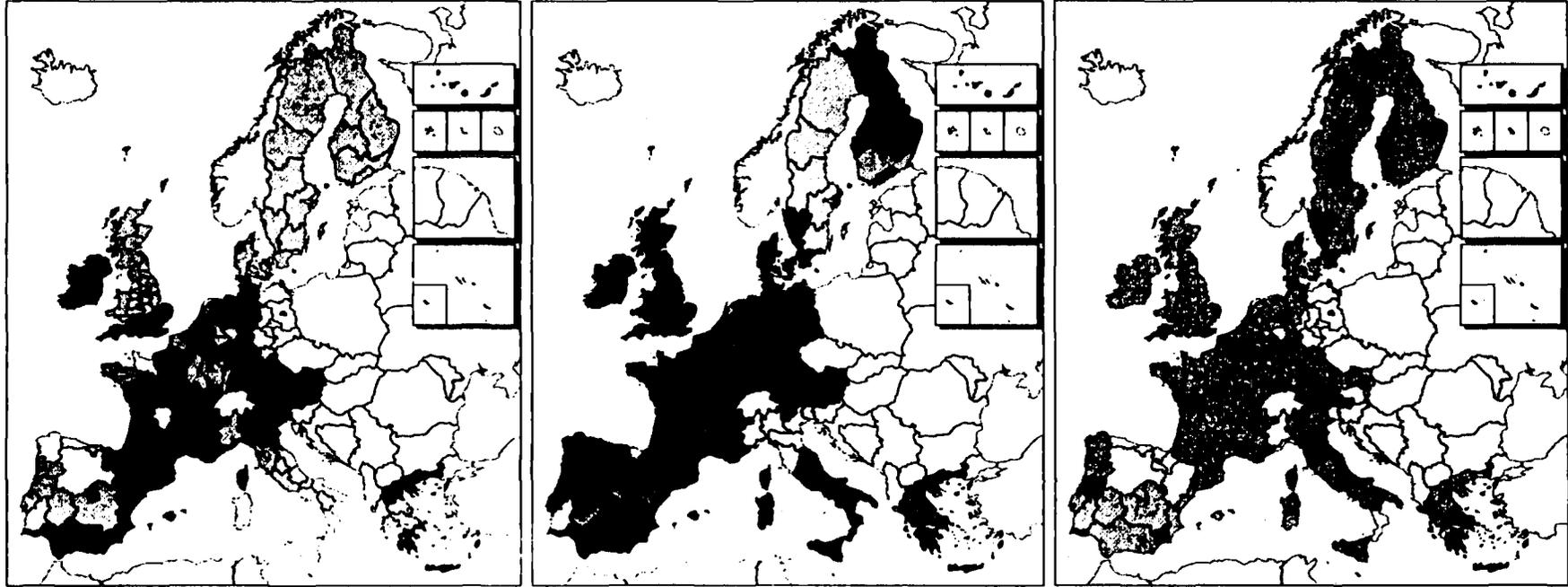
The overall rise in participation is important not only for its effect on the labour force in the Union and on the individuals concerned, but also because of its fiscal implications, especially in respect of the funding of social protection systems, likely to be put under increasing pressure as the number of elderly people grows. This is only the case, however, if higher participation is reflected in more people actually in work, which will depend on the rate of job creation across the Union.

#### Regional analysis

Changes at the regional level largely reflect the overall trends, though there are a number of divergent features.

- While the labour force declined across the whole of the UK, Sweden, Denmark, Finland and Italy (except Trentino-Alto Adige) between 1990 and 1995, largely because of falling participation, in Germany, there were marked differences between the Eastern and Western parts (Map 18). In the new Länder, as a result of both declining participation, as jobs became scarce (activity rates of both men and women falling by some 5 percentage points), and significant outward migration to the old Länder, the labour force was reduced substantially. In the old Länder, on the other hand, the inward migration from the East offset the fall in participation. Immigration also served to increase the labour force in the Thessaloniki region of Greece (Kentriki

Map 18 Labour force growth by region, 1990-2025



1990-95

2000-05

2020-25

Average annual % change (baseline scenario)

- < -1
- 1 - 0
- 0 - 1
- 1 - 2
- > 2
- No data

EUR15 = 0.22

EUR15 = 0.54

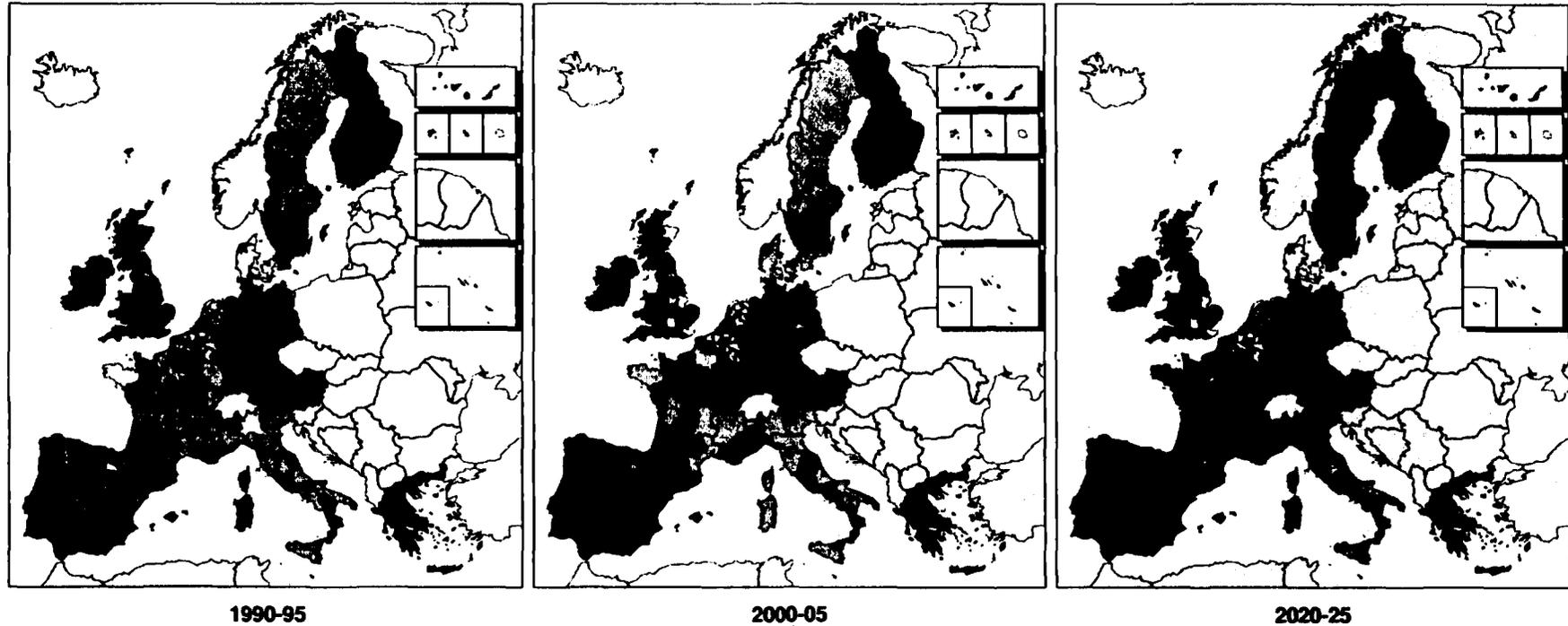
EUR15 = 0.59

UK NUTS-1  
 A, S, FIN national level only  
 D new Länder 1991-95

Source Eurostat

0 250 1250 km

**Map 19 Labour force participation rates of men, 1990-2025**



Male labour force as % of men 15-64 (baseline scenario)

- < 70
- 70 - 75
- 75 - 80
- 80 - 85
- > 85
- No data

EUR15 = 78.7

EUR15 = 77.9

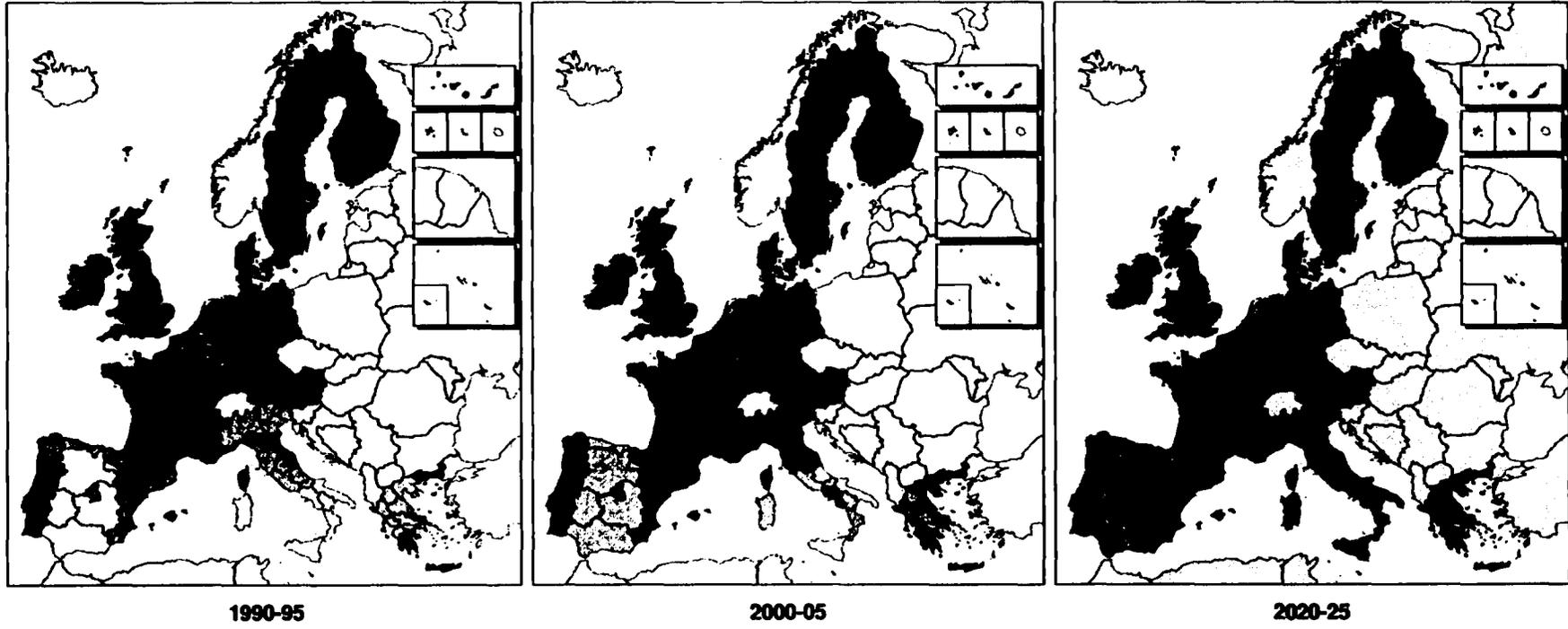
EUR15 = 77.2

UK NUTS-1  
 A, S, FIN: national level estimates only  
 D: new Länder 1991-95

Source: Eurostat

0 250 1250 km

**Map 20 Labour force participation rates of women, 1990-2025**



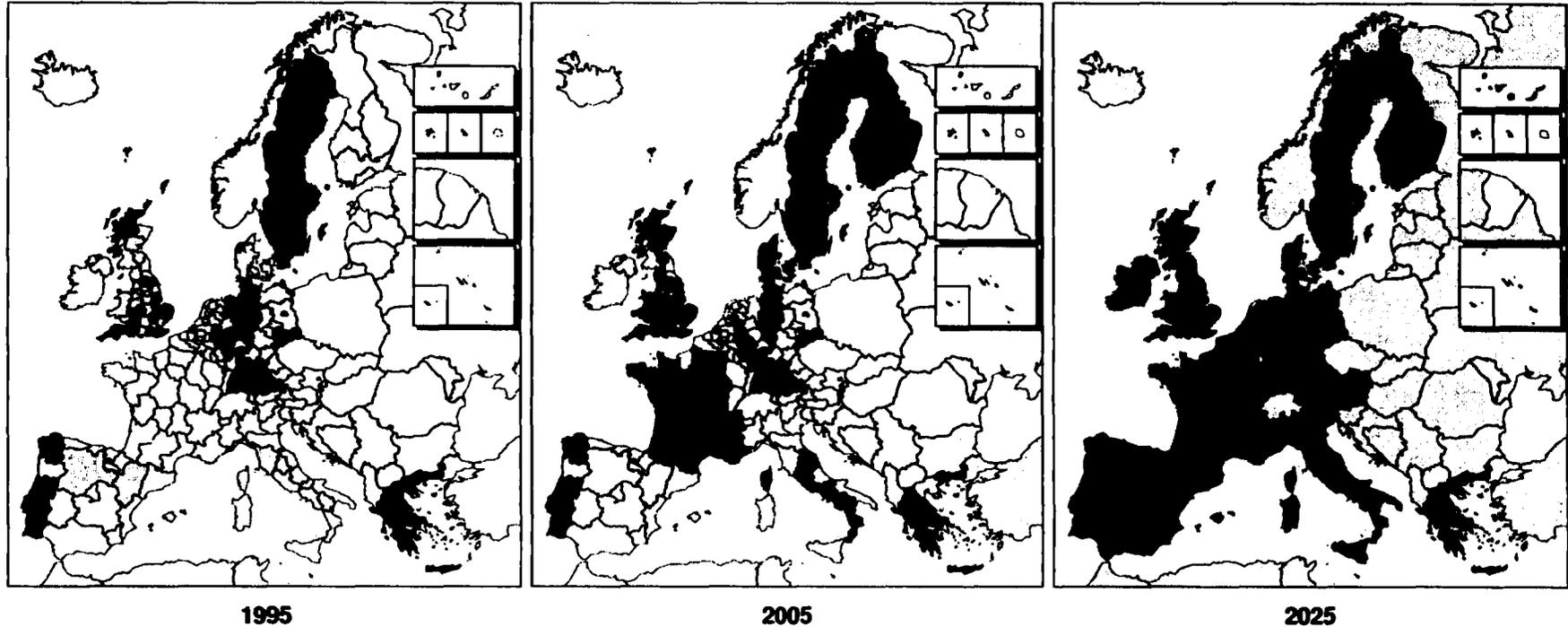
Female labour force as % of women 15-64 (baseline scenario)

	< 40	EUR15 = 55.8	EUR15 = 61.4	EUR15 = 63.5
	40 - 50	UK: NUTS-1		
	50 - 60	A, S, FIN: national level estimates only		
	60 - 70	D: new Länder: 1991 to 1995		
	> 70			
	No data			

Source: Eurostat

0 250 1250 km

Map 21 Share of 50 to 64 year-olds in the labour force, 1995, 2005 and 2025



1995

2005

2025

% of labour force (baseline scenario)

- < 18
- 18 - 21
- 21 - 24
- 24 - 27
- 27 - 30
- > 30

No data

EUR15 = 18.8

EUR15 = 21.5

EUR15 = 28.5

Source: Eurostat

0 250 1250 km

Makedonia) as well as in Valencia, Madrid and Cataluña in Spain, offsetting the effect of low birth rates and adding to the effect of rising participation.

- On the baseline projection for the period 2000 to 2005, the labour force increases in nearly all regions across the Union (Map 18). This, as noted above, is largely because of a continuing increase in participation, especially among women, the only regions where this is not projected to occur, or to occur at a lower rate than elsewhere, being those in the three Nordic countries. Even in the new German Länder, the recent fall in participation of women is expected to be reversed and rates are projected to rise back to their pre-1991 levels.
- The only regions where the labour force is projected to decline up to 2005 are in Northern Italy, where it also fell between 1990 and 1995 (Map 18). This fall is projected to continue in the years after 2005 when a drastic reduction in the labour force is also projected in the Eastern part of Austria, most of Flanders and parts of Western Germany. Given that unemployment is already low in many of these areas, it is possible that labour shortages will emerge in the future. This, however, depends, on the pace of future economic growth and the demand for labour in these regions. On the other hand, if economic growth and rates of net job creation were to be high, this might well encourage more people to join the labour force, so staving off the possibility of labour shortages materialising. This is especially so in the many regions where rates of participation, especially among women, are well below the Union average (in Italy, rates for men and women taken together are lower than anywhere else in the EU).
- By contrast, in some of the regions with high unemployment at present, such as the Southern parts of Spain, France and Italy as well as areas in the North of France, the labour force is projected to grow up to 2005 as a result of an increase in both population and participation, despite some outward migration from the South of Italy and Nord-Pas de Calais in France. Changes in labour supply, therefore, are unlikely to help solve the unemployment problem over this period.

- Participation of women is projected to increase virtually everywhere, except Sweden, and that of men to rise in the four Cohesion countries as well as in the South of Italy (Maps 19 and 20). Rates of participation, however, tend not to vary markedly between regions in the same country, though there is some tendency for rates to be higher in urban areas than rural ones. Participation of women is, therefore, projected to remain below the EU average in all regions in Belgium, Spain and Italy and above average throughout the UK, Sweden and Finland. Accordingly, even in urban areas in the first group of countries, rates will continue to be less than in rural areas in the second group. In consequence, measures to increase labour force participation need to be implemented predominantly at the national rather than regional level.

### The ageing of the labour force

With the general ageing of the population in the EU, the decline in the number of young people entering the labour market and an increase in participation of those between 50 and 64, especially women, the average age of the labour force is projected to rise from around 38 at present to over 41 in 2025 in the baseline scenario. At the same time, the number of those aged 50 to 64 is projected to increase from just under 20% of the total to almost 30%. While the extent of the change differs between Member States, it is likely to be similar in different regions of a country. In the Nordic countries, where participation is not expected to change much, the ageing effect is relatively small. In Italy and Spain, on the other hand, where birth rates are low and participation rates of women are projected to increase significantly, it is pronounced, especially in the Southern regions of both countries (Map 21).

The prospective ageing of the work force and the increased number of older workers raises questions about the effect on the ability to adapt to changes in technology and new ways of working. In the past, the steady stream of young, freshly educated people joining the labour market provided employers, in some degree, with up-to-date technical knowledge and recently acquired skills at a relatively low wage. The decline in this stream and the changing circumstances mean that there will be more need to develop other ways to ensure that the skills of the work force are renewed and that

firms can respond to advances in technology and new working methods. This implies according more importance to life-long learning, to retraining existing members of the work force and to updating the skills of women returning to work after a period of absence for family reasons.

- 
- [1] European Commission (1994), *Competitiveness and Cohesion: trends in the regions*.
  - [2] European Commission, *Demographic Report 1997*, COM(97) 361.
  - [3] Eurostat (1998), *National and Regional Population Trends 1975–2025*, forthcoming.
  - [4] The total fertility rate is defined as the average number of children born alive to a woman over her lifetime assuming she had the same fertility rate as women in specific age groups during her childbearing years.
  - [5] In a scenario with high life expectancy combined with low fertility and low inward migration (the so-called "old scenario"), this share would rise to almost a quarter, whereas under a scenario with the opposite assumptions ("young scenario"), it rises to only 19%.
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## Part 2 Factors underlying competitiveness

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## 2.1 Introduction to competitiveness

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### Defining competitiveness

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Competitiveness is often viewed as a key indicator of the success or failure of policy. The concept of competitiveness, however, while relatively clear when applied to enterprises, is more difficult to define and measure when applied to regions or countries. An industrial region, for example, is not directly competing against a predominantly agricultural region or a financial centre, so the measurement of its relative competitiveness is problematic. Moreover, the term itself tends to convey the impression of a win/lose situation, in which regions can improve their position only at the expense of others, whereas, in practice, there are mutual gains to be achieved from individual regions becoming more competitive.

The challenge is to develop a concept of competitiveness which avoids these problems. At the same time, it needs to capture the notion that, despite the fact that there are strongly competitive and uncompetitive firms in every region, there are common features within a region which affect the competitiveness of all firms located there. These features include physical and social infrastructure, the skills of the work force and the efficiency of public institutions. In an increasingly global economy, such factors can contribute strongly to business success and need to be at least of a minimum standard in order to avoid putting firms at a significant disadvantage as compared with those located elsewhere. Moreover, business success will tend in itself to add to a region's competitiveness insofar as the externalities to which it gives rise facilitate the development of other firms in the sector, or sectors, in question and attract new investment into the area.

Many of the indicators for measuring competitiveness which have been suggested reflect the underlying

causes. These are factors such as the level of basic infrastructure, innovative capacity, the pool of skilled labour or the concentration in growing or declining sectors. It is difficult, however, to develop a unified measure on this basis, so this report adopts the well-established convention of defining competitiveness in terms of the outcome rather than the causes.

Competitiveness is, therefore, defined here as the 'ability to produce goods and services which meet the test of international markets, while at the same time maintaining high and sustainable levels of income' or, more generally, 'the ability of companies, industries, regions, nations and supra-national regions to generate, while being exposed to international competition, relatively high income and employment levels'.<sup>1</sup>

In line with this, GDP per head in any economy can be decomposed, for analytical purposes, into the following elements:

$$\frac{\text{GDP}}{\text{Pop.}} = \frac{\text{GDP}}{\text{Empl.}} \times \frac{\text{Empl.}}{\text{Working-age pop.}} \times \frac{\text{Working-age pop.}}{\text{Total pop.}}$$

The last element, the proportion of population of working age, contributes relatively little to the variation in GDP per head between regions and, in any case, is not a variable which can easily be affected by policy. It is, therefore, excluded from the following analysis.

Accordingly, competitiveness is measured in terms of GDP per head and is divided into two components which together determine its level: GDP per person employed, which is approximately equivalent to labour productivity (though it does not take into account the average number of hours worked, which can vary), and

the total number of people employed relative to working-age population, ie the employment rate.<sup>2</sup> For a region to be competitive, it should have both a relatively high level of productivity — or of job quality since the two will tend to go together — and a large number of people in work — or a satisfactory quantity of jobs. It should also be noted that the growth of GDP per head in any region is closely approximated by the sum of productivity growth and employment growth.

The relationship between productivity and employment is rich and complex with many underlying influences. Growth of productivity, for example, is sometimes seen as being incompatible with increased employment, but whereas this may be true in simplistic terms in the short-term — eg for regions undergoing restructuring — in the long-term, the two are more likely to be complementary, regions with high productivity growth tending to grow by more, to create and attract higher investment and, accordingly, to have higher rates of net job creation. In addition, the underlying factors may affect one component much more than the other, such as technological advance which will mainly boost productivity, or may affect both in different ways, such as training to improve labour force skills, which may not only raise productivity, but also increase the ability of people to find employment.<sup>3</sup>

### Trends in components of competitiveness

Growth in the EU, certainly since the war, has largely been achieved by raising the average output of each

person employed rather than by increasing the number of people in work. Of the growth in GDP of 2.2% a year over the 10 years 1986 to 1996, growth in output per person employed contributed 1.8% a year and growth in the number employed only 0.4% (Graph 12). The low employment-content of growth compares unfavourably with the US where, over the same period, the greater part of the growth in GDP of 2.5% a year stemmed from an increase in employment of 1.5% a year, output per person only rising by 1% a year.

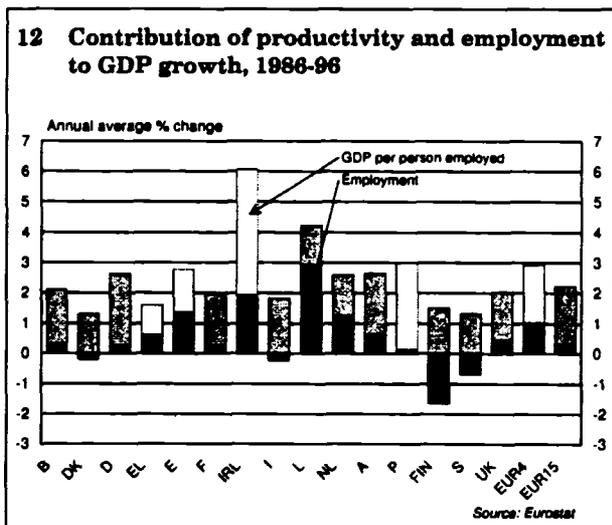
In terms of levels, the gap in GDP per head between the EU and the US is accounted for equally by the two components, both productivity and employment being around 20% higher in the US than in the EU. The gap in productivity, therefore, closed over the period, while the employment gap widened.<sup>4</sup>

As noted in previous sections, both the level and growth of GDP per head vary significantly between regions in the EU. The relative contribution of the two components, productivity and employment, also varies significantly, even for regions with similar levels of GDP per head.

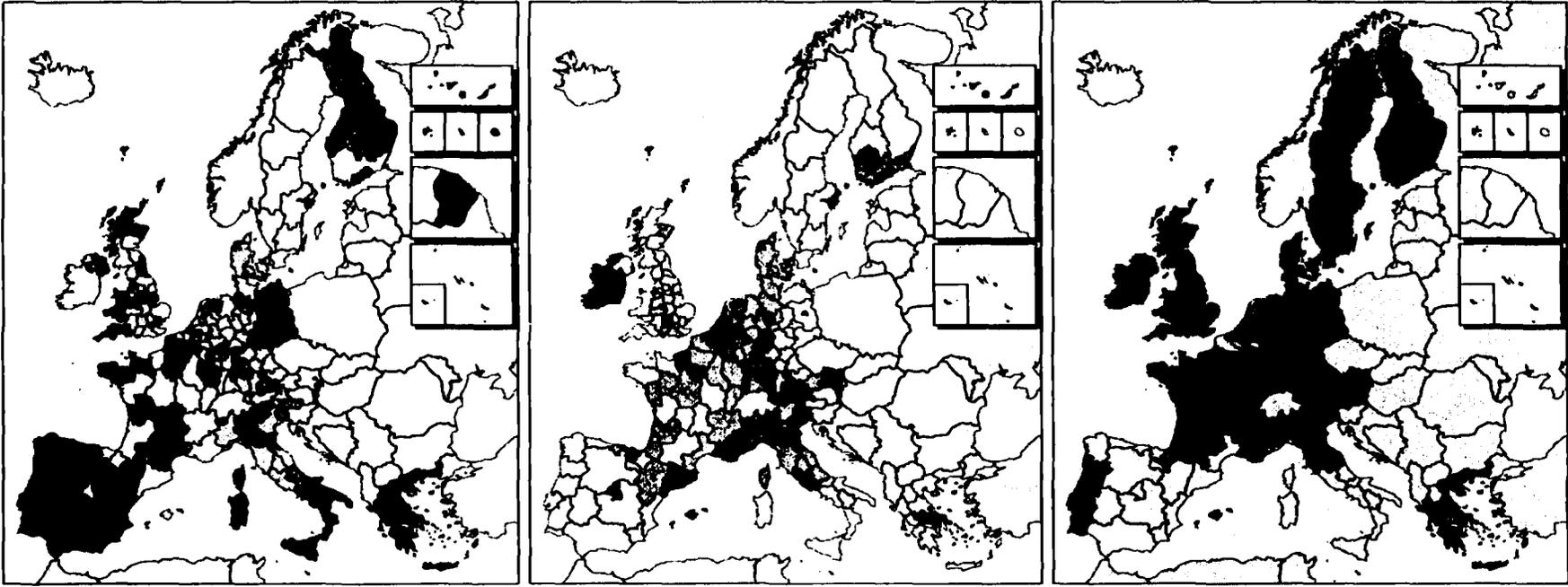
For example, while the regions in Portugal have a level of GDP per head which is similar to that in Spanish regions (apart from the North-East), the level of productivity is much lower (typically only around 60% of the EU average as compared with around 90% of the average in Spain). Conversely, employment is some 68% of working-age population in Portugal, whereas in Spain, it is only around 45%, and only 40% in Andalusia, among the lowest rates in the EU and well below the EU average of just over 60% (Map 22).

Therefore, while the level of productivity in Spain has largely converged on the EU average, the relative number in work is still substantially below and increasing employment is the main economic challenge. In Portugal, on the other hand, where the level of employment is well above the EU average, the greater need is to raise productivity (giving room for real wage levels to rise).

There is evidence that progress is being made in achieving these different objectives. Productivity growth in Portugal, at over 3% a year, was the second highest in the EU (after Ireland) between 1986 and 1996, and employment growth in Spain, at almost 1½% a year was also among the highest in the EU. In-



Map 22 GDP per head, productivity and employment, 1996



GDP per head (PPS)

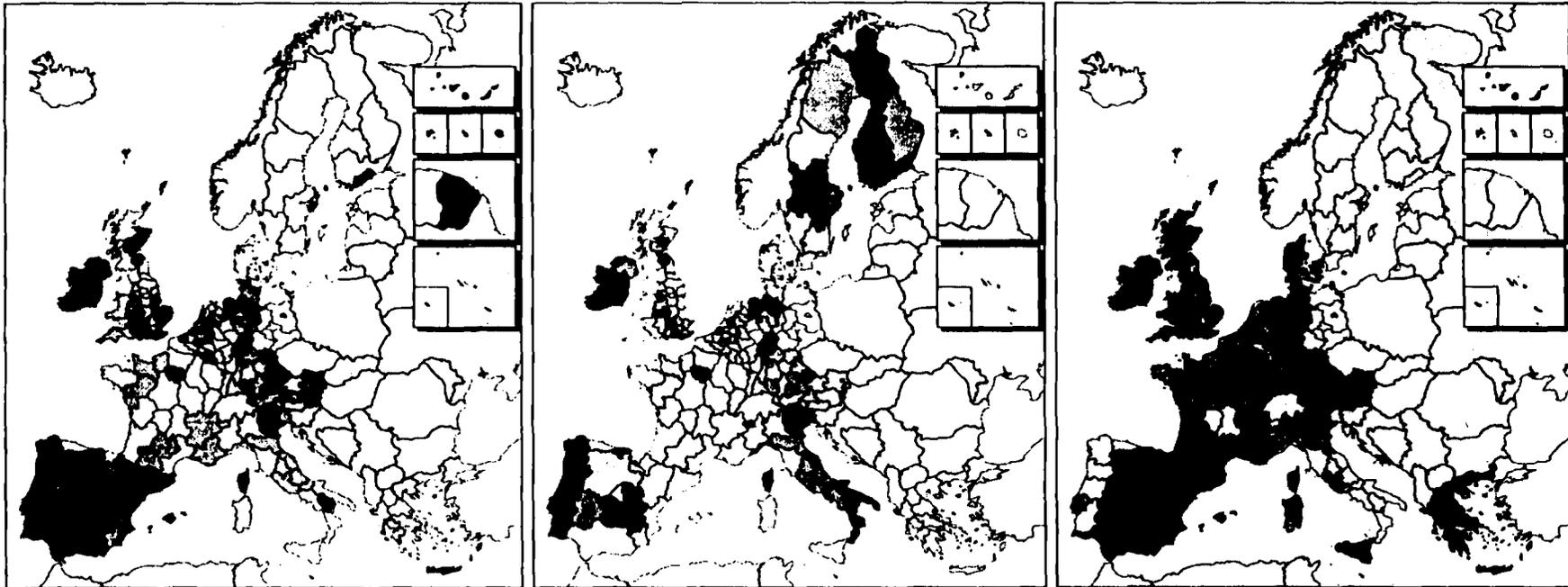
GDP per person employed

Employment rate

<p>Index, EUR15=100</p> <ul style="list-style-type: none"> <li> &lt; 75</li> <li> 75 - 90</li> <li> 90 - 110</li> <li> 110 - 125</li> <li> ≥ 125</li> <li> No data</li> </ul> <p>Standard deviation = 26.9 F(DOM): 1994 Source: Eurostat</p>	<p>Index, EUR15 = 100</p> <ul style="list-style-type: none"> <li> &lt; 85.75</li> <li> 85.75 - 95.25</li> <li> 95.25 - 104.75</li> <li> 104.75 - 114.25</li> <li> ≥ 114.25</li> <li> No data</li> </ul> <p>Standard deviation = 18.9 Employed by place of work Source: Eurostat, DGXVI estimates</p>	<p>% of population 15-64</p> <ul style="list-style-type: none"> <li> &lt; 53.55</li> <li> 53.55 - 58.25</li> <li> 58.25 - 62.95</li> <li> 62.95 - 67.65</li> <li> ≥ 67.65</li> <li> No data</li> </ul> <p>EUR15 = 60.6 Standard deviation = 9.3 Employed by place of residence Source: Eurostat</p>
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0 250 1250 km

Map 23 GDP, productivity and employment growth, 1986-96



GDP growth

Growth of GDP per person employed

Employment growth

Annual average % change		Annual average % change		Annual average % change	
< 1.5	EUR15 = 2.1	< 1.20	EUR15 = 1.8	< -0.2	EUR15 = 0.4
1.5 - 1.9	Standard deviation = 0.8	1.20 - 1.60	Standard deviation = 0.8+	-0.2 - 0.2	Standard deviation = 0.7
1.9 - 2.3	D: excluding new Länder	1.60 - 2.00	EL, A: national level	0.2 - 0.6	EL, A: national level
2.3 - 2.7	F(DOM): 1986-94	2.00 - 2.40	Source: Eurostat, DGXVI estimates	0.6 - 1.0	Source: Eurostat, DGXVI estimates
≥ 2.7	Source: Eurostat	≥ 2.40		≥ 1.0	
No data		No data		No data	

0 250 1250 km

deed, in some Eastern regions and in the capital, Madrid, growth was 2–2½% a year (Map 23). Nevertheless, given the scale of the gap which exists in both cases, convergence towards the EU average is inevitably a long-term process.

For regions in Greece, the picture is less favourable. Both productivity and employment levels are low and there is little evidence of catching up to the EU average in either case. The level of productivity in the rural and mountainous interior is typically only around 60% of the EU average — the lowest in the EU along with some regions in Portugal. Unlike in Portugal, however, productivity growth has also been low — 1% a year between 1986 and 1996, almost half the EU average rate, and so the gap has widened rather than closed.

The number employed, moreover, is not much more than half of working-age population in many regions (the figure for the country as a whole is only around 57%). Employment growth, however, at around 0.7% a year, was slightly above the EU average between 1986 and 1996. So although there was some convergence towards the EU level over this period, a high proportion of jobs remain in weaker sectors, and this plus the low growth of productivity could jeopardise future job growth.

In Ireland, both components of GDP per head have performed strongly. High growth in productivity (over 4% a year between 1986 and 1996, by far the highest rate in the EU, except in a few Portuguese regions), along with even higher growth in output, has begun to be translated into significant rates of net job creation (which averaged 2% a year over the period and 3% a year over the last 5 years). As a result, GDP per person employed in Ireland has increased to above the EU average and the gap in the employment rate is narrowing rapidly (in 1997, employment was 58% of working-age population, only slightly less than the EU average).

Southern Italy is similar to Spain, in the sense that low GDP per head is mainly attributable to a low level of employment. GDP per person employed is typically around 90% of the EU average (although in Calabria, it is exceptionally low at just over 80%) while employment is generally only around 40% of working-age population, lower than anywhere else in the Union.

Unlike in Spain, there is no sign of this problem being corrected. While productivity growth has been relatively high, ranging from just under 2% (Sicilia) to over 3% (Basilicata) over the period 1986 to 1996, employment actually fell in all regions of Southern Italy, by around 1% a year in most cases. Employment also declined in Italy as a whole, whereas the growth of productivity was slightly above the EU average, so that while levels of productivity and employment are much lower in the South than in the rest of the country, the pattern of change has not been so different.

The low level of GDP per head in the new German Länder is entirely due to low productivity. While employment rates (partly because of high female participation rates, as noted above) are a little above the EU average in most regions (typically around 62–63%), output per person employed is in most cases only some 60% or less of the EU average. Although there are no data for the period 1986 to 1996 as a whole, the recent trend seems to be for the initially strong productivity growth after unification to weaken and for employment rates to stabilise.

Employment rates in regions in the North and East of Finland have traditionally been high. However, the slump in the early 1990s largely fell on employment, leaving productivity growth unaffected or even a little higher as industry restructured. In the worst affected region, Ita-Suomi, productivity growth — at 2% a year over the period 1986 to 1996 — has been similar to the EU average, but employment has fallen by 2% a year. It is now only around 55% of working-age population, less than the EU average and more typical of a Mediterranean than a Nordic region.

The next section examines the factors underlying these differences in the components of GDP per head

### **Explaining competitiveness: common features of successful regions**

In recent years, the issue of competitiveness has attracted a lot of attention and has been the subject of many studies. These, however, have tended to concentrate on countries rather than regions, and many of the indicators used are not statistically robust. Moreover, in many cases, the link between these indi-

cators and competitiveness is either assumed or, where it is analysed, so many indicators are included, often of a non-quantifiable kind, that the underlying relationship is not transparent.

A study performed for the Commission<sup>5</sup> and further work undertaken within the Commission represent first steps towards filling this gap. The aim has been to reduce the issue to the most basic but important elements, by constructing a simple model of the relationship between GDP per head by region and the most significant features contributing to this. The approach followed was, first, to identify the main factors in the literature thought to explain variations in GDP per head between regions; secondly, to construct for each of these a simple, but statistically robust and observable, indicator to represent it; and, thirdly, to correlate variations between these indicators across regions with variations in GDP per head as well as GDP per person employed.

Four factors emerged as being closely linked with regional differences in the GDP measures:

- the structure of economic activity, which for this purpose was simply represented as the division of employment between agriculture, manufacturing, construction, market services and non-market services, the regions with the highest levels of GDP per head tending to have a relatively high concentration of employment in market services and/or manufacturing;
- the extent of innovative activity, which was measured by the number of patent applications, the best performing regions tending to be the source of more applications than others;
- regional accessibility, which was measured by a new index of peripherality produced for DGXVI, which implicitly includes the effects of variations in transport infrastructure,<sup>6</sup> the regions where GDP per head is above average tending to have better accessibility;
- the skills of the work force, which were measured by the relative numbers of people aged 25 to 59 with high (university level or equivalent), medium (upper secondary level qualifications) and low (basic schooling only) levels of education, the best performing regions tending to have an

above average proportion of relatively highly qualified workers.

These four indicators, in a statistical sense, 'explain' almost two-thirds of the variation in GDP per head between regions in the EU, in the sense that on average around 65% of this variation is associated with differences in the factors represented (this being estimated using a simple linear regression equation).

This result, however, needs to be interpreted with a good deal of caution. In the first place, the association is only an average one and there are many regions which diverge from the average in, for example, having a relatively high level of GDP per head whilst having relatively low values for one or more of the indicators.

This, in part, reflects the relatively simple nature of the indicators themselves. In particular, regional differences in the composition of market services or of manufacturing — the extent to which activity is concentrated in advanced, high value-added sectors as opposed to more basic, low value-added sectors — may be at least as important as differences in the division of employment between broad sectors. Similarly, the innovative capacity of a region is only indirectly measured by the number of patents applied for, which may bear little relationship to the number of new products developed or the improvements made to the production process and which, in any event, is likely to be biased towards manufacturing and understate innovation in services. Moreover, education attainment levels measure the formal qualifications of the work force and may not reflect the skills acquired through less formal means, such as through learning by doing.

Secondly, the average relationship as such says nothing about the direction of causation. Increases in GDP per head may themselves give rise to changes in the structure of economic activity, as, for instance, the demand for market services expands with higher income, or to greater demand for education, as young people have more opportunity to study for longer. Equally, improvements in transport systems, and therefore in accessibility, may be a consequence of higher levels of GDP per head as well as a contributing factor, while increased innovative capacity may similarly result indirectly from the improved higher education system associated with real income growth.

Thirdly, the factors themselves are not only interrelated but may not have the same effect in isolation of each other. An improvement in the transport system and a resulting increase in accessibility, for example, may do little to accelerate regional development if it is not accompanied by improvements in other features. Indeed, as is evident from experience, it may well be that these and other features have to co-exist, or operate in combination, for the effect on regional development to be significant and long-lasting. In particular, it is difficult to envisage a high level of innovation in a region without a highly qualified work force or shifts in the structure of economic activity towards high value-added market services without the requisite skills existing in the labour force or without a minimum level of accessibility. Similarly, the investment in transport systems necessary to improve access is itself likely to require a level of economic activity which ensures an adequate return within a reasonable period of time.

Fourthly, and perhaps most importantly, the factors included in the analysis are ones that lend themselves to being measured. Although each of them would clearly be expected to have an important influence on regional performance both from a theoretical perspective and from detailed case studies that have been conducted over the years, there are other, less tangible, factors which are much less easily measured which might be equally if not more significant. These include, in particular, institutional features, such as the efficiency of the regional and local administration, the business support services which exist and the social infrastructure which is in place.

The relative importance of these factors, it should be emphasised, is not only reflected in the 35% of the variation in GDP per head between regions which is not statistically explained by the four indicators included in the analysis. It equally underlies the variation in these four indicators themselves. The structure of economic activity, for example, is unlikely to shift significantly towards market services unless the institutional structure is in place to support this and to attract new business investment in this area.

At the same time, although the analysis may give an indication of the changes which need to take place in particular regions if they are to achieve a higher level of GDP per head, it is only one step towards defining the most effective policies to implement in order to further regional development. The fact that a shift of

employment towards market services tends to be associated with higher levels of GDP per head does not in itself say anything about how such a shift should be brought about and whether, indeed, it is possible to bring about in the absence of parallel changes in, for example, accessibility, the skills of the regional work force or the efficiency of administrative institutions and support services.

Although a successful regional development path must almost certainly involve simultaneous changes in a wide range of factors, it is informative to examine differences across the Union in the four factors identified above and the extent to which they are associated with high or low levels of GDP per head in different regions. In what follows, each of these factors is considered in turn, in terms of the potential contribution to reducing regional disparities in GDP per head which might be made by eliminating the differences in their value which exist between regions. This is based, it should be emphasised, on the average relationship referred to above between the indicators used to measure the factors and GDP per head. Accordingly, as should be clear from the discussion of the nature of this relationship, the results should be regarded as indicative only.

## Scenarios

The above analysis provides an estimate of the change in regional competitiveness that might be associated with a given change in one of the underlying factors. The following four scenarios indicate in what way the regional distribution of GDP per head might change if regional disparities in each of the four underlying factors were eliminated, ie if regional values of the indicator all converged on the EU average. A fifth scenario outlines what might happen if all four factors were equalised. This is subject to all the caveats outlined above, and so should not be taken as a definitive prediction for each region. It is more an exploration of some of the changes that might need to be made to enable lagging regions to converge and highlights factors of particular interest for a given region.

Variations in the structure of economic activity are more closely associated with differences in GDP per head between regions than any of the other factors identified. This reflects the importance of employ-

ment being concentrated in high value-added sectors for overall productivity and job creation. Market services, on average, have twice the level of value-added per person employed than agriculture and are expanding in terms of employment rather than contracting. Manufacturing, on the other hand, which is also relatively concentrated in regions with above average GDP per head, is characterised by high and rising productivity but declining employment (which fell by 10% in the Union between 1986 and 1996). At the same time, productivity growth in manufacturing may be important in generating increases in real income to support job creation in services.

The most striking features of eliminating differences in the structure of economic activity between regions are (Map 24):

- regional disparities in GDP per head would be reduced significantly and the number of people living in regions with GDP per head of 75% or less of the EU average (the strict definition of those eligible for Objective 1 support under the Structural Funds) would fall by more than half to under 10% of the total population of the EU (according to the average relationship, GDP per head in any region could rise by ½–1% for every 1 percentage point shift from agriculture to manufacturing and by over 1% for a similar shift to market services);
- in the new Länder in Eastern Germany; employment in construction and manufacturing is well above the EU average and that in market services well below (Map 25), suggesting that a shift in the structure of activity to be more similar to that in the rest of the EU might increase GDP per head considerably (by 20–25% according to the average relationship, more than half the present gap between these regions and the EU average);
- in Portugal, Spain and Southern Italy, GDP per head could also be raised by a shift in the structure of activity, though here, there tends to be over-dependence on agriculture (which accounts for as much as 20% of total employment in some regions), as well as a low level of employment in market services; the main exceptions are the capital cities, Cataluña and País Vasco, which, as service and (in some cases) manufacturing centres, have higher employment in one or other of these sectors than the EU average, and

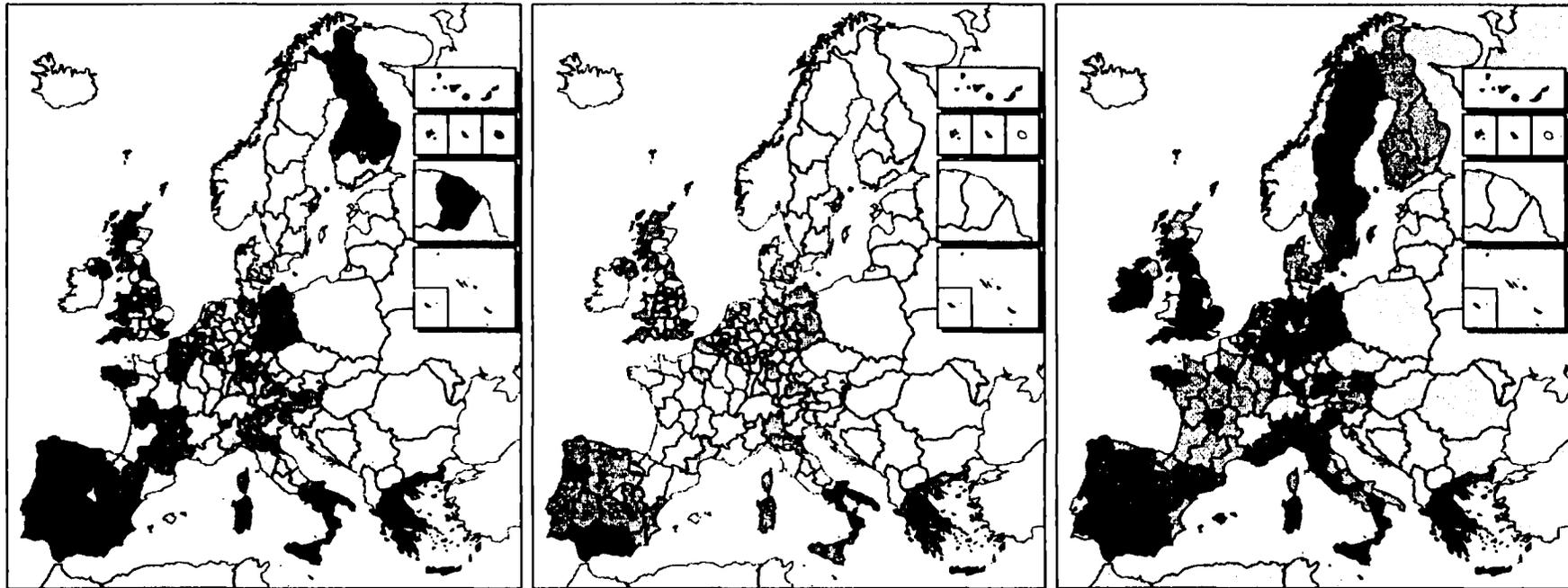
some tourist areas, which also have relatively high employment in services;

- in Ireland, the position is similar, with low employment in market services and a high proportion in agriculture, though the difference from the EU average is less pronounced as result of the modernisation effort of recent years;
- in Greece, most regions are highly dependent on agriculture (which accounts for over 40% of employment in some cases), but also have low employment in manufacturing (10% or less) and (according to the average relationship) the potential gain to GDP per head from shifting to the EU average structure of activity is as large as in the new German Länder; this, however, does not apply to Athens, which already has high employment in market services;
- the high employment in market services in the Southern parts of the UK, Netherlands and Ile de France contributes significantly to their relatively high GDP per head, as does high employment in manufacturing in many regions in Western Germany and Northern Italy;
- in Finland, a shift in the structure of activity to the EU average is unlikely to have much effect on GDP per head; in contrast, in Sweden, it could have a substantial effect since most regions are exceptionally dependent on non-market services, which generally account for 40–45% of employment, nearly twice the EU average; conversely the share of employment in market services is well below average (typically 20–25% as against an EU average of 45%).

Innovative capacity is generally recognised as a key factor in regional development, though, as noted above, the indicator used here of the number of patent applications is likely only partly to capture variations in regional capacity. Moreover, it also leaves out of account technology transfer, which may be just as important (for details, see the section below on RTD).

Eliminating differences in the level of innovation, as measured here, would have the following effects on the basis of the average relationship with GDP per head (Map 26):

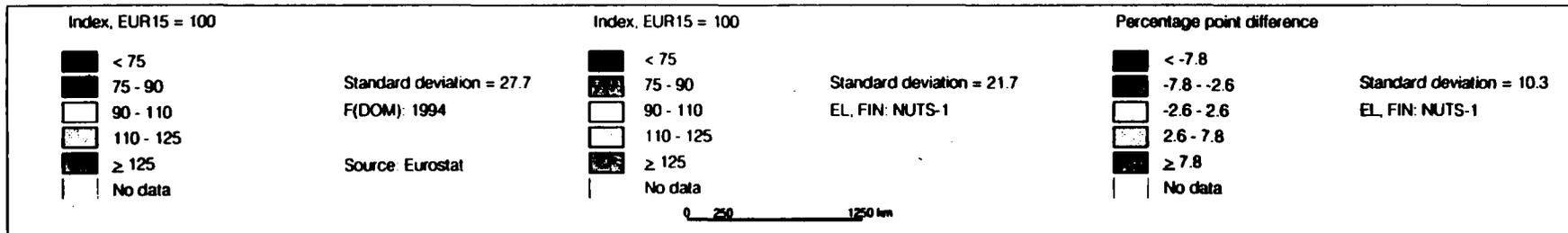
**Map 24 GDP per head: the effect of differences in industrial structure across regions, 1995**



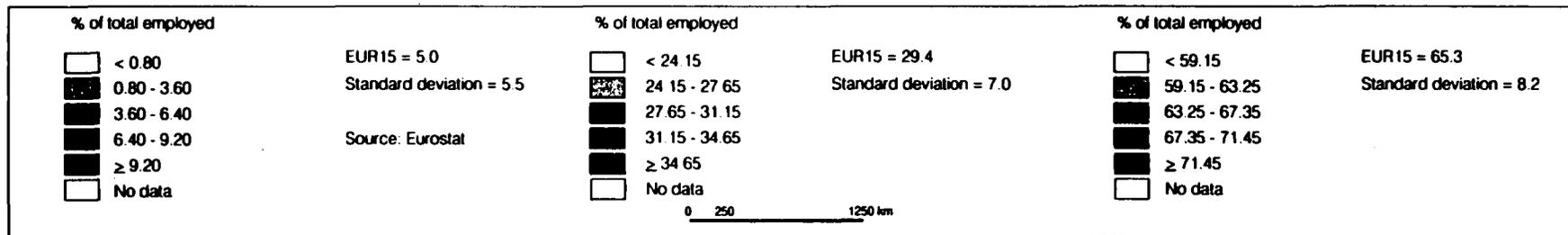
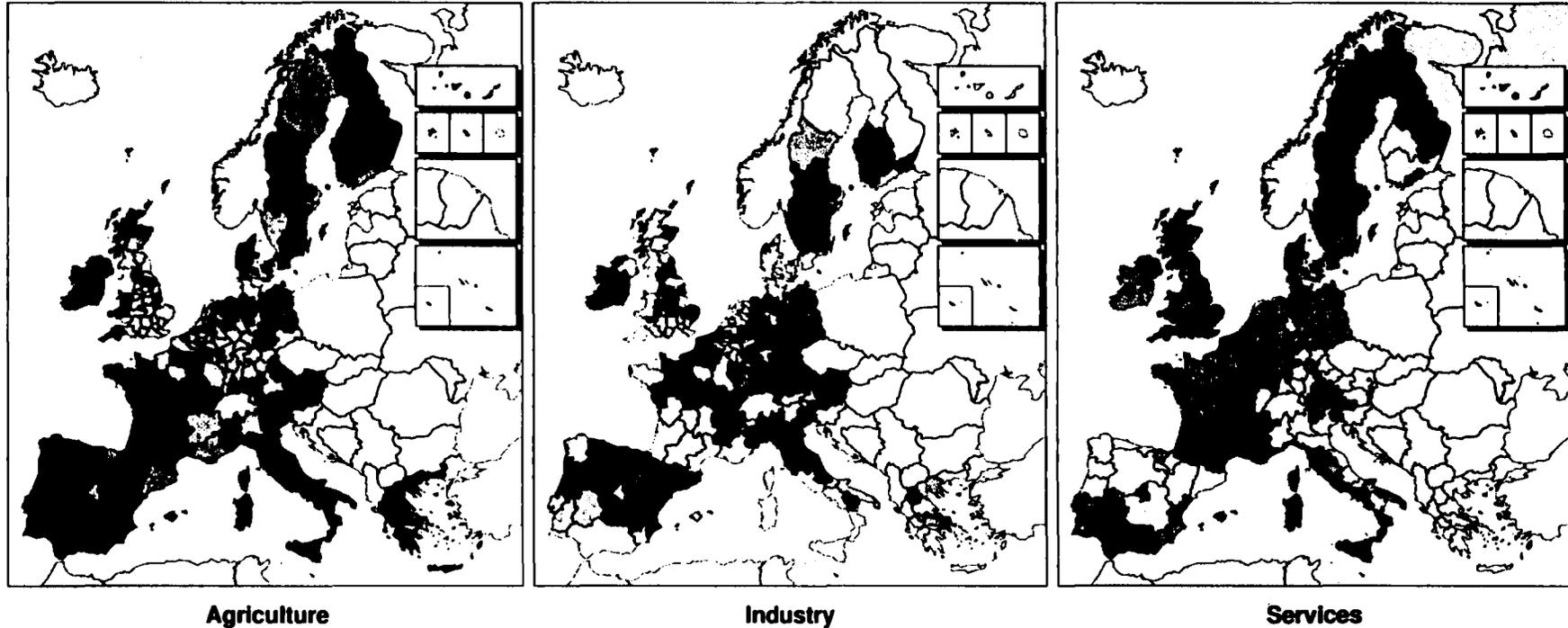
**Actual GDP per head (PPS)**

**Adjusted to equalise industrial structure**

**Difference between adjusted and actual**



Map 25 Employment by sector, 1997



- disparities between regions in GDP per head would be reduced markedly and the number of people living in regions with GDP per head of 75% or less of the EU average would fall to under 15%, somewhat less than in the case of equalising the structure of activity;
- the effect would be greatest in Portugal, Spain, Greece and parts of Southern Italy, where the number of patent applications (and innovation levels) are particularly low (raising GDP per head by 8–9%, according to the average relationship);
- the effect would be less in the new German Länder and Ireland (raising GDP per head by around 5% according to the average relationship), indicating that the main problems in these regions lie elsewhere;
- both Northern Italy and Southern England, which have relatively high GDP per head have relatively low levels of innovation according to this measure, which reflects the deficiencies in the measure noted above rather than genuinely low innovative capacity.

The indicator of accessibility is a combination of travel times and market size. It measures the ease of transporting the goods and services produced in a region to markets and implicitly incorporates much of the effect of the quality of transport infrastructure. Although accessibility is unquestionably an important factor in regional development, the evidence suggests that more of its effect on GDP per head is through other factors, especially the structure of economic activity.

The main features of eliminating differences in accessibility, excluding the indirect and longer-term effects, are (Map 27):

- to reduce the population in regions with GDP per head of 75% or less of the EU average to just over 15% of the total in the Union, given the average relationship between accessibility and GDP per head;
- to increase GDP per head in Finland and Northern Sweden, reflecting the handicap that regions in these parts of the EU face as a result of their re-

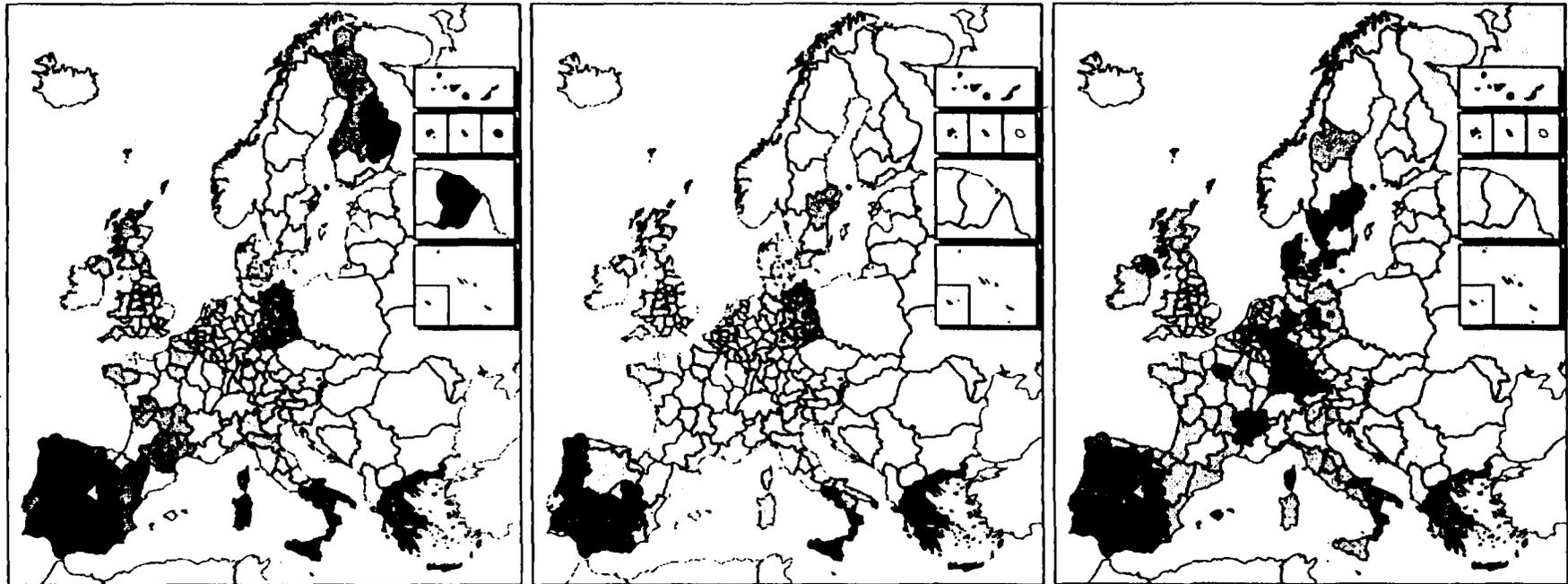
moteness from more populous parts of the Union and the relatively small size of their local markets;

- to raise GDP per head in Scotland and Ireland significantly, except in Aberdeen, where earnings from oil are little affected by its peripheral location;
- to increase GDP per head in Objective 1 regions in the South of the Union, though only to a small extent in relation to the gap with the rest of the EU, suggesting their main problem is not accessibility alone;
- to change GDP per head in the new German Länder hardly at all, reflecting the fact that their problems have little to do with accessibility.

The indicator for the skills of the regional work force, the broad level of educational attainment, is closely associated with the structure of economic activity — market services, especially the higher value-added sectors, tending to employ relatively highly-educated people — and the level of innovation. Accordingly, variations in education level seem to contribute comparatively little to regional differences in GDP per head, independently of these two factors. The results of eliminating such variations while assuming other factors remain the same are, therefore (Map 28):

- to reduce disparities between regions only slightly and to change the share of EU population in regions with GDP per head of 75% or less than the EU average by very little, though this may reflect the relatively simple nature of the indicator and its non-inclusion of informal knowledge, as well as the indirect mechanisms involved;
- to highlight the major differences in education levels which still exist between Germany (East and West), the Netherlands, Denmark and Sweden, where the work force is highly qualified, and Portugal, Spain and Greece (outside Athens), where labour force qualifications are much lower and where, despite the improvements made in recent years, it will take a long time to close the gap;
- to illustrate the potential importance of informal education as well as formal qualifications since in some regions with strong economic performance and an evidently high degree of competitiveness,

**Map 26 GDP per head: the effect of differences in innovation across regions, 1995**



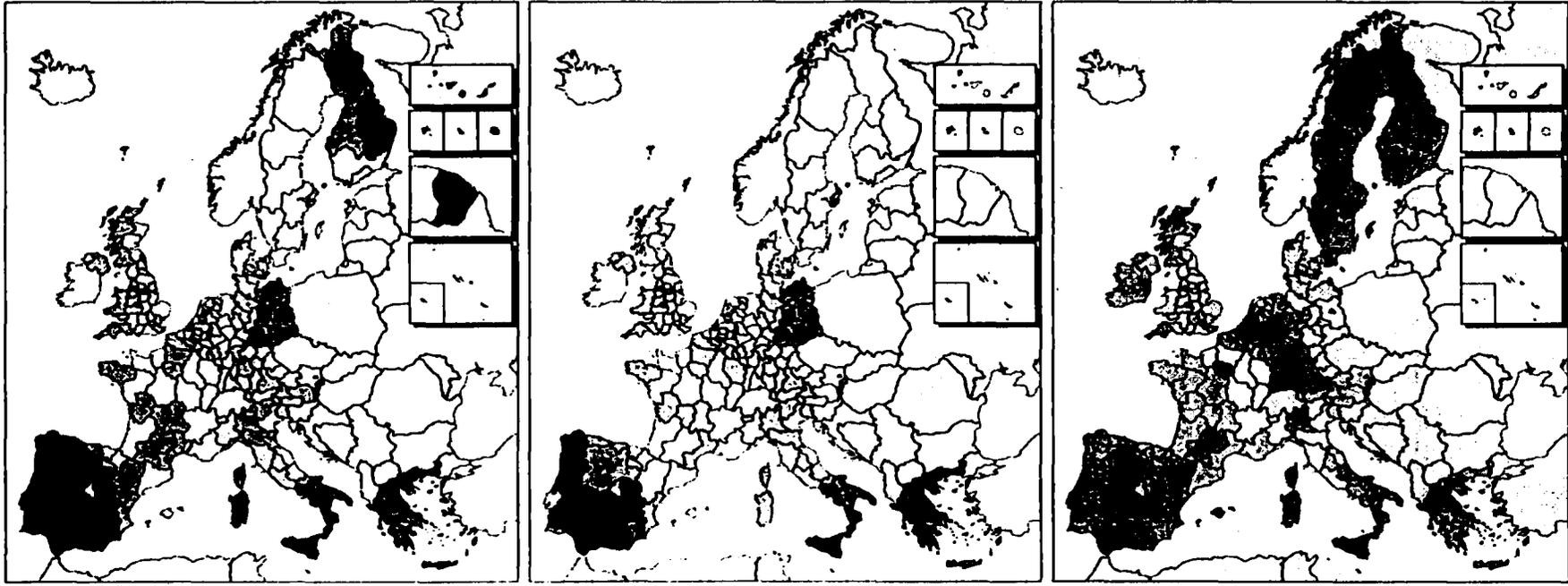
**Actual GDP per head (PPS)**

**Adjusted to equalise Innovation**

**Difference between adjusted and actual**

<p>Index, EUR15 = 100</p> <ul style="list-style-type: none"> <li> &lt; 75</li> <li> 75 - 90</li> <li> 90 - 110</li> <li> 110 - 125</li> <li> ≥ 125</li> <li> No data</li> </ul> <p>Standard deviation = 27.7 F(DOM): 1994 Source: Eurostat</p>	<p>Index, EUR15 = 100</p> <ul style="list-style-type: none"> <li> &lt; 75</li> <li> 75 - 90</li> <li> 90 - 110</li> <li> 110 - 125</li> <li> ≥ 125</li> <li> No data</li> </ul> <p>Standard deviation = 21.7 FIN: NUTS-1</p>	<p>Percentage point difference</p> <ul style="list-style-type: none"> <li> &lt; -7.8</li> <li> -7.8 - -2.6</li> <li> -2.6 - 2.6</li> <li> 2.6 - 7.8</li> <li> ≥ 7.8</li> <li> No data</li> </ul> <p>Standard deviation = 10.5 FIN: NUTS-1</p>
<p>0 250 1250 km</p>		

**Map 27 GDP per head: the effect of differences in accessibility across regions, 1995**

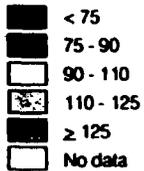


**Actual GDP per head (PPS)**

**Adjusted to equalise accessibility**

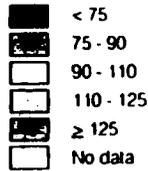
**Difference between adjusted and actual**

Index, EUR15 = 100



Standard deviation = 27.7  
 F(DOM) 1994  
 Source Eurostat

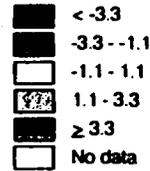
Index, EUR15 = 100



Standard deviation = 24.4  
 FIN NUTS-1

0 250 1250 km

Percentage point difference



Standard deviation = 4.5  
 FIN: NUTS-1

Northern Italy, in particular, the proportion of the work force with a university degree or equivalent is well below average.

The combined effect on GDP per head of eliminating differences across regions in these four factors, according to the simple average relationship (Maps 29 to 31), is:

- to halve regional disparities in the EU to a level similar to those between States in the US and to reduce the population in regions with GDP per head of 75% or less of the EU average to only around 3% of the total (again similar to the figure in the US), with none in the South of the Union outside Greece;
- to leave the gap in GDP per head in the Mediterranean regions where this is especially low at typically 10% of the EU average, even after assuming that the four factors have the same value as in other parts of the Union.

However, the experience of a number of regions which are not disadvantaged at present in terms of these four factors, but which still have relatively low levels of GDP per head, such as Athens, underlines that it cannot necessarily be assumed that all regions would gain in the same way from such changes.

Moreover, as emphasised at the outset, while these four factors might be a significant part of the explanation of the lack of competitiveness of lagging regions, there are other important elements involved. Not least among these are the efficiency of public administration, the effectiveness of support services and other aspects of the institutional structure of a region which are likely to have a major influence on its development and which create a favourable environment for desirable changes in the factors identified to occur.

The informal networks in Northern Italy, for example, may well be an important part of the explanation behind the exceptionally strong performance in the region, just as poor endowment in social capital and ineffective public administration may be significant factors underlying the poor performance in parts of Greece, Southern Spain and the South of Italy.

## Conclusions

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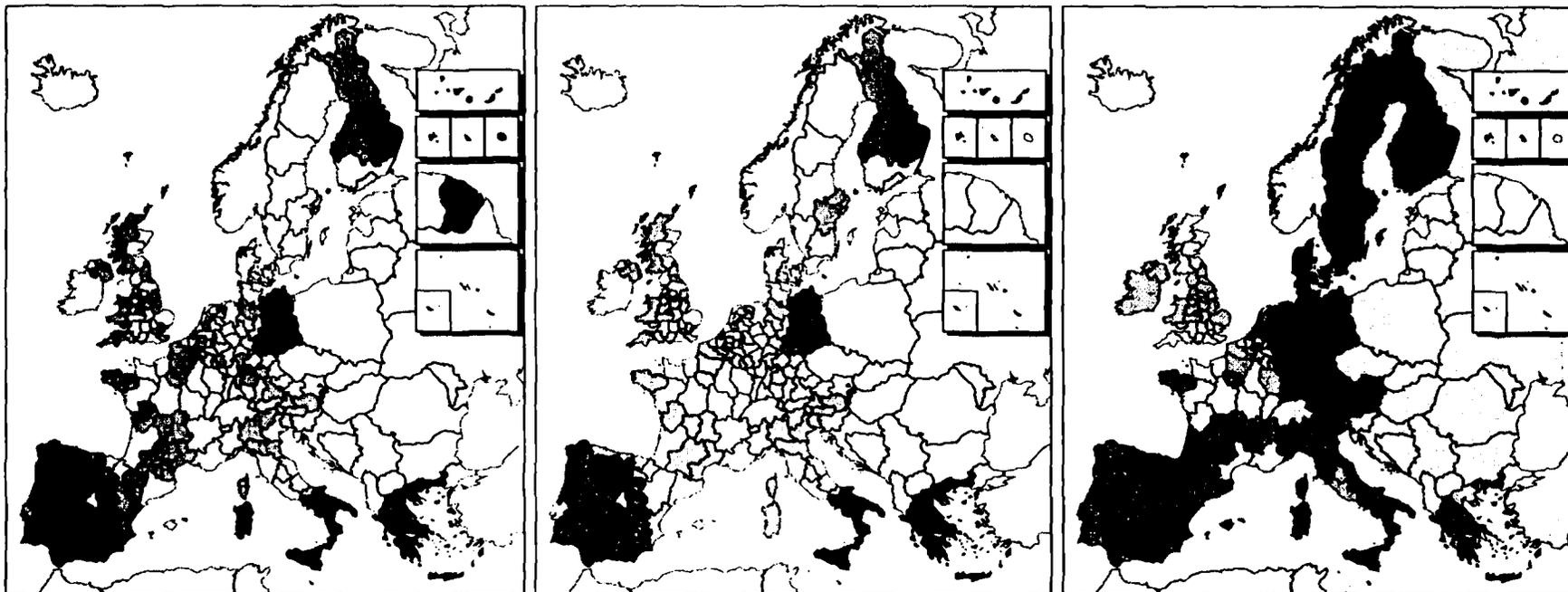
For each of the two aspects of competitiveness identified here, productivity and employment, which together determine GDP per head, the level in the US is around 20% higher than that in the EU. In terms of productivity, the level in some regions in Southern Germany, Austria and Northern Italy is similar to that in the US, while in terms of employment, the level is as high as in the US, or higher, in relation to working-age population in Denmark and parts of Sweden. Nevertheless, there is scope for improvement in one or the other (or in many cases, both) of these aspects in most regions in the EU.

In terms of growth, the EU has performed better than the US as regards productivity and much worse as regards employment. While growth of GDP in the EU over the past decade and more has been only slightly less than in the US, employment growth has been substantially lower at only around ½% a year or less, hardly enough to keep pace with new entrants to the labour market. This points to a need not only to increase the long-term growth of GDP to generate a higher increase in employment but also to ensure that growth is translated into more jobs, through increased flexibility in the labour market (to facilitate shifts of employment to growing sectors, notably market services), structural policies to reduce long-term unemployment and measures to improve the skills of the work force so that labour demand finds an outlet.

The challenge to remain competitive in today's fast-changing world falls on all parts of the EU, but the lagging regions face the double challenge of catching up with the present as well as adapting to the future. The nature of the challenge, however, varies across regions:

- in Ireland and regions in Spain and Southern Italy, productivity is close to (or in the case of Ireland, above) the EU average, implying that the main challenge at present is to raise the level of employment. This is especially true for Spain, where unemployment is high, and in Southern Italy, where employment has fallen rather than risen over the past decade;
- conversely, Portugal and Eastern Germany have relatively high employment rates and the main

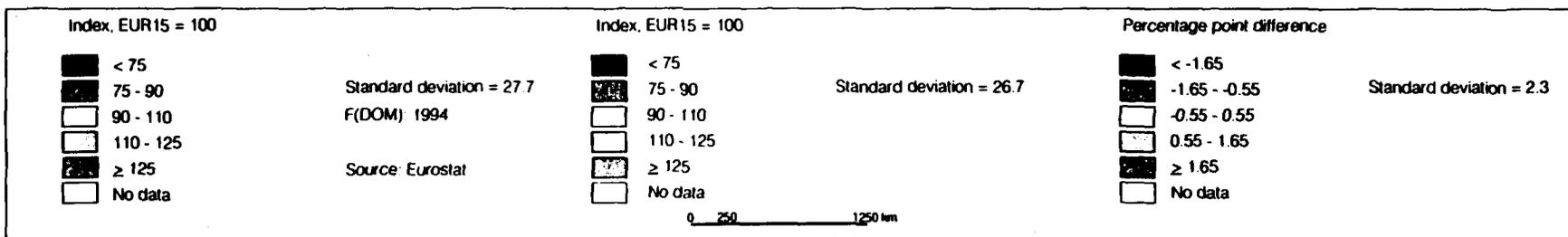
**Map 28 GDP per head: the effect of differences in educational attainment across regions, 1995**



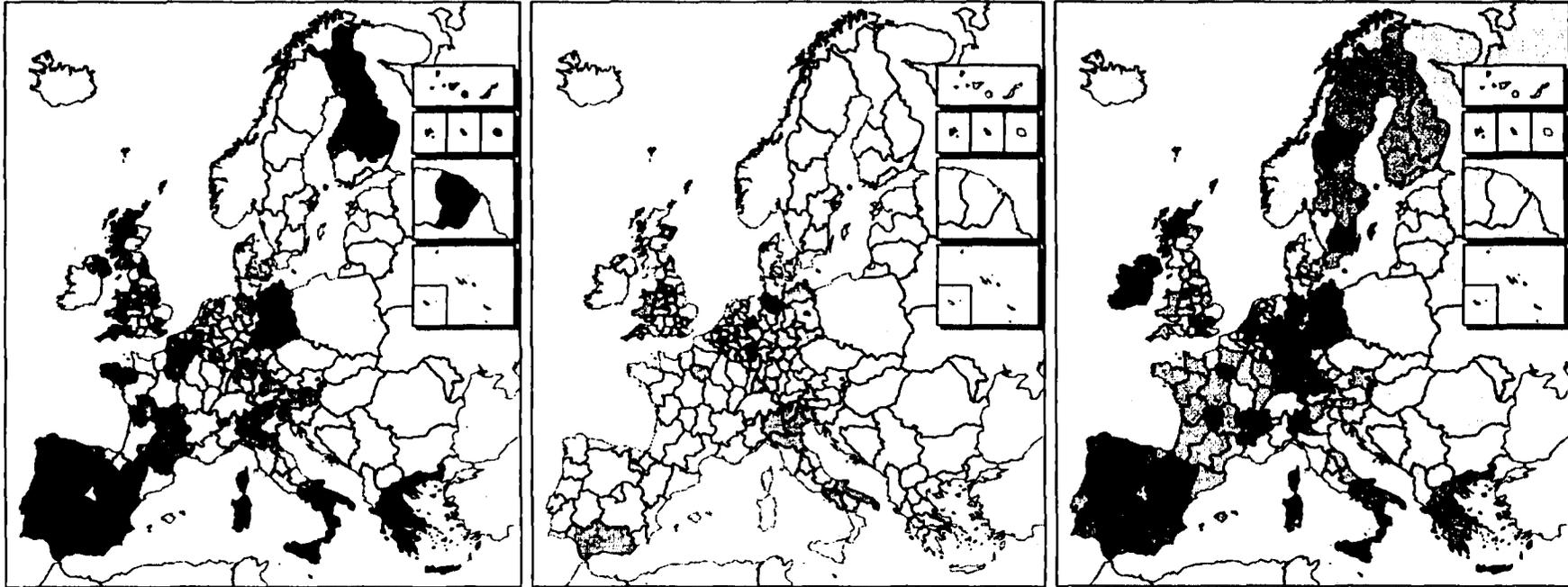
**Actual GDP per head (PPS)**

**Adjusted to equalise educational attainment**

**Difference between adjusted and actual**



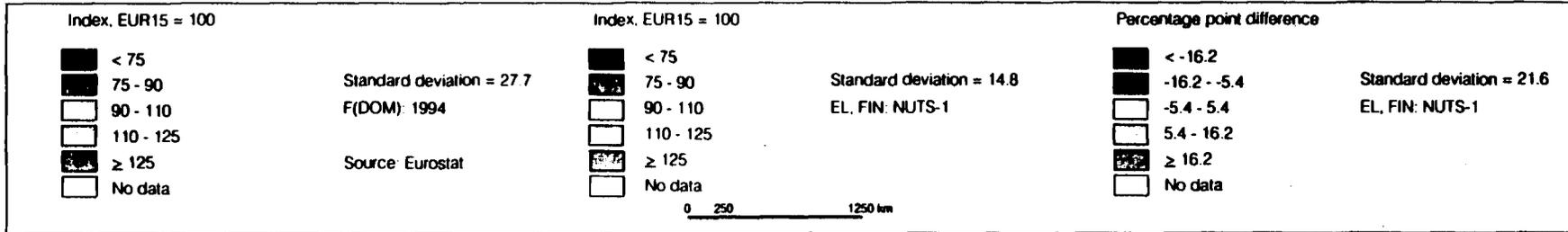
**Map 29 GDP per head: the effect of differences in the four key factors across regions, 1995**

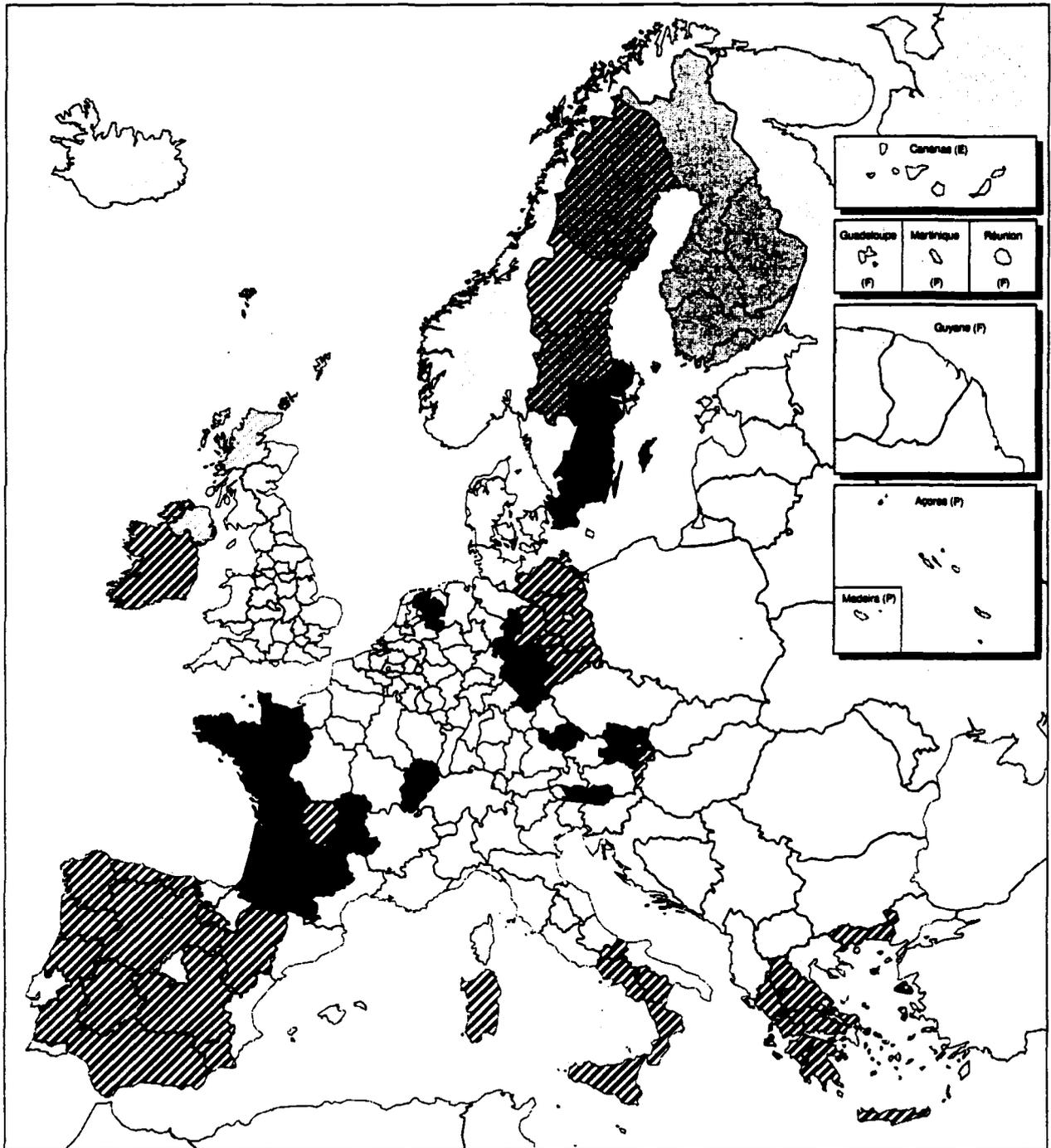


**Actual GDP per head (PPS)**

**Adjusted to equalise four key factors**

**Difference between adjusted and actual**





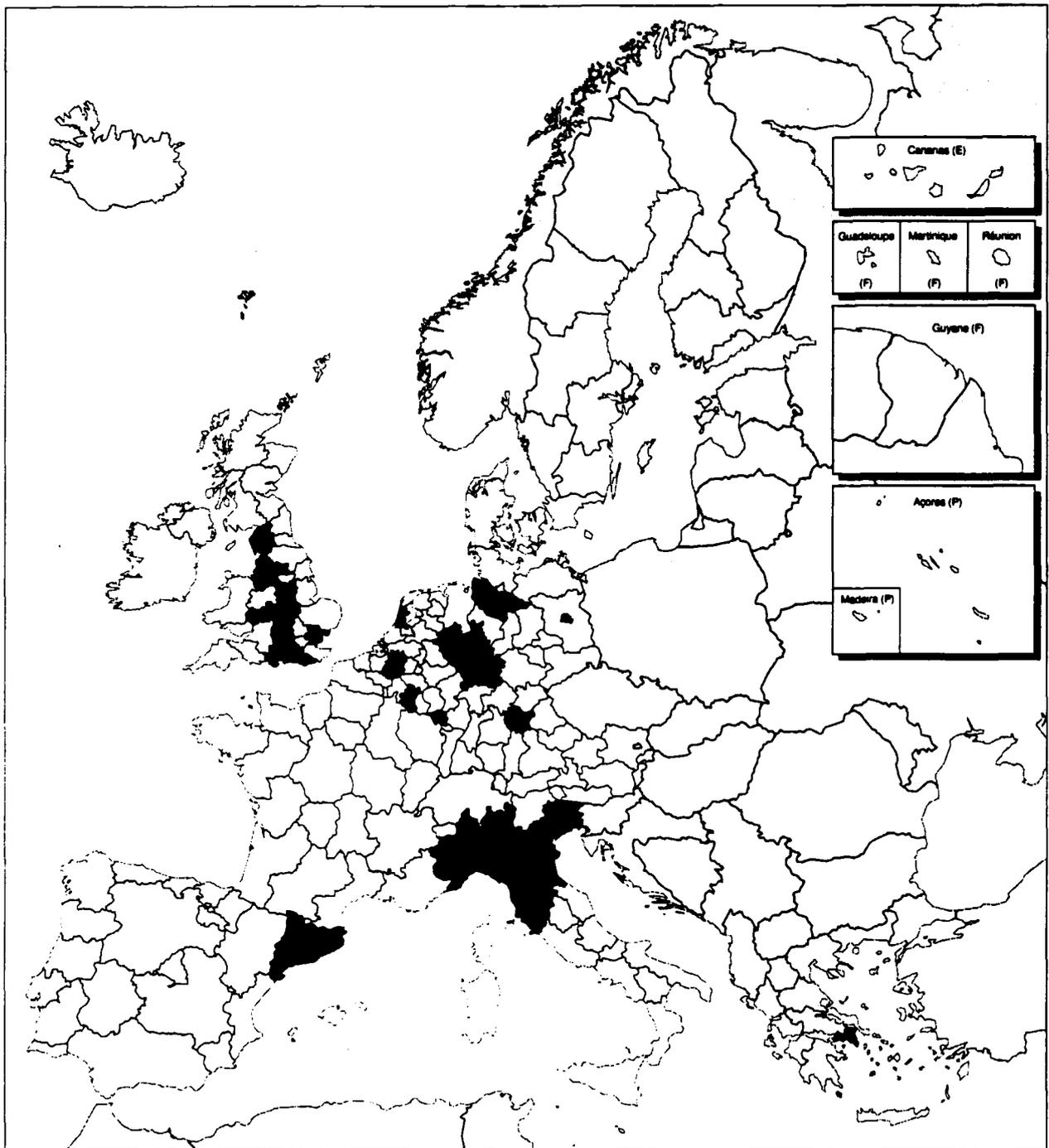
**Map 30 Greatest weaknesses of NUTS-2 regions, 1995**

Main factors

-  Accessibility
-  Innovation
-  Industrial structure

Threshold of minimum 5 percentage points difference from average for each factor (weighted factors)

0 100 500 km



**Map 31 Greatest strength of NUTS-2 regions, 1995**

Main factors

- Accessibility
- Innovation
- Industrial structure

Threshold of minimum 5 percentage points difference from average for each factor (weighted factors)

0 100 500 km

gap with the rest of the EU is in terms of productivity which is substantially below the EU average;

- in Greece, the challenge is the toughest of all, both to raise productivity significantly and to increase the number in employment.

Regional competitiveness is closely associated with four main factors: the structure of economic activity, the level of innovation, the degree of accessibility and the education attainment level of the work force. These factors are strongly interrelated and, moreover, reflect the effect of differences in less easily measurable features, notably the efficiency of regional institutions, especially public administration and the business and other support services available. Nevertheless, examining differences in the four factors across the Union enables a rough diagnosis to be made of some of the main proximate causes of variations in regional competitiveness.

For lagging regions in general, an unfavourable structure of economic activity seems to be a major problem, as does the low level of innovation, which suggests that improving the economic base in lagging regions should be an essential element in any development strategy. Accessibility and the educational qualifications of the work force are also important, though in part their influence on competitiveness tends to be indirect, working through other factors, such as the structure of activity or the level of innovation. There are exceptions, however, where the lack of accessibility is significant in its own right, such as the more remote parts of Finland and Ireland.

The association between these four factors and GDP per head across the Union suggests that if differences in their value between regions were eliminated, regional disparities in output would be reduced to around half of their current level. Regions where GDP per head was 75% or less of the EU average would cover only 3% of the EU population and would be

found in areas of the North of the Union undergoing restructuring as well as in less developed parts of the South. Nevertheless, on the one hand, significant residual differences in competitiveness would remain and, on the other, to equalise the level of the four factors concerned across the Union is likely to require major changes in other areas as well. This particularly applies to institutional factors, such as the efficiency of public administration and the range of support services available.

The following chapters examine some of these underlying factors in more depth and consider the contribution of the Structural Funds. In the light of the above findings, the focus is not just on infrastructure provision and the skills of the local work force, but also on indicators of the health of the economic base — innovative capacity, foreign direct investment and SMEs — as well as on institutional and social factors.

[1] See, for example, OECD (1996), *Industrial Competitiveness*

[2] For a few regions where commuting is significant, these two components do not exactly determine the relative level of GDP per head, since the number employed in the first term, ie those working in the region, does not correspond to the number employed in the second term, which is those resident in the region. For further information on the two ways of measuring employment, see the methodological annex.

[3] For more on the decomposition of GDP per head into productivity and employment and on the relationship between the two, see European Commission (1997), *The Competitiveness of European Industry*.

[4] See, for example, European Commission (1998), *The Competitiveness of European Industry*.

[5] Cambridge Econometrics (1998), *Regional Competitiveness Indicators*, unpublished study for the Commission.

[6] Andrew Copus, forthcoming.

## 2.2 Research and Technological Development

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### The importance of RTD

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It is generally accepted that the competitiveness of both business enterprises and public institutions in a region is a key factor in its economic development and, therefore, for the maintenance of a high level of employment. Competitiveness in turn is heavily influenced by the ability of companies to innovate, to introduce new products and new techniques in the production process. Innovation can result either from the transfer of technology and know-how from outside the region — or company — or from companies in the region undertaking their own research and technological development (RTD).

In the past, RTD was generally seen as a linear process, starting with basic research, leading to applied research and technological development and culminating in demonstration projects or prototypes. Accordingly, public policy often concentrated on the supply-side, especially on infrastructure, with large-scale investment in major research centres for undertaking basic research. Today the effectiveness of this approach, particularly for the development of less favoured regions, is open to doubt. Policies to support and improve research, innovation, education and training, and so promote an innovation culture, are increasingly centred on the creation of networks, or clusters, to stimulate innovation in SMEs and to ensure the wide dissemination of research results. The aim is to maximise the spillovers from scientific and technological advances and to encourage their incorporation in the production process.

Empirical analysis suggests that growth of RTD output by region (measured by the increase in patents per head of population) is closely correlated with growth of GDP, once extreme cases (regions with

very low patent intensity or very high growth rates) are excluded.<sup>1</sup> It suggests, in addition, that there is also a positive association between growth and the proportion of SMEs in a region which are innovative, when account is taken of regional differences in the level of technology.<sup>2</sup> Although such relationships do not prove that the direction of causality runs from innovation to growth, it provides some support for a policy of encouraging RTD as a means of stimulating economic development. At the same time, not all regions need to be leaders in RTD, or even in technology-intensive industries, to attain high levels of GDP per head. The Balearic Islands in Spain, for example, have the lowest ratio of gross expenditure on RTD (GERD) to GDP of all Spanish regions but the highest level of GDP per head, thanks to a highly successful tourist industry.<sup>3</sup>

### Indicators of RTD activity

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As shown above, despite the fact that disparities in GDP per head across the Union have narrowed significantly over the past 10 ten years, the level in the four Cohesion countries, taken together, remains substantially lower than in the rest of the EU. The gap in GDP per head, however, is much smaller than the gap in technology, measured in terms of the ratio of gross expenditure on RTD (GERD) to GDP. Whereas GERD averaged around 2% of GDP in the Union in 1995, in the four Cohesion countries, it amounted on average to under 1% (Table 20).

At the same time, Ireland needs to be distinguished from the other three countries in this respect. While GERD in Greece, Portugal and Spain ranged from 0.4% of GDP to 0.8%, less than half the EU average, in Ireland, it was 1.4% of GDP, higher than in Italy

(1.0%). In all four countries, as well as in Italy, the technology gap narrowed between 1990 and 1995, though by more in Ireland than elsewhere (from 46% of the EU average to 73%), due to a significant extent to direct investment by large multinationals.

The use of GERD relative to GDP as an indicator, however, implies the acceptance of a linear model of innovation, with expenditure assumed to lead directly, and proportionately, to marketable innovations, including, for example, that devoted to basic research or government laboratories. This, of course, can be far from the truth, as the experience in the former centrally planned economies in Central and Eastern Europe demonstrates. Indeed, the essential challenge is precisely to translate research and development into commercial products. A first approach to improving measurement is to focus on business expenditure on RTD (BERD), again in relation to GDP.

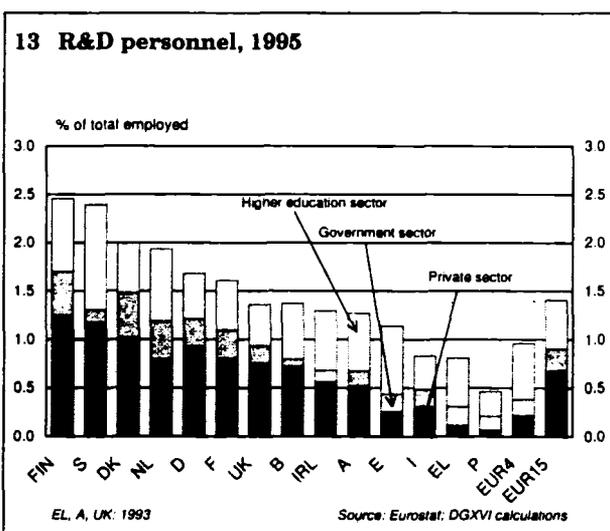
The technology gap, however, is even more pronounced in terms of BERD. Despite a small narrowing of the gap over the preceding 5 years, in 1995, business expenditure on RTD in Portugal and Greece relative to GDP was still only around 10% of the EU average and, in Spain, it had fallen to under a third of the average. Moreover, whereas in the more prosperous Member States, the share of business in total RTD expenditure was above 60%, it was less than half in Spain and only around a quarter in Greece and Portugal. In Ireland, by contrast, partly because of the influence of multinationals, business expenditure was much the same proportion of the total as in other Northern Member States. An essential aim of EU structural policy has to be to increase the involvement

of business in RTD in the Member States with low levels of GDP per head, so helping to improve their competitiveness.

Disparities between Member States are much less pronounced in terms of RTD personnel, though the data for these include not only scientists and engineers but also administrative and other ancillary staff. They also include researchers in universities and other higher education establishments, who account for a major share of the total in all four Cohesion countries and one which has increased by more than elsewhere (Graph 13). Excluding these and others employed in the public sector, the differences across the Union are similar to those for expenditure. Nevertheless, RTD seems to be more capital-intensive, especially in the public sector, in Member States with higher levels of GDP per head than in the Cohesion countries.

While all three indicators reviewed above measure inputs, the main objective is to measure the results of RTD, or the output. A possible indicator of this is the number of patent applications per head of population (what is termed the 'innovation coefficient'). In practice, this indicator differs even more between Member States, the values for Portugal, Greece and Spain being between just 2% and 14% of the Union average, suggesting that the technology gap is even wider in terms of RTD output. It also suggests perhaps that there is a qualitative difference in the RTD undertaken between the Cohesion countries and other Member States, with spending in the latter being focused more on original research leading to new products and processes. The number of patent applications in the Cohesion countries, in other words, is much lower than elsewhere in relation to both RTD personnel and expenditure.

Nevertheless, there are signs of improvement. Between 1989 and 1995, patent applications increased by much more in all four Cohesion countries (by 46% in Portugal, 82% in Greece, 100% in Spain and 150% in Ireland) than in the Union as a whole (12%). It is important to note, in this context, the limitations of the indicator being used, which does not, by any means, capture all innovative activity, not least because process innovation and incremental product innovation often do not result in patent applications. In addition, it is important to bear in mind that companies can innovate and become more competitive through the transfer of technology, possibly by means of direct in-



vestment, without necessarily having to do their own RTD and applying for patents.

It is also worth noting in this regard that the technology gap in the US between States, on all the indicators discussed above, is significantly wider than the gap in the EU (between NUTS-1 or NUTS-2 regions), whereas the gap in GDP per head is much narrower. This could well reflect an easier flow of technology and know-how in the US than in the EU and a freer and more rapid dissemination of knowledge, as well as larger scale flows of investment between one part of the country and another. If this is the case, the importance for spatially balanced economic development of a more even spread of innovative capacity would be less in the US than in Europe.

### Regional analysis

Disparities in RTD across the Union are even wider once account is taken of regional variations within Member States. These are substantial both in the Cohesion countries and elsewhere. RTD expenditure and employment are very much concentrated in the South and South-West of Germany, Flanders in Belgium, the Netherlands, South-East England and Ile de France as well as, to a lesser extent, the South-East of France and the North-West of Italy (Maps 32 and 33).<sup>4</sup> These regions represent the 'islands of innovation' identified in the Archipelago study and the 'star regions' identified by the Commission in a multi-dimensional analysis.<sup>5</sup>

Patent applications are similarly concentrated in comparatively few regions (Map 34), each being active in different areas of technology. Indeed, in 5 Member States (France, the Netherlands, Austria, the UK, and to a lesser extent, but increasingly, Spain), one or two regions are dominant in terms of patent intensity. In Belgium, Germany and Italy, on the other hand, there is a larger number of patent-intensive regions, while in Greece and Portugal, there is no significant patent activity in any region.<sup>6</sup> While in the Northern regions, RTD is mainly undertaken by private business and is therefore largely demand driven, in the Southern regions, mainly those where the capital city is located, there is much greater public sector involvement. Moreover, there also tends to be less transfer of knowledge between the public and the private sectors, as well as between companies

within the private sector, and poor linkages to international RTD networks.

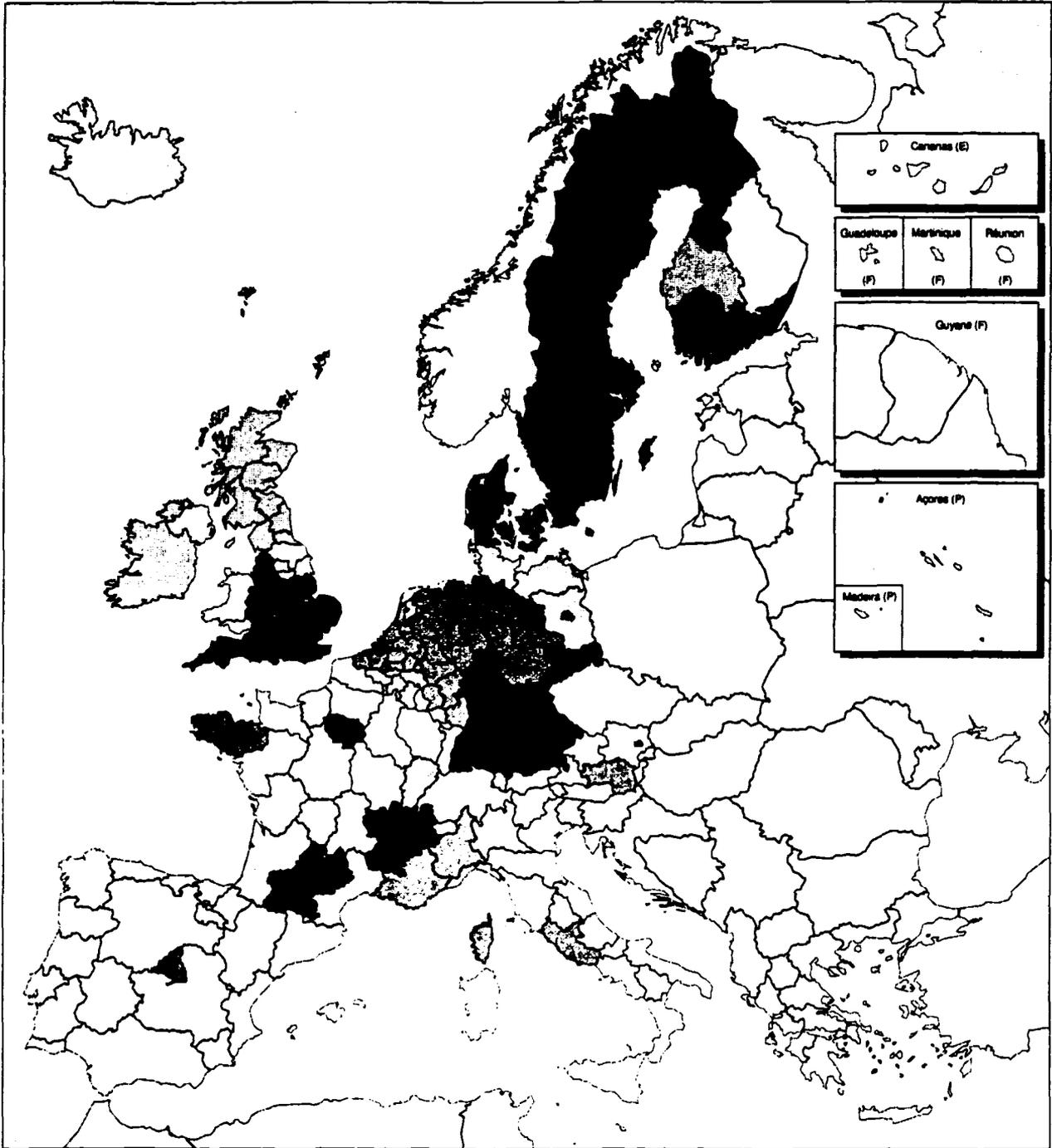
RTD activity, whether measured by expenditure or personnel is, therefore, more concentrated than GDP and this is true of both the public and private sectors. Patent applications are even more concentrated, regions containing 50% of the Union's population being responsible for 85% of patent applications. RTD personnel in higher education establishments, on the other hand, is more evenly distributed across regions, demonstrating the attempt by governments to counteract concentration tendencies.

Within countries, there is a clear tendency for RTD expenditure, especially by business, to be much higher in relation to GDP in capital cities and the surrounding areas, as well as in non-Objective 1 regions, than in those with Objective 1 status (Table 21). This is equally true of patent applications. In addition, in Spain, Portugal and Greece, a disproportionate amount of government expenditure on RTD goes to the regions with relatively high GDP per head, including especially the capital cities, so reinforcing concentration tendencies in the business sector. By contrast, the reverse is the case in Germany, where there is a high incidence of government-funded RTD in the new Länder as a deliberate part of the development strategy for these regions.

### Participation of assisted areas in EU RTD policy

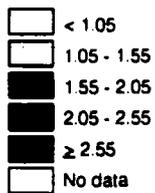
Support for RTD in assisted regions from the Structural Funds, under the Union's regional policy, often exceeds the finance they receive from the Framework Programmes (FP), under the Union's research and technology policy. Nevertheless, it is important to examine how far the two policies are coherent with each other.

Over time, coordination between RTD policy and Structural policies has improved with the aim of strengthening the innovative capacity of the institutions and businesses in less favoured regions so as to help narrow the development gap. In the case of both the 3<sup>rd</sup> and 4<sup>th</sup> Framework Programmes, annual expenditure was higher in relation to GDP in the Northern parts of the Union than in the South. Nevertheless, expenditure has also been significant under both



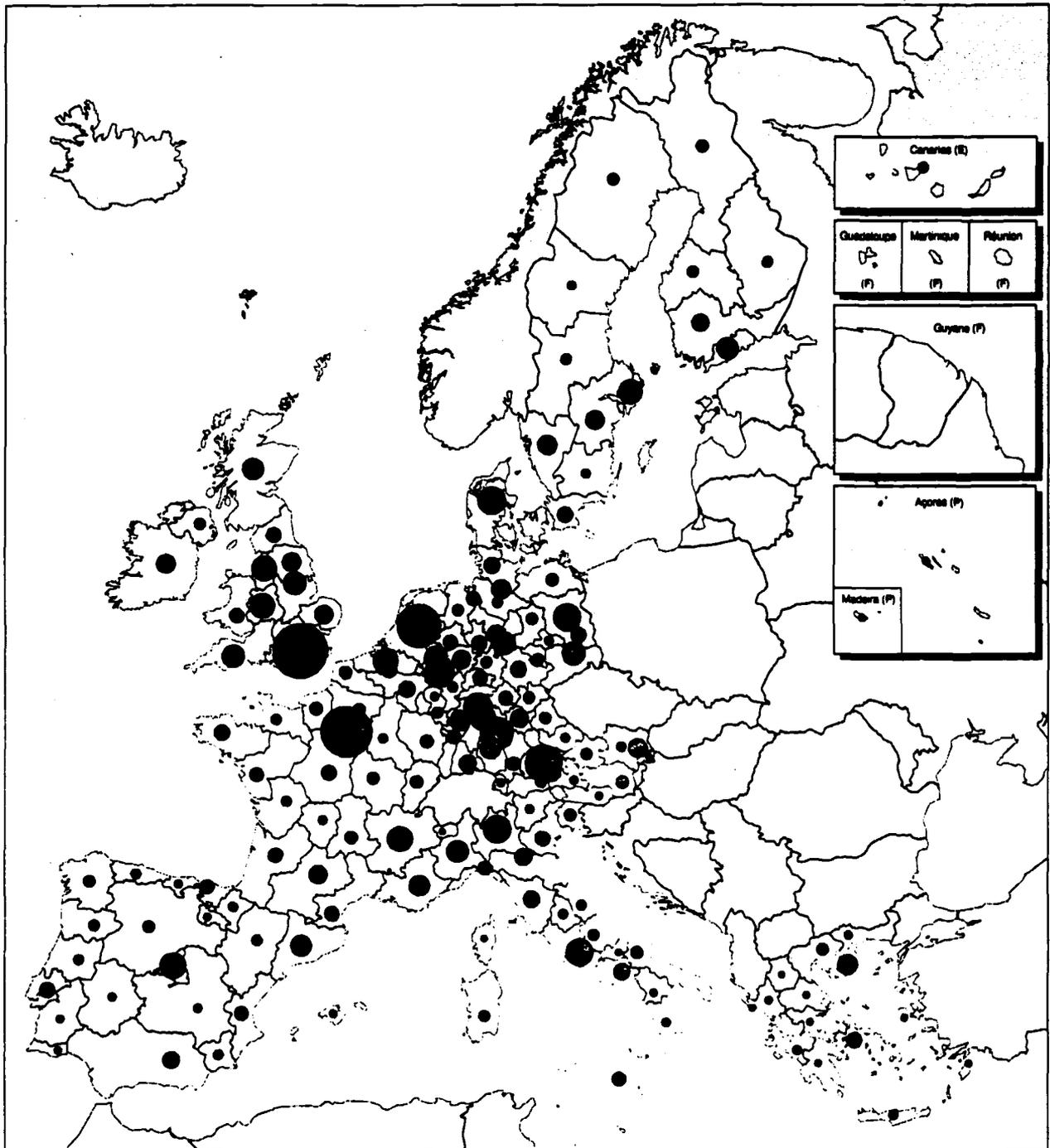
**Map 32 Research and development expenditure, 1995**

% of GDP



EUR15 = 18  
 Standard deviation = 1.0  
 NL: S NUTS-0; B, D, UK: NUTS-1  
 DK: D, EL: A 1993  
 E, F, I, NL: 1994  
 B, IRL, P, FIN, S, UK: 1995  
 Source Eurostat

0 100 500 km



**Map 33 Employment in research and development, 1995**

Number employed (full-time equivalent)

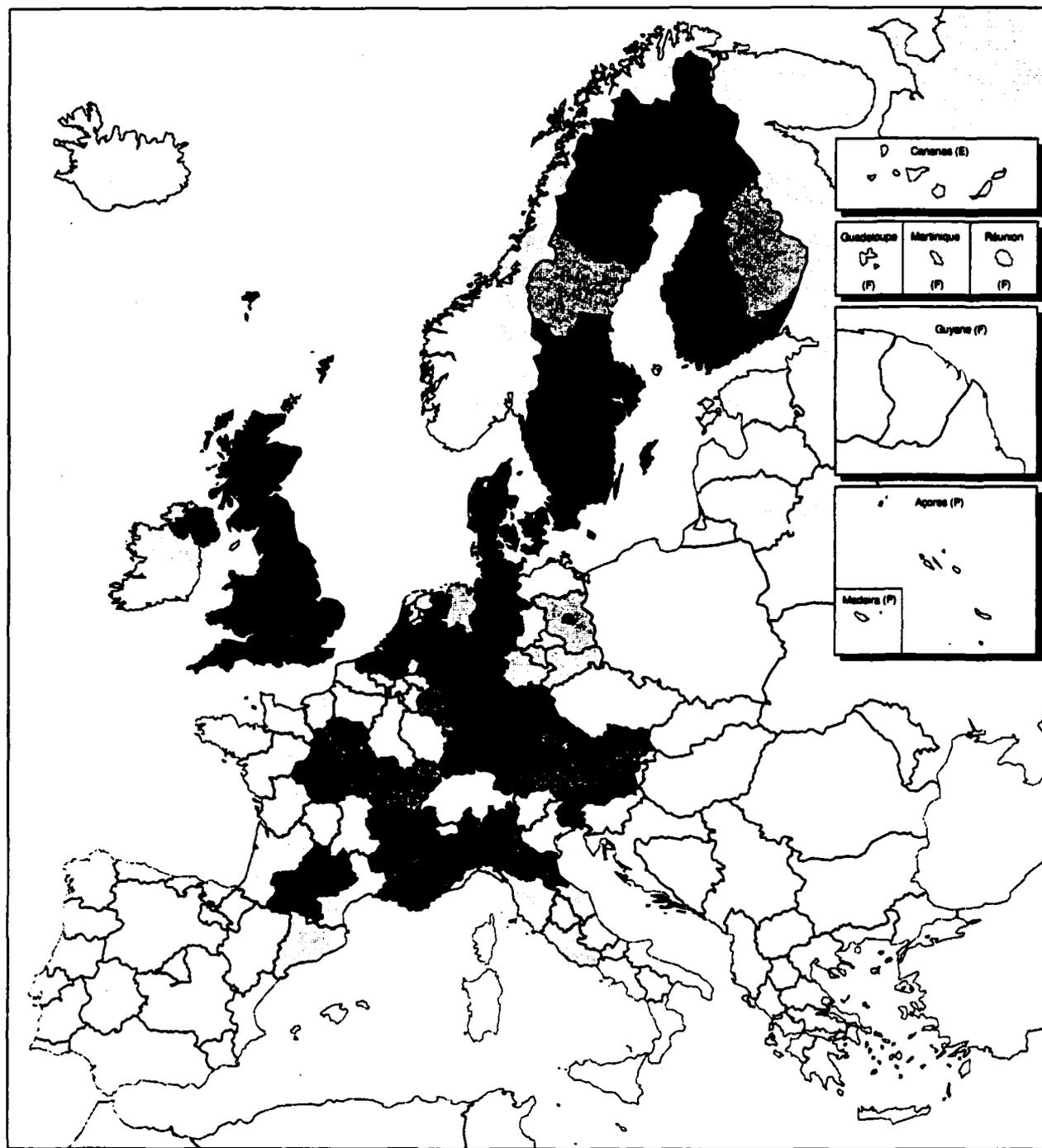
- Private sector
- Public sector
- Higher and further education



B. UK NUTS-1  
 DK, IRL L. NL NUTS-0  
 EL. A UK 1993

Source Eurostat

0 100 500 km



**Map 34 European patent applications, average 1994 to 1996**

Number per million inhabitants

- < 20
- 20 - 65
- 65 - 110
- 110 - 155
- ≥ 155
- No data

EUR15 = 91  
 Standard deviation = 85  
 EL, P, UK: national level  
 FIN: 1995

Source: Eurostat

0 100 500 km

programmes in a number of regions in the Cohesion countries, among them Kriti, Dytiki Ellada and Attiki in Greece, Madrid and País Vasco in Spain and Lisboa in Portugal as well as in Ireland, all of which have been in the highest bracket of support. In the 4<sup>th</sup> FP, Centro in Portugal and Kentriki Makedonia in Greece have also received support at a similar level.

The proportion of contracts going to the Objective 1 regions, taken together (and correcting for the inclusion of the New Länder among them after German unification), increased slightly from 11.9% under the 3<sup>rd</sup> FP to 12.2% in the 4<sup>th</sup> FP. This, however, is still significantly less than their weight in Union GDP. Their share of the total budget, however, was less than this, only 8.9% under the 4<sup>th</sup> FP, though this again was marginally more than under the 3<sup>rd</sup> FP (8.8%), and just 6.7% of the budget for enterprises (6.4% under the previous programme). Moreover, contracts to participants in Objective 1 regions have been disproportionately smaller than in other regions in all major areas of intervention under both the 3<sup>rd</sup> and 4<sup>th</sup> FPs. On the other hand, support has still been greater than the share of these regions in patent applications, which is only around 2.4%, so in this sense the budget they have received can be argued to strengthen their RTD potential.

Much of the support to RTD in Objective 1 regions under the 4<sup>th</sup> FP has gone to the educational sector and SMEs, which together account for 60% of total spending, which is in line with Structural Fund priorities, these two categories accounting for only 42% of expenditure in other regions.

The 5<sup>th</sup> FP will concentrate part of its activity on measures to support cohesion, such as the dissemination of research results, the training of workers in RTD and support for research on subjects of particular interest to less favoured regions. Accordingly, this should ensure complementarity with measures financed from the Structural Funds, while attempts will be made to ensure that the Operational Programmes under the latter have points of access to the activities supported by the FP.

### **The role of the Structural Funds in RTD support**

The Structural Funds support RTD activities in the assisted areas under all regional objectives. During the period 1989 to 1993, 3.9% of financial resources for all objectives went to these activities. Following evaluation, which criticised the overemphasis of intervention on public sector supply of facilities at the expense of private sector participation, the insufficient extent of decentralisation and the lack of revenue finance to operate facilities, priorities have changed in the current programming period. More emphasis is now accorded to the build up of RTD skills among the work force, to networking (in particular for SMEs), to the promotion of innovation and to the stimulation of demand.<sup>7</sup> This can help regions to attain the critical mass in terms of RTD potential necessary for their production structure to be modernised and diversified. At the same time, the weight of RTD support in total funding under Objectives 1 to 6 has been increased to 5.7%.

In both periods, the weight of RTD support was highest in Objective 2 regions (11.5% and 16.8%, respectively), reflecting their more developed RTD systems which enable them to absorb higher levels of support. The relative importance of RTD in Structural Fund support varies significantly between Member States. In Objective 1 regions, it ranges from 3.1% in France to 17.3% in the Netherlands (Flevoland), while in Objective 2 regions, only 8.3% of support goes to RTD projects in Denmark as against 25.3% in Finland. Efforts have been made by the Commission to raise awareness and clarify the role of RTD in regional development through seminars, conferences and various publications. Further support for RTD is provided under the Community Initiatives, in particular, through STRIDE (Science and Technology for Regional Innovation and Development in Europe) in the 1990 to 1993 period and SME, ADAPT and the sectoral initiatives in the current programming period.

These interventions have been complemented by pilot projects launched by the Commission under Article 10 of the ERDF and Article 6 of the ESF (Maps 35 and 36). For example, the Regional Innovation Strategies (RIS) and the Multi-Regional Technology Transfer Projects (RTT) programmes have been set up to support technological innovation with a combined budget of 15 million ECU.<sup>8</sup> The RIS, around 20 of which are currently in operation administered by re-

gional governments, are aimed at strengthening the innovative capacity of enterprises, particularly SMEs, by developing partnerships between the public and private sectors as well as inter-company cooperation. The RIS works through steering committees, comprising over 300 key representatives of regional government, universities, technology centres, entrepreneurs and their associations and so on, which have the task of designing action plans to define the specific projects to support innovation in SMEs. In total, 5,000 SMEs have been consulted in the process of elaborating the current RIS, including the first 7 Regional Technology Plans.

The RTTs are aimed at encouraging the development of cooperation networks for technology transfer from the core regions of the Union to less favoured regions, enabling firms in the latter to identify, adapt to and absorb innovatory processes developed in the former, so helping to reduce disparities between the two areas. So far 7 RTTs involving 30 regions have been established.

Two types of project have been developed in respect of the information society with a total budget of around 15 million ECU (Maps 35 and 36): RIS1 is aimed at encouraging partnerships between the key institutions and businesses in a region and the formulation of action plans for developing service projects and applications in telematics to help regions adapt to the information society, so that they can benefit from the opportunities it creates and avoid the risks. Its focus is on employment and the competitiveness of SMEs, in particular. The projects, which are undertaken in cooperation with the ESF, involve 22 regional authorities working in partnership with key institutions and businesses in their region in telecommunications and related areas. The 22 RIS1 regions together with the 6 IRISI regions (pre-pilot actions RIS1 1995-97) have formed a European association (ERIS<sup>©</sup>) to support interregional cooperation and the

exchange of best practices through the establishment of multi-regional working groups on particular issues, including telematic applications for SMEs.

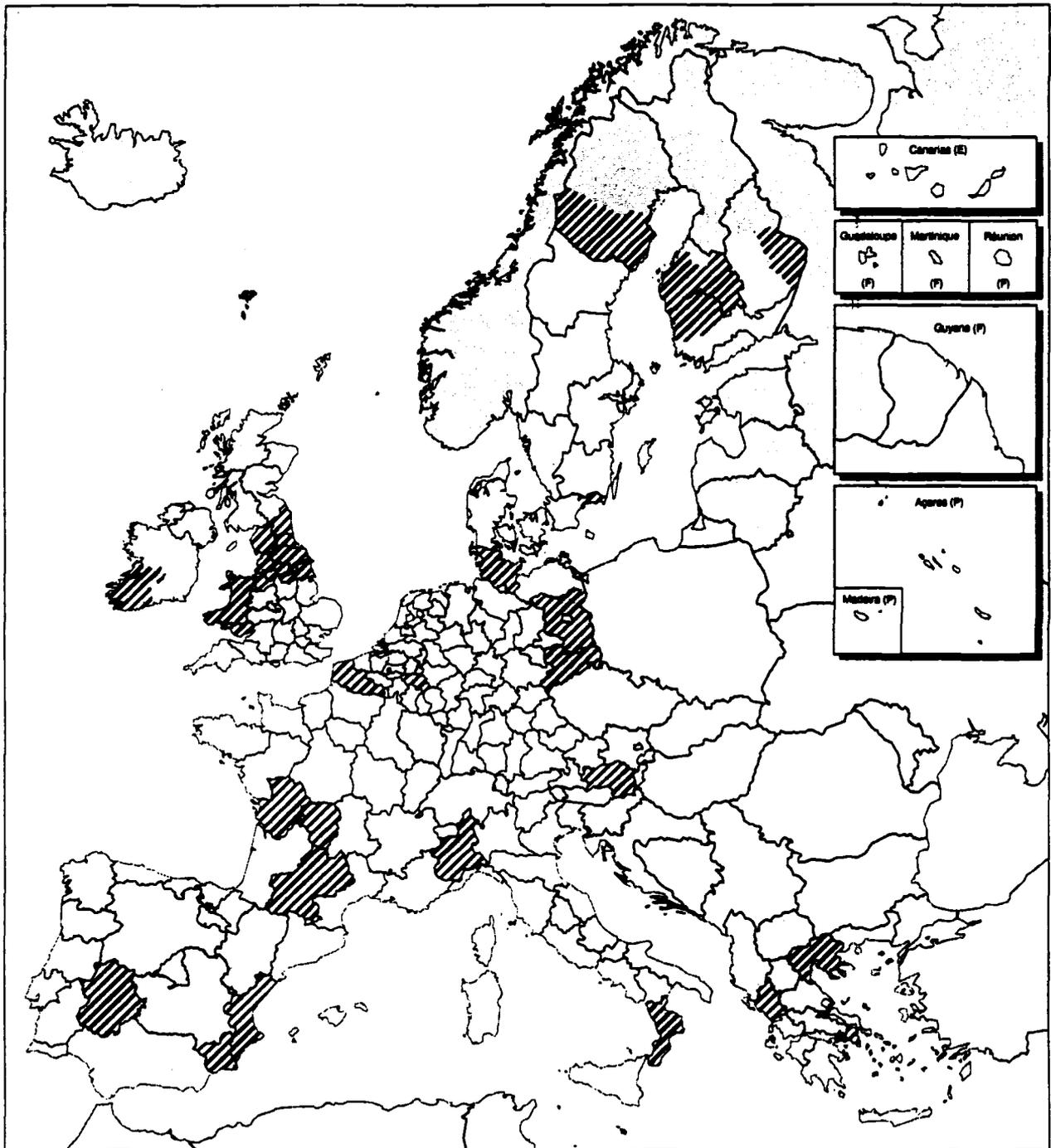
RIS2 (multi-regional pilot applications in telematics) is aimed at implementing telematic solutions to regional development problems through 7 projects of interregional cooperation involving around 30 regions.

For this and the other programme centred on interregional cooperation, at least one-third of the regions participating have to be Objective 1 or 6 areas and the same proportion of the financial contribution has to go to them. In both cases, there is special emphasis on support for SMEs. In practice, they cover many of the regions in the Cohesion countries (Maps 35 and 36).

A number of other innovative measures have been undertaken in respect of the information society, and support has also been given to the creation of a European network (EBN) of Business Innovation Centres (BICs) for innovative firms. Of the 140 BICs involved, 120 are located in less favoured regions. The functioning of these centres is currently under evaluation.

For the next programming period 2000 to 2006, the draft ERDF regulation envisages renewed emphasis on RTD. SMEs will be supported to facilitate innovation and technology transfer, and assistance generally will be given to RTD to encourage innovation and the use of new technologies. The aim is to strengthen the R&D potential of regions and to encourage the development of the information society, as set out in the Commission Communication on 'Reinforcing cohesion and competitiveness through research, technological development and innovation.'<sup>9</sup>

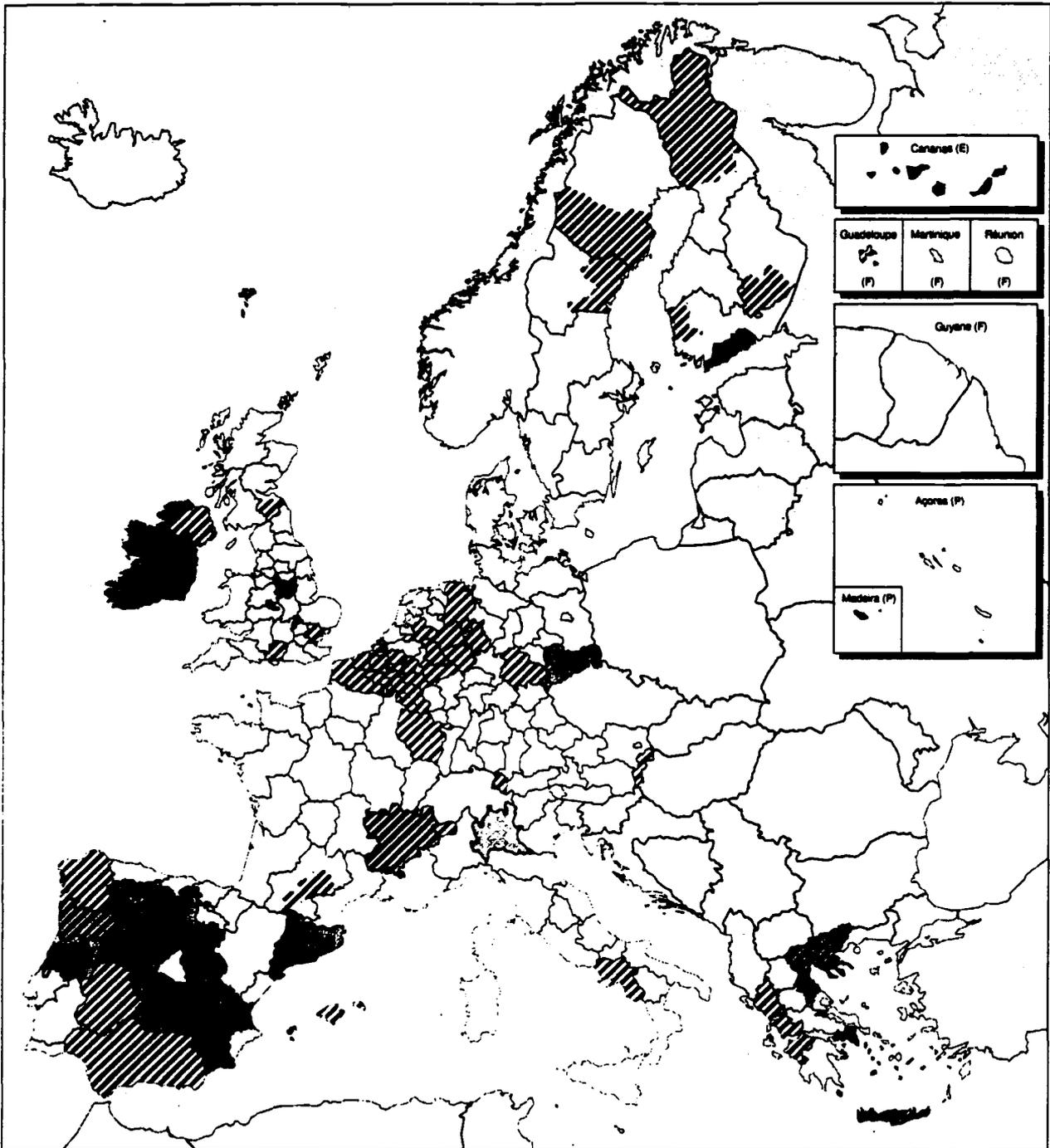
- [1] European Commission (1997), *Second European Report on S&T Indicators*, p. 356. A similar correlation could not be found between the number of patents per head of population and GDP growth, implying that it is **Increases** in RTD activity that boost economic development. Cf. B. Clarysse and U. Muldur, *Regional Technology and Economic Gaps: A Systemic Approach*, working paper DG XII-AS-4, 1997. The two studies do not, however, cover the same period of time, the one using the patenting level as an indicator of innovation covering a more recent period when technological differences between regions have become less marked and when accordingly the correlation might have weakened.
- [2] These were defined as SMEs which introduced a new product during the last three years. See European Commission (1997), *Second European Report on S&T Indicators*, p. 366.
- [3] European Commission (1997), *Second European Report on S&T Indicators*.
- [4] The highest value of GERD relative to GDP is in Berlin, at 3.7%, the lowest one, in Dytiki Makedonia at just 0.04%. On the basis of the various indicators presented here, however, the technology gap between European regions is significantly smaller than between the States of the US. See *Second European Report on S&T Indicators*, 1997, p. 342f.
- [5] See *Competitiveness and Cohesion: trends in the regions*, 1994, p. 101 and *Second European Report on S&T Indicators*, 1997, pp. 360-363.
- [6] See *Second European Report on S&T Indicators*, 1997, p. 371.
- [7] For specific examples of the measures taken, see *Reinforcing Cohesion and Competitiveness through Research, Technological Development and Innovation*, Communication from the Commission, COM(1998) 275 fin.
- [8] In the framework of DG XIII's innovation programme, support is granted for a similar programme, the Regional Innovation and Technology Transfer Infrastructures and Strategies (RITTS).
- [9] *Reinforcing Cohesion and Competitiveness through Research, Technological Development and Innovation*, Communication from the Commission, COM(1998) 275 fin.



**Map 35 Article 10 of ERDF: Innovative measures of interregional cooperation**  
**Regional Innovation Strategies (RIS)**  
**Regional Information Initiative (RISI 1)**

- RIS pilot projects 1996-98  
(pilot projects 1994-96 included)
- RISI 1 pilot projects 1996-98 financed under ERDF and ESF  
(pilot projects 1995-97 included)

0 100 500 km



**Map 36 Article 10 of ERDF: Innovative measures of interregional cooperation  
Technology Transfer (RTT)  
Pluri-regional applications (RISI 2)**

■ RTT projects  
▨ RISI 2 projects

0 100 500 km

## 2.3 Small and medium-sized enterprises

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### SMEs in the European economy

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In 1995, there were around 18 million enterprises in the Union, excluding agriculture and non-market services. Of these, 99.8% were small and medium-sized enterprises employing fewer than 250 people.<sup>1</sup> Together they are estimated to account for two-thirds of the jobs in the EU outside the agricultural and non-market sectors and for some 55% of the turnover.

SMEs, moreover, are of key importance for employment growth. For a number of years, according to the best estimates, they have played a disproportionate role in net job creation, while employment in large firms, particularly in manufacturing, has declined. This reflects the inherent characteristics of SMEs, in particular, their greater flexibility and their ability to adapt better than larger firms to changing market conditions.<sup>2</sup> In addition, they serve to facilitate the shift of resources between sectors and are often a major source of innovation, so helping to increase the growth potential of the economy. In this respect, they are a necessary complement to large companies, which the latter are tending increasingly to recognise by concentrating more on their core activities and outsourcing other parts of their business to SMEs through various kinds of subcontracting arrangements, including in some cases R&D.

Through their flexibility and their potential for employment creation, SMEs can play a major role in regional development. At the same time, however, they are also handicapped in various ways when competing with larger firms. In most cases, they have more difficulty in raising finance, most crucially when they first start up. In addition, the costs of complying with government regulations and the taxation system are likely to be higher relative to turnover than for larger enter-

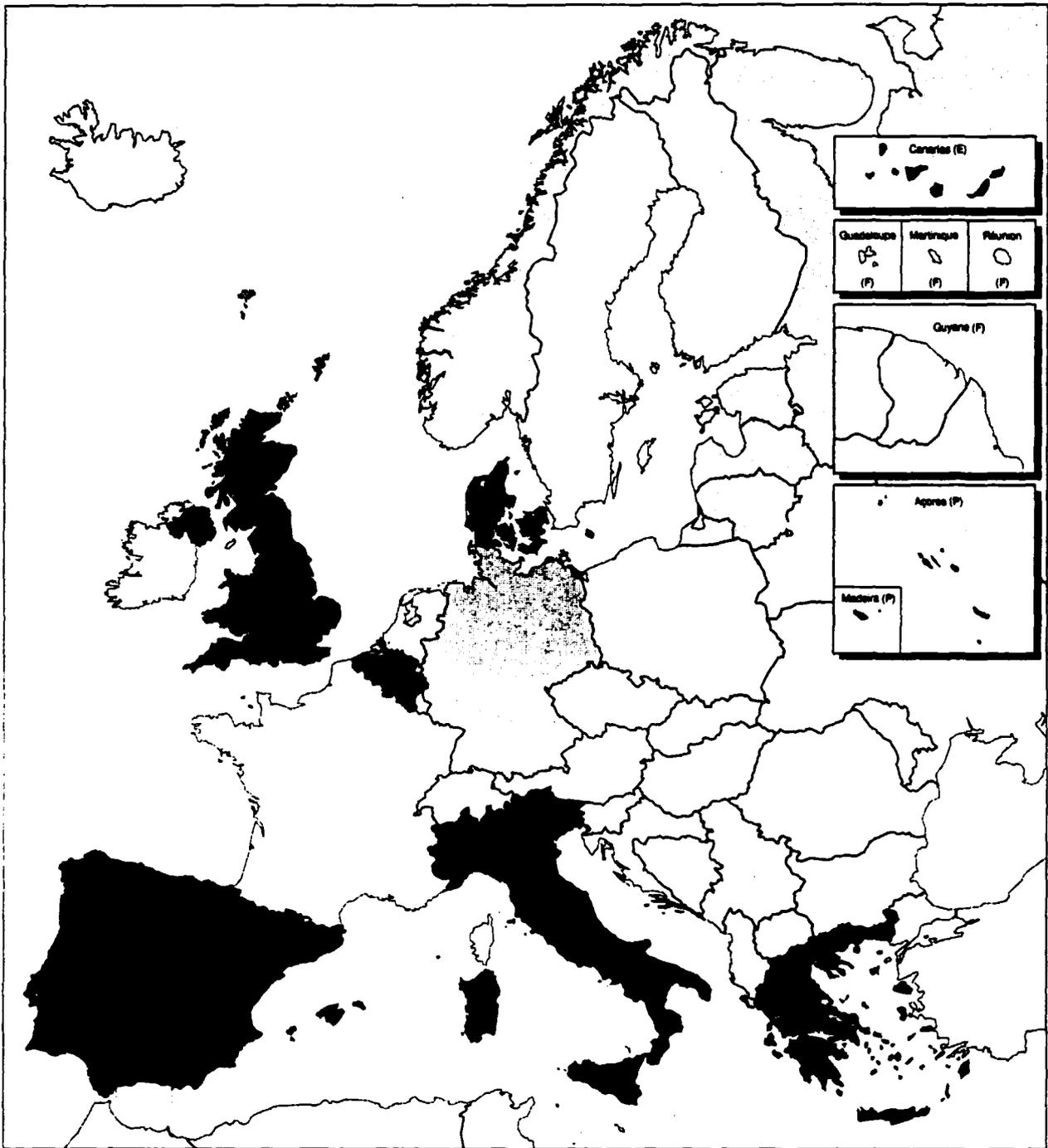
prises. For these reasons, measures are generally targeted on SMEs to help them compete on a more even basis (see Box on EU assistance to SMEs).

### Regional indicators

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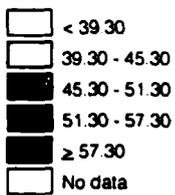
Since clearly the presence of businesses, and in particular of SMEs, is an essential condition for the development of a region, the density of enterprises, or of SMEs (defined here as the number per 1000 people of working age), can be used as an indicator of whether the infrastructure — in the sense not only of transport systems and so on, but also institutional arrangements and support services — is favourable to economic development. Equally, it can also be used to assess the effectiveness of structural policies. However, since SMEs are highly diverse in terms of their sector of activity, market focus, technological capability, the skills of their work force and, generally, their potential for growth, the mere presence of large numbers of SMEs is no guarantee of economic success. Indeed, in many less developed regions of the Union, a high density of SMEs is sometimes seen as evidence of a relatively weak and antiquated economic structure, lacking the features to attract business investment.

In practice, the highest density of enterprises occurs in the South of the Union, in Portugal, Spain, Italy and Greece, which on a simplistic view would suggest that these countries have more favourable conditions for business development than the Northern Member States (Map 37). Enterprises in all four countries, however, consist predominantly of small family businesses and are much smaller than in the rest of the Union, in terms of both their average number of employees and their turnover (Maps 38 and 39).<sup>3</sup> This is



**Map 37 Enterprise density by Member State, 1994**

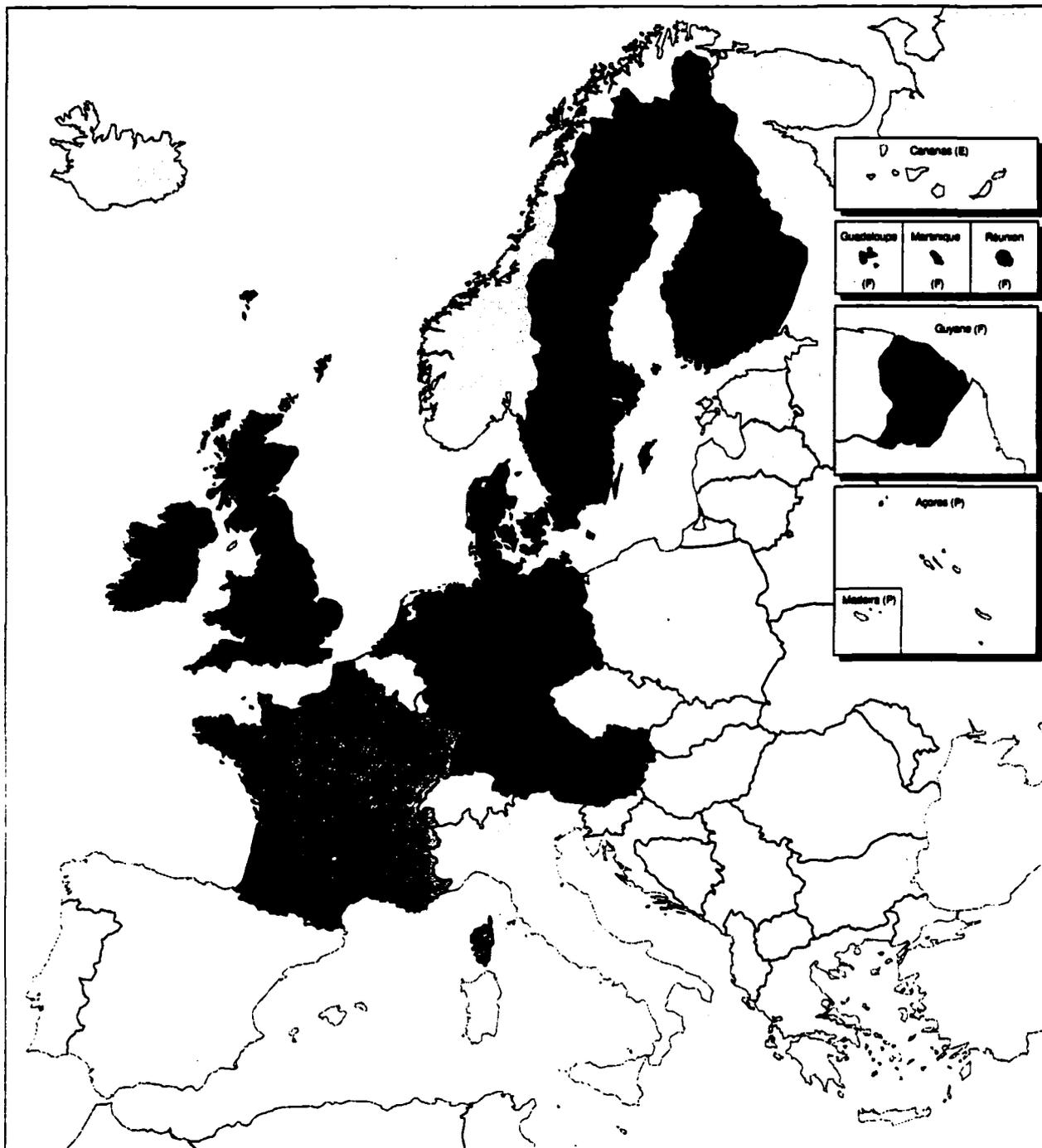
Enterprises per 1000 inhabitants



EUR15 = 48.3  
 Standard deviation = 12.0  
 B: VAT units

Source: Eurostat

0 100 500 km



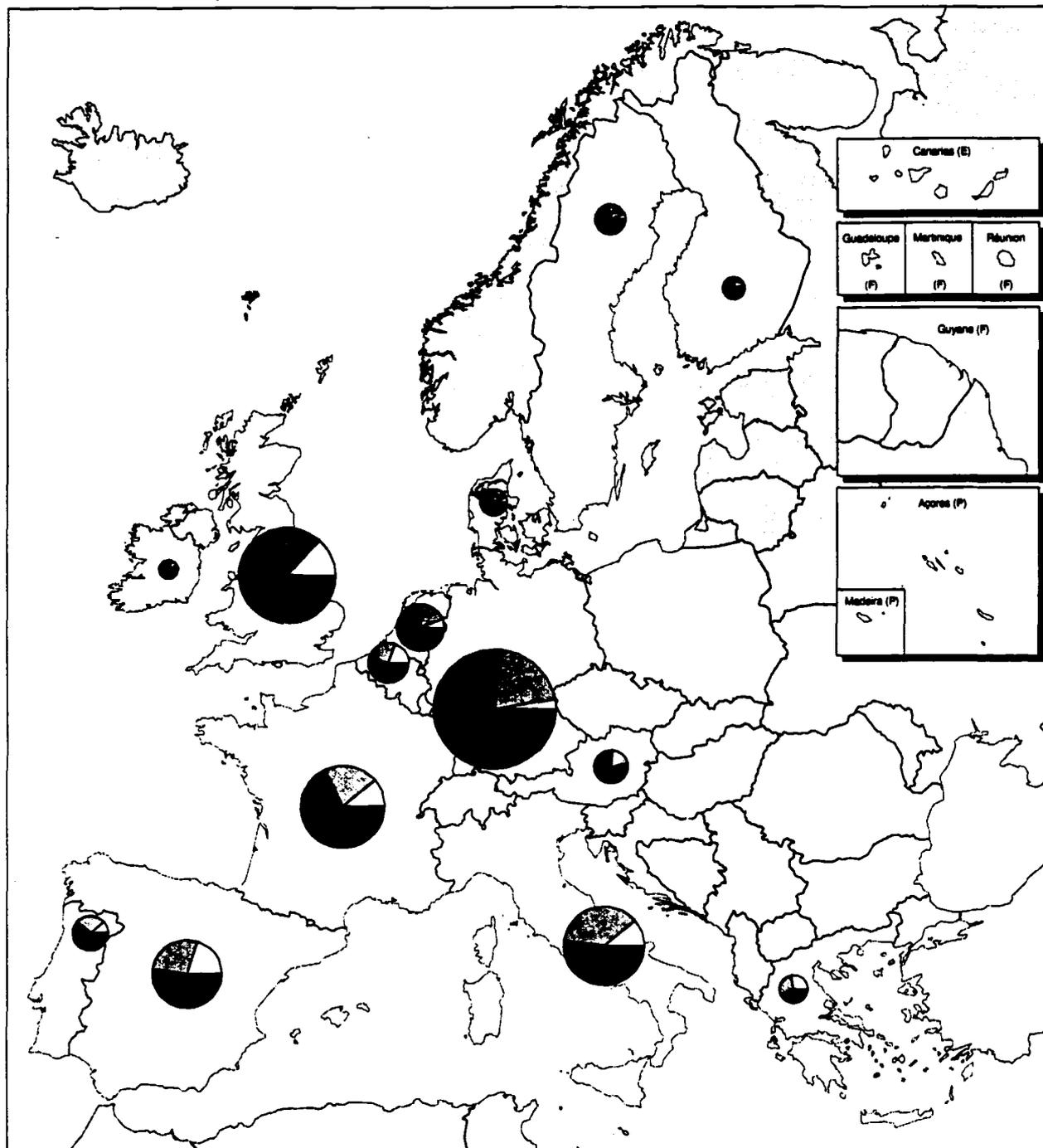
**Map 38 Average turnover per enterprise by Member State, 1994**

ECU thousands

- <= 500
- 500 - 800
- 800 - 1100
- 1100 - 1400
- ≥ 1400
- No data

EUR15 = 943  
 Standard deviation = 589  
 B: VAT units  
 Source: Eurostat

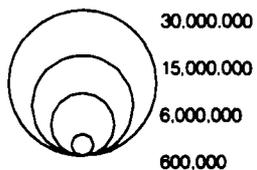
0 100 500 km



**Map 39 Persons employed by enterprise size class, 1994**

Number employed

- 0
- ▨ 1 - 9
- 10 - 49
- 50 - 249
- ≥ 250



D: only enterprises with at least one person employed

Source: Eurostat

0 100 500 km

in large measure due to the different structure of economic activity in the South of Europe and the relative concentration of enterprises — and employment — in less capital-intensive sectors.<sup>4</sup> The number of separate enterprises, therefore, and their relative size, gives a highly misleading impression of the potential for growth and job creation of different parts of the Union, unless explicit account is taken of the sectoral distribution of enterprises as well as of the nature of enterprises themselves. In Northern Member States, therefore, SMEs are more concentrated in more dynamic sectors, while the proportion of employment in medium-sized firms also tends to be higher, again partly because of the structure of activity.

The size structure of enterprises appears to be relatively similar across regions in the same country, except there seems to be some tendency for the relative number employed in large firms to be higher in the capital city and surrounding area. A regional analysis of enterprise numbers and size, however, is limited by lack of data. Specifically, the only data available in most Member States in this regard relate to production units, or establishments, rather than enterprises, and though these may give a reasonable approximation of relative numbers of firms of different size, this is not necessarily the case because of possible variations between regions in the importance of multi-establishment enterprises.

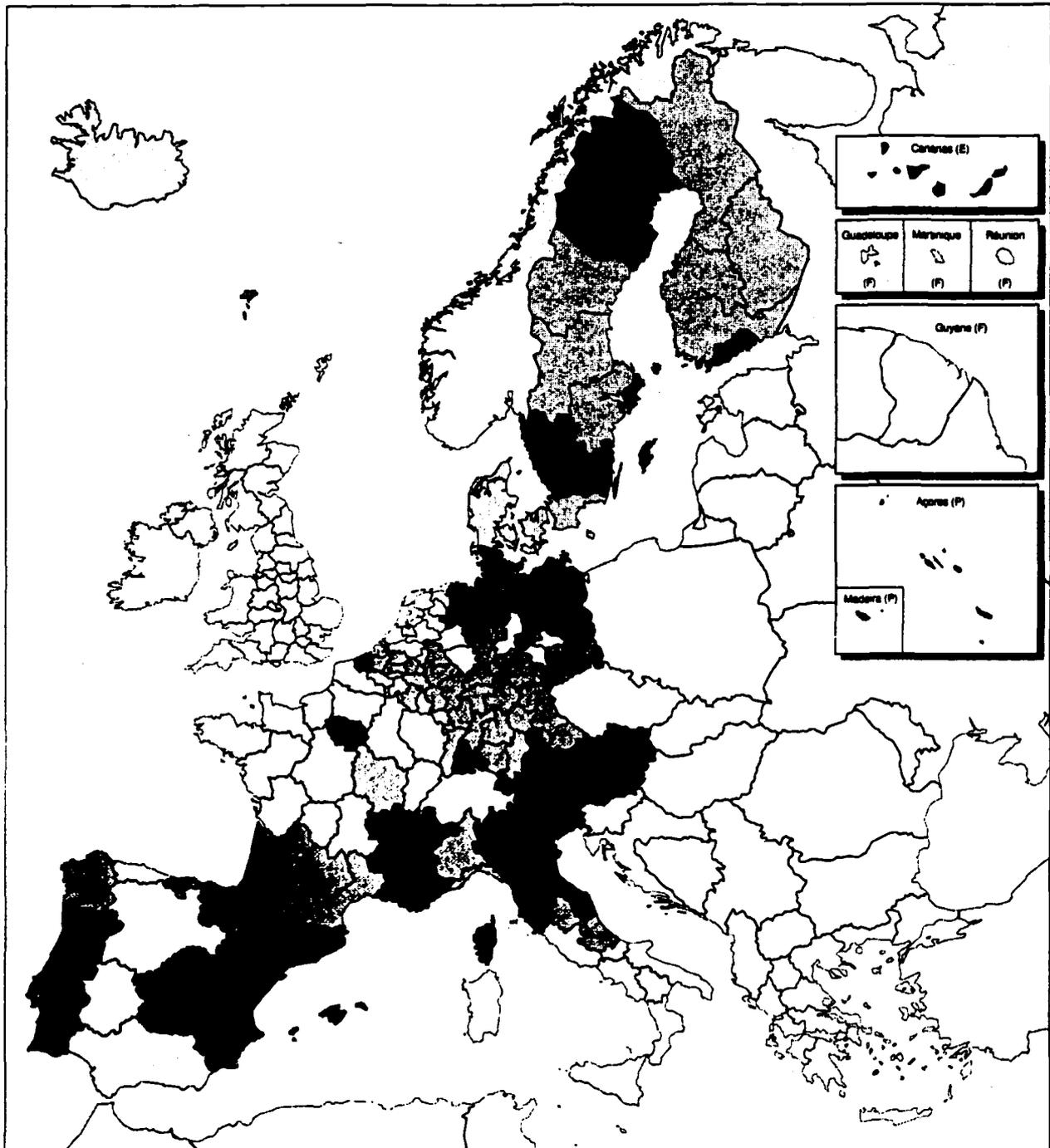
In practice, the relative density of small and medium-sized local units in different parts of the Union is similar to the relative density of enterprises (Map 40).<sup>5</sup> The density of units, however, is also relatively high in the South of France, which may well reflect the same underlying factors as in other Mediterranean countries. In Portugal, Italy and Spain, there is a clear tendency for local units to be concentrated, relative to population, in the regions with relatively high GDP per head, including, in particular, in those where the capital city is located (in, for example, Northern Italy, Cataluña, Madrid, Valencia, País Vasco, Lisboa e Vale do Tejo and the Algarve) (Map 41). Although the relative concentration of local units in capital cities is also evident in other Member States, the regional differences in these three countries provide a clear illustration of the lack of productive facilities in disadvantaged areas. A similar imbalance is also evident for employment. While there is no systematic difference in the size structure of enterprises between different regions in Spain or Italy, the total number of jobs is much lower in the less favoured regions.

## The role of SMEs in employment creation

Although the data available are limited, those which exist (in particular, those on enterprise demography compiled by Eurostat) suggest that the creation of enterprises, which are predominantly very small, contributes as much to employment growth as the expansion of existing firms. Indeed, the evidence is that substantial numbers of new firms are created each year across the Union to exploit new market possibilities, to produce and sell new products and/or to use new techniques of production or new ways of working. Although similar numbers of firms, again predominantly very small, also go out of business each year, this process of birth and death is an essential part of economic development, of the adaptation to changing market circumstances in a competitive environment and of the implementation of new technology. Moreover, with technological advance and changing patterns of consumption as real incomes rise, niche markets are being created in which SMEs can not only compete on more favourable terms with larger enterprises than before but have a comparative advantage specifically because of their size and greater flexibility.<sup>6</sup>

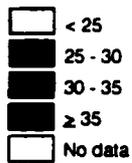
In addition, estimates of the number of people employed in small businesses based on the Community Labour Force Survey suggest that the share of employment in small firms in services rose slightly between 1992 and 1997, while the share in industry rose more significantly, perhaps reflecting the growth of outsourcing or subcontracting.<sup>7</sup>

Any assessment of the contribution of SMEs to job creation in the Union is, however, affected by the coverage and quality of available information. The data currently produced by Eurostat are partial and suffer from methodological problems. They, therefore, do not allow definitive conclusions about the role of SMEs in employment creation to be drawn. As the employment size of firms changes over time and as some small firms grow into larger ones and *vice versa*, the contribution to employment growth of firms of different size cannot be measured simply by comparing the relative number employed by them at two points in time. The only way of measuring this is through monitoring the development of individual firms over time so that any change between employment size classes can be tracked.<sup>8</sup>



**Map 40 Density of small and medium-sized local units, 1994**

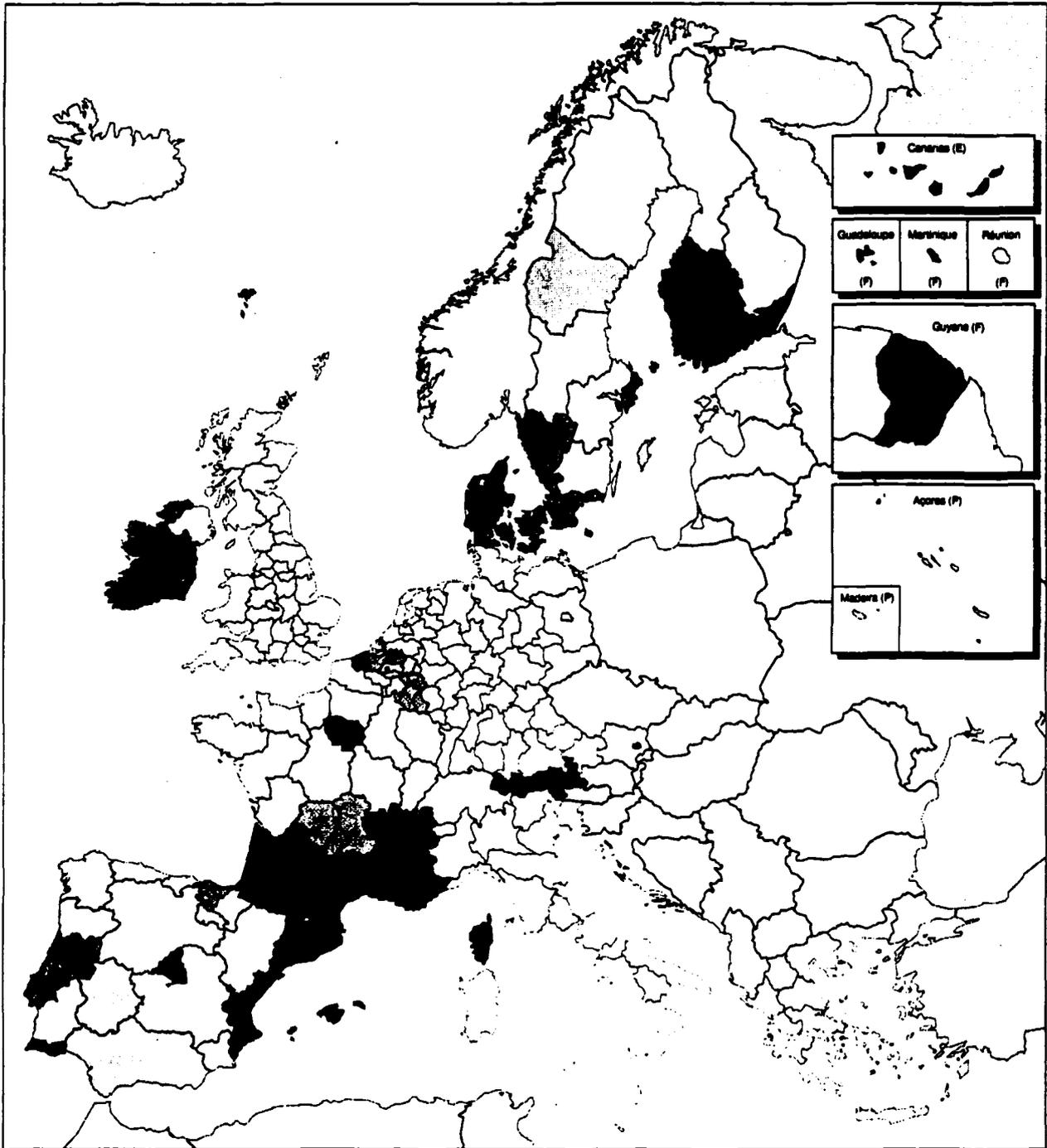
Enterprises per 1000 inhabitants



Excluding units with no employees

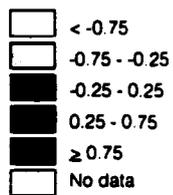
DK, P enterprises  
E, P 1993  
I, A 1991

0 100 500 km



**Map 41 Regional disparities within Member States in number of local units per inhabitant, 1994**

Standard deviation within Member States



B. E. S: 1995  
P: 1993, A: 1991

Source: Eurostat

0 100 500 km

### Support measures for SMEs

According to a recent survey of assistance to SMEs in rural, underdeveloped regions, the support provided, apart from financial aid of the traditional kind, took a wide range of forms, including training and consultancy services to entrepreneurs, assistance for cooperation between SMEs and the creation of networks, and the establishment of business centres or technology parks to encourage the diffusion of technology, especially that related to the inherent features and potential comparative advantage of the region in question.<sup>9</sup> Experience in Italy and Norway, moreover, shows that such broadly-based and long-term assistance can lead to significant increases in the survival rates of SMEs.

Support for SMEs under the EU Structural Funds has followed this kind of broadly-based approach. The available data indicate that for the current programming period, about 14% of the total resources of the Structural Funds (ie approximately 22 billion ECU) is directed at supporting the production facilities and economic environment of SMEs. In Objective 1 regions, such support is usually included in the 'industry' operational programmes. In Objective 2 areas, the share of funding going to support SMEs is usually above average, while in Objective 6 regions, funds for SMEs amount to a quarter of total Community support. These figures, however, only include the programmes specifically targeted at SMEs, which also receive assistance under programmes directed at all enterprises. Under Objective 5b, programmes for 'investment in production, SMEs, the craft sector and services' account for 25% of all appropriations. More indirectly, SMEs can also benefit from public investment in infrastructure and training.

The Commission in its new guidelines for Objective 1 and 2 areas, issued in 1997, identified the development of SMEs as a priority area for support. This emphasis is reflected in the new Objective 2 programmes for 1997-99.

A special Initiative was introduced in 1994 with a budget of 1 billion ECU to help SMEs in all assisted areas to adapt to the constraints of the internal market and the globalisation of the economy. 80% of the budget was earmarked for Objective 1 regions. The aim is to increase the competitiveness of SMEs by improving their working environment and increasing their know-how, special emphasis being given to RTD and innovation in information and

communication technology. Support is provided for cooperation between SMEs and with research centres to improve their marketing, organisation and management as well as to enable them to share skills.

Another Initiative with a major SME dimension is the LEADER II programme focused on rural areas. Around 20% of the total Community contribution of 1755 million ECU goes to measures which directly assist SMEs and the craft sector, in the form of support for business services, innovative investment, teleworking and the setting up of enterprises. Since eligibility for support requires projects to be innovative, the Initiative enables new methods of organisation and marketing as well as new products to be tested. SMEs are also supported under the ADAPT Initiative, which is aimed at helping the work force adapt to industrial change.

In addition, the creation of innovative enterprises and the development of SMEs is assisted under the RIS, RTT, and RISI programmes, described above (see Box on RTD support), as well as by the establishment of information and advice centres, such as the Euro Info Centres and the European Business and Innovation Centres (BICs). Moreover, the RECITE II (internal and external inter-regional cooperation) innovative measure also covers SMEs, while the EUROPARTENARIAT programme, introduced in 1987, supports the development of regions eligible for assistance under Objectives 1, 2, 5b and 6 by encouraging the SMEs located there to establish business cooperation with companies in other Member States or third countries. These events, where enterprises can meet potential partners, are co-financed by the ERDF and are held twice a year.

As well as assistance from the Structural Funds, SMEs also receive support from the European Investment Bank through global loans, totalling more than 11 billion ECU since 1990, 6.4 billion ECU of which went to assisted areas. They can, in addition, be eligible for interest subsidies from the EIB and loan guarantees from the European Investment Fund (for which no regional breakdown is available). Finally, the Commission has also recently established a pilot scheme, called 'Seed Capital', extending reimbursable advances to independent investment funds providing finance for business start-ups. Though the programme is not confined to assisted areas, 15 of the 23 funds in operation are located in such regions.

At present such data on enterprise demography are only available for 5 Member States (Finland, Sweden, Portugal, Spain and France) and for a limited number of years. Although developments have varied between them, there seems to have been a tendency during the first half of the 1990s — which was largely a period of recession or slow growth — for very small firms (below 20 employees) and large ones (250 employees and more) to suffer disproportionate job losses, while small enterprises (20–49 employees) and medium-sized ones (50–240 employees) performed better.<sup>10</sup>

A recent study on the UK concludes that job creation in SMEs has been dominated by a small number of enterprises with very high growth rates, but that this has been accompanied by a high rate of failure among the 'lower tail of micro firms'.<sup>11</sup> The smallest firms (with 1–19 employees), therefore, had the highest rates of both job creation and job destruction, which is consistent with the findings to emerge from the Eurostat demographic data cited above.

As noted above, however, analysis of job creation by SMEs can be distorted by the variation in the employment size of companies over time as a result of economic fluctuations, which means that companies move between size classes. After adjusting for this distortion, the study for the UK still found an inverse association between company size and job creation.

Finally, while it is generally accepted that there is a high rate of gross job creation in SMEs, there is still a signifi-

cant lack of understanding about why some firms survive and expand and others fail. Studies for the period 1990 to 1992 suggest that, depending on the sector, between one-third and two-thirds of SMEs introduced technological changes into the products they produced and the processes by which they did so and that these were the ones most likely to survive and to be involved in collaborative partnerships with other firms or research institutions. The 'lower tail of micro firms', however, were for the most part involved in very little innovative activity. These companies also tended to cooperate less in R&D than larger enterprises, which may partly be due to lack of information about possible partners, and, in general, they provided much less training to their employees.<sup>12</sup> This suggests that broadly-based long-term assistance (of the kind described in the Box) is important to overcome these weaknesses and to strengthen the competitiveness not only of such firms but also of the Union economy as a whole, particularly that of lagging regions.

Important conclusions to emerge from the above analysis are, in the first place, that the potential of SMEs for employment creation differs between sectors as well as different kinds of enterprise; secondly, that further work is required to identify the factors determining this potential in order better to target assistance, especially on those SMEs which are capable of innovating and which are likely to be a source of employment growth in the long-term.

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- [1] SMEs are defined as firms with fewer than 250 employees, having an annual turnover of not more than 40 million ECU and/or a balance sheet valuation of not more than 27 million ECU and with less than 25% of equity owned by a large enterprise.
- [2] Research has shown that in some Member States, including in Portugal and Greece (where data are limited to manufacturing), very small companies (1–9 employees) in a number of cases have higher value-added per unit of labour costs than other small or medium-sized companies and, therefore, a higher profitability. See European Commission, *Enterprises in Europe, Fourth Report, 1996*, part 1.
- [3] In spite of the differences in business structures between the Member States there is a remarkably strong relationship between employment and turnover per enterprise. Portuguese enterprises have a below average turnover per employee which is explained by specialisation: in industries with a low value-added.
- [4] See European Commission, *Employment in Europe 1998*, Part II, Section 1.
- [5] A local unit is an enterprise or a part thereof, eg a workshop, factory or office, situated in a geographically separate place. This definition allows for a more precise regional allocation of production (and employment) between sites than data for enterprises, the head offices of the larger ones of which are located disproportionately in large cities. For Denmark and Portugal, however, only data on the number of enterprises are available. The data also exclude units with no employees, ie with only self employed, and so tend to understate the true number of units. In addition, small and medium-sized units are defined as those with less than 100 employees which differs from the definition of SMEs (less than 250 employees).
- [6] See European Commission, *Employment in Europe 1998*, Part II, Section 1.
- [7] *Idem.*
- [8] *Idem.*
- [9] *Idem.*
- [10] A. Hughes, *Small Firms and Employment*, Employment Policy Institute, 1996
- [11] European Commission, *Enterprises in Europe, Fourth Report, 1996*, p. 72.
- [12] See EIM Small Business Research and Consultancy, *SME Observatory, Fifth report, 1997*, chapter 6.
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## 2.4 Foreign direct investment

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### The role of FDI in regional development

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Together with trade, foreign direct investment (FDI) is an important mechanism for integrating international markets. Trade and FDI flows can be substitutes or complements for each other.

The economic development of a region is strongly linked to its ability to attract and retain productive activity. A number of studies have been undertaken on the factors which influence the attractiveness of regions for foreign investors. The results of one such study were presented in detail in the previous Periodic Report.<sup>1</sup> It indicated that production costs (labour costs, in particular) were only one of a range of factors influencing potential investors and that in order to attract inward investment, a region needed to have a combination of favourable characteristics.

FDI contributes to regional development by increasing the capital stock and productive capacity. This is most obvious when it takes the form of investment in a new 'greenfield' site or in the expansion of an existing plant. It is less obvious when FDI consists merely of a financial transaction to acquire shares in a domestic company or to purchase an existing asset. In practice, by far the greater part of FDI consists of the latter type of transaction. Nevertheless, even in this case, the effect may still be to increase the capital stock as the recipients spend the additional funds received or, in the longer-term, as the new owner invests in the business acquired. More generally, it may lead to a strengthening of the competitiveness of the business as it becomes part of a larger international concern as well as to an increase in competition in the economy in question, stimulating local businesses to increase efficiency and product quality.

In all probability, inward investment will increase employment either directly if it adds to productive capacity or indirectly over the longer-term if it strengthens competitiveness. It may also provide access to new technology and know-how. This is particularly important in less developed regions which often lag behind in this respect and as a result have lower levels of productivity. In order to have the maximum effect on regional development, however, it is important for the new facilities created and/or the multinational company responsible for the investment to become integrated into the local economy. This involves, at a minimum, the transfer of technology to the local unit and, preferably, the diffusion of this technology to other companies in the region. It also entails the sourcing of supplies from local businesses and/or the sale of the goods or services produced to local corporate customers. Moreover, the higher the degree of integration of the investing company into the local economy, the more likely it is that its presence will be permanent and the investment long-term.

Nevertheless, there are potential negative effects of FDI, which are likely to be more of a possibility the less the investors become integrated into the local economy. A common fear, in particular, is that the investing company will have less attachment to the area and may at any time cut back production, and employment, as part of its global strategy. This tends to assume, however, that a domestic company would act differently if it owned the plant or business in question and neglects the fact that it would be under the same kind of pressure from international competitive forces. If a facility is uncompetitive when owned by a multinational, there is little reason to suppose that it would perform better if owned by a domestic company.

Another concern, sometimes expressed, is that the presence of a foreign investor tends to drive up

wages. Instead of recruiting people and training them, it is argued, multinationals tend to entice the most qualified, and already well-trained, workers away from local companies by offering them high rates of pay. Forced to follow suit, the cost competitiveness of local businesses therefore suffers. There is, however, little evidence that multinationals act in

this particular way — indeed, since low wages may well have been a motivating factor behind the move in the first place, they have little incentive to do so. On the other hand, there is evidence that multinationals typically provide a relatively high level of training and, if they are investing in a lagging region, need to do so since the stock of highly qualified labour is almost certainly limited.

### Difficulties of measurement

For statistical purposes, FDI is defined as the acquisition by an individual or enterprise resident in one country of assets located in another. The main source of difficulty concerns not just the identification of such flows and collecting reliable information about them, particularly as many transactions are internal to multinational companies, but also defining the circumstances when an asset is acquired in the case of financial transactions, particularly involving company equity. In this case, transactions are included as part of FDI only if a material interest is acquired in a foreign enterprise (usually defined as a shareholding of at least 10%, though unfortunately not in all countries). Once this condition is satisfied, further capital transactions between the two parties concerned also count as FDI. FDI transactions, accordingly, involve the acquisition of equity capital as well as reinvested earnings and 'other direct investment capital', consisting of inter-company debt transactions.

While the definition is relatively clear, measurement problems arise because of the use of different national sources and methods of collection and different ways of classifying transactions. Although Eurostat attempts to harmonise the data coming from different Member States, the task involved is formidable, not least because many data are missing or unavailable and have to be estimated from secondary sources or even from relationships applying elsewhere (ie from models).<sup>2</sup> While outflows to country B as recorded by country A should equal inflows from country A as recorded by country B, in practice, this is rarely the case and in many instances the difference is substantial. For example, the difference between estimates of total intra-Union flows of FDI based, on the one hand, on inflow data and, on the other, on outflow data, varied between 16% and 33% of the total in each of the three years, 1993 to 1995. The reason for such asymmetry lies, partly, in the inaccurate geographical allocation of FDI flows on the part of Member States and, partly, in differences between the way data are collected and defined in the different national systems.

A further view holds that a significant part of FDI consists of companies relocating their activities primarily to benefit from investment aid. If the relocation takes place between Member States, then there need be no net expansion of the capital stock in the Union as a whole. Again, however, there is no evidence that this is a prevalent activity and, even if it were, the capital stock is likely to be modernised and made more productive as a result. Moreover, if the alternative to relocation within the Union is relocation to a third country, then on any realistic assessment, there is a net gain to the EU's productive potential.

### Trends in FDI

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There are acute problems in measuring flows of FDI, which mean that any analysis of developments is inevitably subject to a high degree of uncertainty and accordingly must be heavily qualified (see Box on measurement problems). Moreover, since data on FDI are usually collected at a national level, analysis of the regional incidence of investment is *a priori* not possible. It is, nevertheless, of interest in this context to examine FDI flows into the Member States with relatively low levels of GDP per head. Unfortunately, the data on FDI for these countries are even less reliable than for other Member States and even greater caution needs to be applied to the interpretation of them. This is particularly the case for Ireland and Greece, since neither country provides detailed statistics on their FDI. Accordingly, the data presented below are estimates based on the statistics provided by partner countries.

### The major global players

At the global level, the stock of FDI at the end of 1996 is estimated to have been over \$3 trillion (around 2,700 billion ECU — more than the value of total world exports in the same year, of around 2,500 billion

ECU). Since 1980, FDI has grown three times faster than domestic investment. Nevertheless, it still accounts for only around 6% of the annual investment of industrialised economies. The major economies, the US, Japan and the EU, are the major sources of FDI. Over the 10 years, 1987 to 1996 inclusive, EU companies invested more than 315 billion ECU outside the Union, while the total FDI of Japan amounted to 220 billion ECU and of the US to 195 billion ECU. Inward investment into these three economies over the same period varied by much more (Graph 14). The US, due *inter alia* to its large market and relatively high growth rates, but perhaps most importantly reflecting its substantial deficit on current account, attracted foreign investment of more than 430 billion ECU, while under 7 billion ECU were invested in Japan by foreign companies over the same period. The EU was in between the two extremes, with inward investment of 247 billion ECU. While Japan was, therefore, the major net foreign investor over the period, reflecting its substantial surplus on current account, the US was the major net recipient of FDI.

It should be emphasised, however, that these data comprise only the acquisition of equity capital and 'other direct investment capital' and exclude reinvested earnings, which are likely to be more important the longer a foreign asset has been owned. Since US companies started investing abroad earlier than Japanese enterprises, the flow data probably understate US investment abroad. Indeed, at the end of 1996, the stock of US foreign assets amounted to 620 billion ECU, of which 269 billion ECU were in the EU, and these exceeded total liabilities by 146 billion ECU.

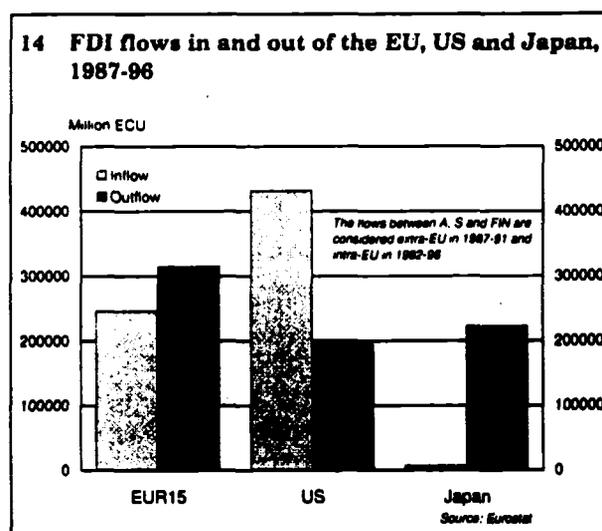
Moreover, there were significant variations in the scale of flows over the period. Recorded US outflows of FDI were only 56 billion ECU in the five years 1987 to 1991, but they increased to 139 billion ECU over the next five years. On the other hand, inflows fell from 241 billion ECU to 191 billion ECU between the two periods, so that net inward investment declined markedly. In the case of Japan, where inflows have always been very small, outflows reached a peak in 1989-90 when more than 22% of the total went to the EU, possibly because of a desire to be present within the Single Market, though also perhaps because of the relatively high rate of growth in the Union during this period. Since 1992, Japanese FDI has fallen to less than half its peak level and the share going to the EU has gone down to 15%.

### Flows between the EU and the rest of the world

More than half (51%) of EU outflows of FDI over the period 1987 to 1996 went to the US, though the proportion declined from over 60% in the first five years to 43% in the second (Table 22). Other Western European countries (EFTA) were the second largest destination accounting for just over 10% of the total over the 10 years, while little more than 1% went to Japan. Investment in Central and Eastern European countries and the former Soviet Union increased markedly over the period as the transition process got underway, accounting for around 12% of the total, much the same as the EFTA countries, in the five years 1992 to 1996.

The UK was the main source of outflows over the 10 years, accounting for over 21% of the total, followed closely by Germany (20%), France (19%) and the Netherlands (14%) (Table 23). However, the UK share fell significantly between the first and second halves of the period (from 31% to under 11%), with the result that in the years 1992 to 1996, it was much less than that of Germany and France (over 20% in each case)

The source of inflows shows some similarities to outflows. Again, the US and EFTA are the largest sources of investment in the Union, with shares of 40% and 26% respectively (Table 22), though EFTA's share fell compared with the first half of the period, when it was the largest investor in the EU, reflecting perhaps the build-up of the EEA. Over the years 1992 to 1996, more than half of all inflows into the Union came from



the US, with Japan accounting for 9%, though its share fell from 12½% in the first half of the period to 5½% in the second.

As in the case of outflows, the UK was the main player, receiving 36% of inflows, though, again as for outflows, its share fell markedly over the period (from 43% to 30% between the first and second halves), mainly reflecting a sharp decline in the share of US investment going to the UK (Table 24). The share going to other Member States was considerably smaller, France accounting for almost 15%, the Netherlands, Spain, Belgium/Luxembourg and Sweden accounting for between 6% and 10%. However, FDI flows into all these countries, except for Spain, increased in both nominal and relative terms between the first and second halves of the period, while flows into the UK actually declined in nominal terms.

Since Member States vary enormously in the size of their economies, the figures for shares of inward investment can be a misleading indicator both of their relative attractiveness to outside investors and of the potential importance of the inflows concerned for their economic development. Relating inflows to GDP gives a much more meaningful picture (Table 25). In practice, inward investment in relation to GDP was highest over the period for Ireland, while in both Spain and Portugal it was above the Union average, which is encouraging from the point of view of their economic convergence. It was also above average in the UK, Belgium/Luxembourg, the Netherlands and Sweden. On the other hand, the share of investment from outside the Union going to Greece was substantially below average given its level of GDP (only around a quarter of the EU average), as it was in Germany and Austria.

### Flows between Member States

Direct investment flows between Member States significantly exceeded flows with third countries during the 10 years 1987 to 1996 (425 billion ECU as against 315 billion ECU in terms of outflows). The relative size, however, of the two shifted significantly between the first and second halves of the period. In the years 1987 to 1991, in the run-up to the internal market, internal flows were only slightly greater than flows to third countries, but in the five years after, they increased markedly (to 248 billion ECU as against 157 billion ECU) while the latter remained much the same

in nominal terms. This may well reflect both the secure environment of the Single Market and the investment opportunities provided, coupled with the effects of a period of relative currency stability. As a result, economic integration within the Union increased further.

Much of this investment stemmed from France and Germany, each of which accounted for 22% of the total, while the Netherlands was responsible for a further 14%, more than the UK, which was the source of under 10% of total flows (Table 26). The UK share, however, rose in the second half of the period, while that of France fell and the German share increased slightly (to 23%), reflecting, in part, moves by the companies concerned to shift production to lower cost locations.

In relation to GDP, which again gives a more meaningful indication of the importance of the investment concerned to the Member State in question, the largest source of outflows was the Netherlands together with Belgium/Luxembourg and followed by Sweden and Ireland.

Again in relation to GDP, the largest recipients of inflows of investment from other Member States over the 10 years 1987 to 1996 were Ireland and Belgium/Luxembourg, with Portugal, the Netherlands and Spain being the third, fourth and fifth largest, respectively, but with significantly lower levels (Table 27). The large inflows into Belgium/Luxembourg consist *inter alia* of the establishment of bank branches in Luxembourg, because of its importance as a financial centre, coupled with the fiscal advantages involved. They also comprise the establishment of offices of multinationals in Brussels, attracted by its strategic position both geographically and politically. The relatively large inflows into three of the four Cohesion countries are again encouraging from the point of a view of convergence. This is particularly the case for Ireland, which, in addition to receiving the largest amount of inward investment over the period as a whole, experienced a significant increase in the second half as compared with the first.

### Effect of FDI flows on cohesion

In order better to assess the effect of FDI, it is useful to consider net investment flows for individual Member States and to standardise them in terms of population (Table 25). So far as intra-EU flows are concerned, all

four Cohesion countries were net recipients of investment from other Member States over the 10 years 1987 to 1996 and to that extent have been assisted in their economic development.

They have also been net recipients of inflows from outside the Union, especially Spain and Portugal, so that they have gained doubly from inward investment. Moreover, more recent data suggest that total inflows into Portugal increased substantially in 1997, to 1½ times their average value over the preceding 5 years (though given the data problems too much importance should not be attached to one year's figure).

Relative to population, apart from Belgium/Luxembourg, the largest inflows were into Ireland, followed by Spain and Portugal, while inflows into Greece were substantially lower. The UK, which also had a level of GDP per head below the Union average, though by much less, was a net recipient as well, while Finland, Germany and the Netherlands were the largest net exporters of capital.

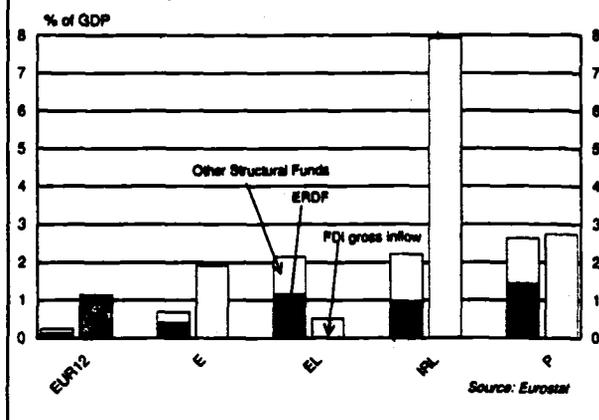
## FDI flows and the Structural Funds

Expenditure in the regions from the EU Structural Funds bears some relationship to inflows of FDI, insofar as it co-finances national schemes to provide investment aid in assisted regions and so encourages companies to locate projects there. In a more indirect way, the Funds support improvements in infrastructure and training to raise the skills of the work force, so making the areas concerned more attractive to foreign investors.

During the first programming period 1989 to 1993, net FDI inflows exceeded transfers from the Structural Funds in three of the four Cohesion countries (Graph 15), the only exception being Greece. Net inflows of FDI to Ireland amounted to almost 8% of GDP and, accordingly, more than 3½ times Structural Fund transfers.

FDI inflows into Spain increased rapidly in the second half of the 1980s to reach a peak of almost 10 billion ECU in 1990. While they remained high until 1994,

15 The relative importance of FDI and Structural Funds in the four Cohesion countries, 1989-93



they fell in the subsequent two years and outflows increased. More than two-thirds of inflows in each of the years 1992 to 1996 came from other Member States and half the flows went into manufacturing, with the food, chemical and motor vehicle industries being the main areas of investment, while in services they went predominantly into banking and business services, including computing, so helping to modernise the economy and increase its growth potential.

Direct investment in Portugal followed a similar path to that in Spain, rising throughout the 1980s, reaching a peak of almost 2 billion ECU in 1990 and declining steadily up to 1995, when it was only a quarter of its 1990 value, though, as noted above, there seems to have been a resurgence in 1997. In 1995 and 1996, outflows of FDI, mainly to other EU countries, for the first time exceeded inflows. Inflows of investment throughout the period 1987 to 1996 came predominantly from other Member States, and mainly from Spain, the UK, France and Germany. Most of the investment went into services, particularly banking, property and business services, though in a number of years, there were significant flows into electricity, gas and water as well as construction. The effect has been to improve the infrastructure of the economy, financial as well as physical, and to lay the basis for further investment and economic development generally.

Unfortunately, no recent data are available for Greece and Ireland on the details of investment.

[1] European Commission (1994), *Competitiveness and cohesion: trends in the regions*.

[2] See Eurostat (1998), *FDI statistics*, Part C: Methodology issues.

## 2.5 Infrastructure and human capital

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### **The role of infrastructure and human capital in regional development**

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Differences in infrastructure are recognised as contributing significantly to variations in regional competitiveness. However, competitiveness depends not only on endowments of physical infrastructure but, to an increasing extent, on those of human capital or the skills of the work force. Indeed, effective education and training systems can make as much contribution to economic development as advanced transport and telecommunication networks. The economically stronger regions in the EU with high levels of GDP per head are generally better endowed with both types of capital than lagging regions.

The importance of infrastructure is reflected in the priority it is accorded in development-related expenditure in Member States. Government fixed investment, which consists mainly of capital expenditure on physical infrastructure, accounts for between 10% and 20% of total gross domestic fixed capital formation in Union countries. Part of such expenditure goes on education and training, on the construction of buildings and the purchase of equipment. By far the most important part of investment in education and training, however, the spending on teachers and instructors and the books and other material needed for teaching, is classified in the national accounts as current expenditure despite the addition to the capital stock, broadly defined, which it gives rise to. This element of expenditure amounts to between 4% and 7% of GDP across the Union.

A significant proportion of Union aid to the lagging regions also consists of investment in physical infrastructure and human capital. Over the 1989 to 1993 programming period, some 35% of total expenditure

from the Structural Funds in Objective 1 regions (16 billion ECU at 1994 prices) went on investment in basic infrastructure and a further 22% (over 10 billion ECU) on investment in human capital.

Over the 1994 to 1999 programming period, investment in basic infrastructure in Objective 1 regions from the Funds, including from the new Cohesion Fund, increased to 45 billion ECU or 41% of the total spent, while expenditure in these regions on the development of human resources rose to 29 billion ECU, 26% of total spending. In addition, the European Investment Bank will have provided some 25 billion ECU in loan finance for investment in basic infrastructure in such regions by the end of the 10-year period 1989 to 1999.

Comparison of infrastructure endowment between regions raises a number of conceptual and methodological issues which need to be considered, as regards, first, the most appropriate indicators for measurement to use and, secondly, assessment of the effects of such endowment on the regional economy.

### **Defining appropriate indicators**

The measurement problem consists, first, of identifying an appropriate — and concise — set of indicators of the scale and, perhaps more importantly, the quality of endowment of the different kinds of infrastructure in individual regions. Second, the indicators need to be sufficiently simple for the exercise to be viable and capable of being aggregated into an overall measure of endowment. Thirdly, account needs to be taken of links between different kinds of infrastructure both within and between regions, such as the standard of connections between the regional transport network and the national and international systems.

The simplest measure of infrastructure is the physical scale of provision in relation to potential use, such as the length of roads per square kilometre or per head of population. Alternatively, for some kinds of infrastructure, the proportion of population with access to particular facilities may be more relevant, such as to the public water supply. Indicators of quality are slightly more tricky to define, tend to be specific to individual kinds of infrastructure and usually have to be indirect pointers to the standard of provision. For the rail network, for example, the extent of electrification and the number of separate tracks, which affect both the speed of the service and its carrying capacity, can be used to give a reasonable indication of quality.

However, neither indicators of scale nor of quality can convey how far the existing endowment in any region is suitable to its development needs. Since the existing infrastructure in use will have typically been constructed over a great many years, it may reflect past requirements and past patterns of development rather than present and prospective ones. Although there may be an extensive transport network, for example, it may be in the wrong place and lack efficient connections. In addition, while it is possible to devise indicators of different types of infrastructure, it is much more difficult to compare endowment of one type with that of another in a meaningful way and to assess how far, for example, deficiency in one aspect is compensated by a high standard of provision in another.

Indicators of endowment, therefore, can only be a starting-point for evaluating regional disparities in provision and for identifying major needs for investment in relation to economic development. In this regard, moreover, it should also be borne in mind that a high standard of infrastructure endowment is no guarantee of the economic success of a region. Similarly, though major deficiencies may represent a serious obstacle to development, they may not prevent it from occurring. In sum, therefore, while the measurement of infrastructure endowment is important for understanding differences in regional performance, the indicators devised need to be interpreted with caution from a number of perspectives.

### **Economic impact of infrastructure**

Simply identifying the level of physical infrastructure in different regions says little, of course, about its relationship to economic development. Although the as-

sociation between the two is not in doubt, the nature of the causal link is still the subject of debate. Some of the more central regions of the Union, for example, arguably face constraints on future development, despite high levels of infrastructure endowment, because of the inability of the structure in place to cope with further growth in usage. Equally, a relatively poor endowment in physical infrastructure has not prevented certain peripheral regions, notably in Ireland, from achieving high rates of economic growth, though growth has usually been accompanied by increased investment to improve provision (which raises an important question about whether such investment should precede or follow economic development).

A key issue concerning the effects on the regional economy of investment in infrastructure relates to the fact that, while the costs generally fall on the public sector, the benefits accrue to the business sector in terms of lower production costs — because of, for example, improvements in transport and communications, easier access to markets and suppliers, better support services and a more highly qualified work force. In some degree, this is inevitable because of the 'public good' aspect of much of infrastructure which makes it difficult, or costly, to restrict its use to those who are willing to pay the full costs of provision.

Nevertheless, partly because of advances in technology which have increased the possibility and reduced the cost of imposing pricing mechanisms, there is a growing interest in achieving a closer relationship between the financing of infrastructure provision and its use once available. Pricing road use, through tolls or metering the time spent in congested areas, or imposing taxes or charges related to the damage caused to the environment — physical as well as natural — by particular kinds of activity or behaviour are examples. In addition, there are increasing attempts to involve the business sector in financing infrastructure investment and in operating the facilities once constructed in a number of Member States.

### **Regional endowment of transport infrastructure**

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As demonstrated in the Commission's *First Report on Economic and Social Cohesion* in 1996, transport

plays a key role in efforts to reduce regional disparities in economic performance across the Union. Such disparities are closely linked to geographical location and accessibility, in the sense that the more peripheral the region and the less accessible, the lower its GDP per head is likely to be. While there are many other factors involved, it seems to be the case that, even in an age of information technology and significant advances in telecommunications, transport facilities for both passengers and freight are often critical for regional competitiveness and prosperity.

Investment in transport alone, however, will not lead to a narrowing of regional development disparities or, indeed, necessarily contribute significantly to regional growth. For this to be the case, complementary action needs to be taken to ensure that disadvantaged regions are in a position to profit from the opportunities created by improvements in transport. In practice, the evidence suggests that carefully-managed investment in transport tends to have a beneficial long-term effect on business investment and economic development in regions, although there are wide variations in the extent to which this happens.<sup>1</sup>

Transport, moreover, cannot be considered in isolation of regional needs. It is not sufficient merely to equalise endowment across the Union in some simple sense. More geographically remote and less densely populated regions are likely to need greater provision in terms of roads or railways per head of population than more central, more densely populated ones. In addition, areas on the extreme periphery of the Union, especially islands, will tend to require more port and airport facilities than elsewhere. Equally, in the more congested central regions of Europe, the combination of transit and local traffic may necessitate a higher than average level of provision relative to both area and population. The problem is to determine the degree of under-provision of infrastructure in the light of these kinds of variation in need.

A further consideration is that, unlike most other types of infrastructure, transport systems can yield significant benefits to people and businesses who are not resident in the region where they are located. The costs, however, to the environment as well as to the national or regional budget, tend to fall on local residents. This makes for difficulty in deciding the reme-

dial action to be taken once a problem or deficiency in the system has been identified.

## Roads

Most of both passenger and freight traffic in the Union goes by road. In 1996, nearly 75% of freight movements (measured in terms of tonne-kilometres) and more than 85% of passenger movements (measured in passenger-kilometres) were made by road. In the case of freight, there has been a steady increase in the importance of road transport over the years. In 1970, for example, less than 50% of total goods transport was by road. In the case of passengers, roads were already the major means of travel in 1970. The importance of the motor car, however, has risen appreciably while that of buses has declined — from accounting for 12% of passenger transport in 1970 to just 8% now.<sup>2</sup>

A good road system is not only beneficial in itself but is also important to ensure the effective use of other forms of transport, particularly air and sea ports

The less developed and generally peripheral parts of the Union tend to have a less extensive road network than other parts. In terms of a basic composite indicator which gives equal weight to surface area and population, the road network in Belgium is over 3 times more extensive than the EU average (according to data for 1994), while in France, the Netherlands, Luxembourg and Denmark, it is over 1½ times more extensive (Graph 16). By contrast, the network is much less extensive in most of the less developed parts, under 50% of the average in Spain and Greece and only around 75% of the average in Portugal. The main exception to this tendency is Ireland, where the road network is twice as extensive as in the EU generally, given its land area and population, which in part reflects the relatively scattered distribution of settlements.

Most of the roads in Ireland, however, are of relatively low standard, as is revealed by the indicator for motorways, which is the most commonly used measure of road standards and carrying capacity. In terms of length of motorway, again weighted by land area and population, only the UK, Sweden and Finland of the Northern Member States have a less extensive network than the EU average, while in the

Benelux countries it is 2½ times more extensive than average (Graph 17). In Greece and Ireland, in stark contrast, it is less than 20% of the average and in Portugal, only around 50%. In Spain, on the other hand, there are more motorways than the EU average given its size and population.

The overall extent of the road network, relative to area and population, does not differ significantly between regions within Member States. Motorways, however, tend to be concentrated in the more central areas with higher levels of economic activity. In France, there are significantly fewer kilometres of motorway in the West and South-West than over the country as a whole (some 30–40% less). Similarly, in Sweden and Finland, where the overall provision is well below the Union average, it is well above this average in the Stockholm region (172% of average) and in Uusimaa, where Helsinki is situated (122%), whereas in no Northern region does the figure exceed 20% of the average.

In the less developed regions, the length of motorway in most of the new Länder in Eastern Germany is only around 65% of the EU average and well below the figure for Germany as a whole (over 1½ times higher than average). The same is true in the North-West of Spain. Southern Italy and Northern Portugal, while in Greece, motorways are almost entirely concentrated around Athens and there are none at all in several Northern regions.

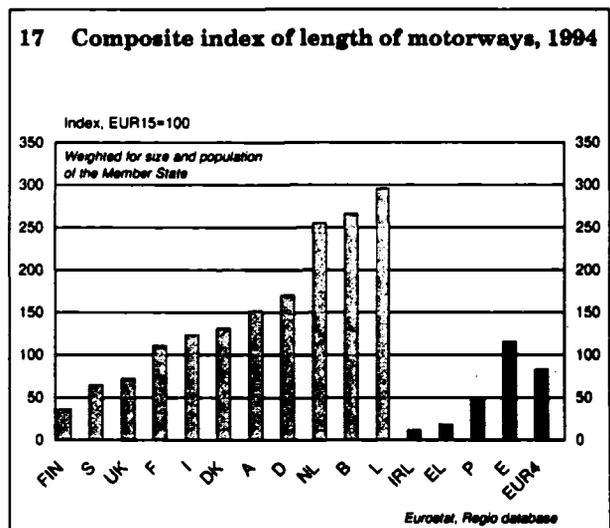
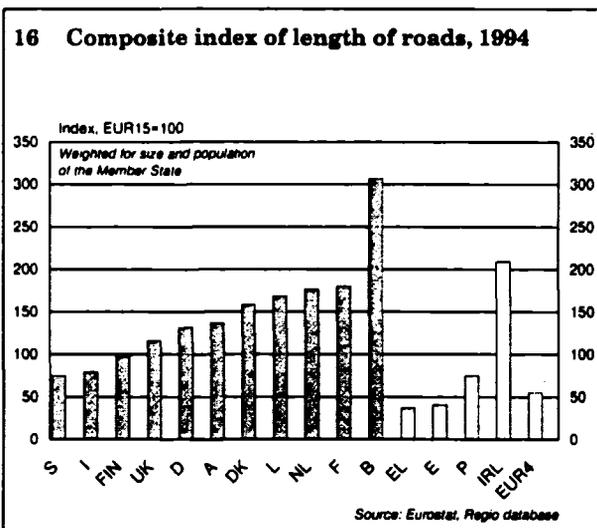
There is no harmonised measure available for the quality of the road network across the Union or the extent of congestion at peak times.

### Rail

For rail transport, there is less variation in the extent of provision than for roads, though the differences between Member States and regions remain significant. Moreover, the spatial pattern of variation is similar to that for roads. The network is more extensive than elsewhere, relative to land area and population, in Luxembourg, Germany, Sweden, Finland, Belgium and Austria, where it is 1½ times or more the EU average. As for roads, the network is much less extensive than in other parts of the Union in Greece, Spain and Portugal, in all of which it is around 60% or less of the EU average, while in Ireland, it is only slightly below the average (Graph 18).

Unlike in the case of roads, the length of railway varies widely between regions in the same country. In general, the network is most extensive in large urban areas, such as the Brussels-Capital region in Belgium (where it is 8 times the EU average), Vienna (4½ times), Berlin (over 3½ times) and Ile de France (over 1½ times). On the other hand, it is also extensive in many remote and sparsely-populated regions, such as in the North of Sweden, where figures range from 2½ times the EU average in Norra Mellansverige to 4½ times in Oevre Norrland, or in Finland.

This is not the case, however, in the Southern, less-developed Member States, where in a number of regions, the length of the rail network is significantly less than the average for the country as a whole, which, in turn, is well below the Union average. In the North of Portugal and Asturias in Spain, the figure is only around 45% of the EU average and, more extremely,



over half the regions in Greece have no rail network at all.

By contrast, in all the new Länder in the East of Germany, the extent of the rail network exceeds that in the rest of the country and, in each case, is over twice the EU average.

There are two indicators of the quality of the rail network which are available for all EU Member States, though not for regions — the proportion of the network which is double track and proportion of lines which are electrified. Double track rail lines obviously allow more traffic and are likely to reduce journey times as well as cut down accidents, while electrification tends to increase speed and give a better image of rail as a mode of transport.

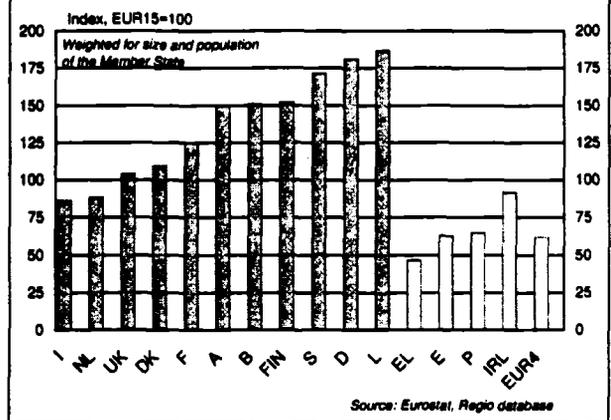
In the case of double track, there is considerable variation between the central parts of the Union and the periphery, though for a number of different reasons. In Belgium, the Netherlands and the UK, between 65% and 75% of the network is double track, significantly more than anywhere else in the Union, while in the four Cohesion countries, it is just over 25% in Ireland and Spain, around 15% in Portugal and only 10% in Greece (Graph 19). In all four countries, the figures are less than in other Member States, with the exception of Sweden and Finland, where only around 10% of rail lines are double track because of the very sparsely populated nature of most of their land areas.

A broadly similar pattern emerges as regards electrification, though with a few differences. While the proportion of rail lines which are electrified is high in Belgium (70%) and the Netherlands (72%), it is well below the level in most other Member States in the UK (30%) (Graph 20). In the Cohesion countries, only in Spain is the extent of electrification comparable to that in most other parts of the Union, while in Portugal, under 20% of lines are electrified, in Ireland, virtually none and in Greece none at all.

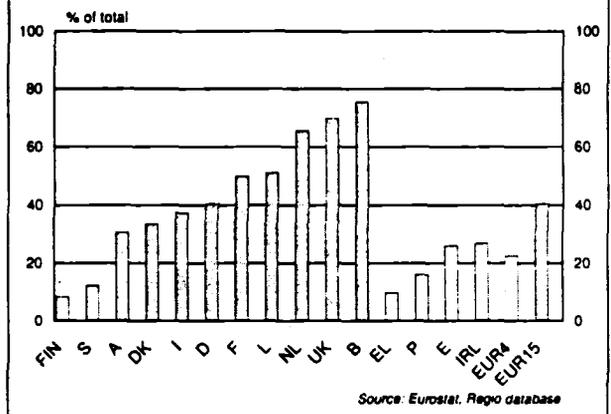
## Energy

Economic growth and development depend in large measure on the availability of reliable sources of energy at reasonable cost. At the same time, the relationship between growth and the consumption of energy tends to change over time, reflecting changes

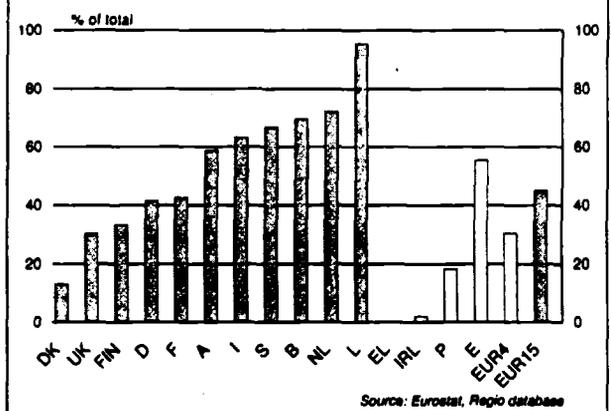
18 Composite index of length of railways, 1994

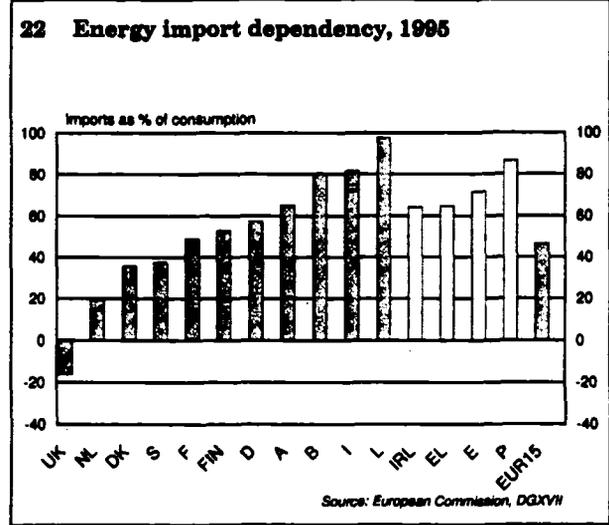
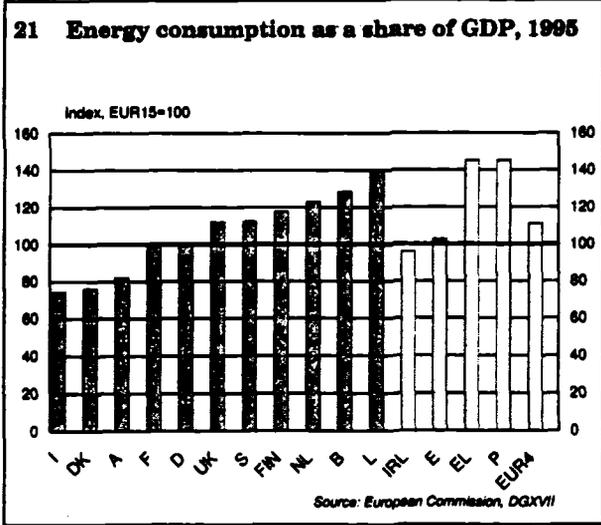


19 Percentage of railways which are at least double track, 1994



20 Percentage of railways which are electrified, 1994



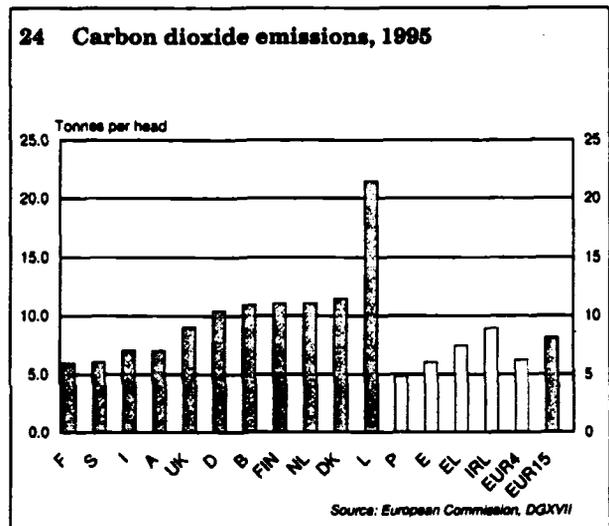
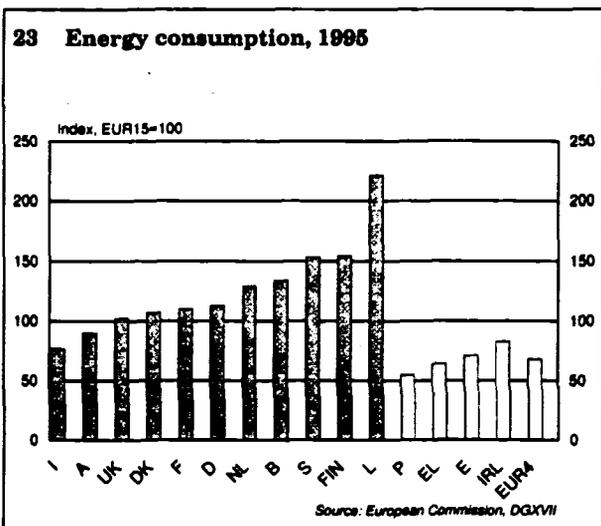


in the pattern of consumer demand, the structure of production and the pressure for energy saving, which, in turn, are conditioned by political, social and cultural factors as well as by technical progress, the fiscal system and the extent of concern for the environment.

In the EU, the less favoured regions still for the most part show the most unfavourable situation as regards energy. In general, they have a higher energy intensity (energy consumption per unit of GDP) and greater dependence on imported sources of energy than other parts of the Union. This highlights the need to develop energy infrastructure, reducing the effects of isolation and dependency on one source or supply. Other measures to boost competition also have a part to play by reducing energy costs, which are a major input to industry and therefore a key determinant of price competitiveness.

At the same, because of their relatively low level of GDP per head, the less favoured regions tend to consume less energy in absolute terms and contribute less to toxic emissions, despite a high dependence of electricity generation on fossil fuels. Nevertheless, if the aim of policy is to support their convergence to a comparable level of GDP per head as in the rest of the Union, it also has to try to ensure that their energy intensity is significantly reduced as this occurs.

Energy consumption relative to GDP in Greece and Portugal, therefore, is over 40% higher than the EU average (Graph 21). In Spain and Ireland, on the other hand, it is below average. Conversely, energy intensity is well above average in the Netherlands, Belgium and Luxembourg. Greece and Portugal are also relatively dependent on imports of energy, though this is equally true of Spain and Ireland. In each case, around 65% or more of total energy consumed is imported and almost



90% in the case of Portugal (Graph 22). For most other Member States, imports account for under 60% of the energy consumed and for Denmark, Sweden and the Netherlands, under 40%, while the UK is still a net exporter of energy. For Luxembourg, Italy and Belgium, however, 80% or more of the energy used comes from abroad.

The four Cohesion countries also consume less energy per head of population than other Member States, as noted above, partly reflecting their relatively low level of GDP per head. In Portugal and Greece, consumption per inhabitant amounts to only just over 50% of the EU average, in Spain, to around 70% and in Ireland, just over 80%, in each case, less than in any other Member State apart from Italy (Graph 23). By contrast, Sweden and Finland, in part because of the harsh climate, consume 1½ times more than the EU average and Luxembourg, well over twice more.

Lower energy consumption in the Cohesion countries is reflected in lower levels of carbon dioxide (CO<sub>2</sub>) emissions than elsewhere (Graph 24), though not to the extent implied by their relative level of energy use because of the high degree of dependence on fossil fuels (oil, gas and coal) — or thermal sources — for electricity generation.

Renewable sources of energy can assist in the development of the less favoured regions, contributing to a sound energy balance and reducing dependence on one source. The dispersed nature of renewables means that they lend themselves to decentralisation; islands and remote areas are among the most obvious beneficiaries of the use of renewable energy. The high employment content of renewable sources is an additional benefit in less favoured regions.

## Telecommunications

Telecommunications are important, both in providing direct support for regional economic development and as a complement to systems of transport. Indeed, while even the most highly developed transport system can alleviate the effect of distance between regions only to a limited extent, modern telecommunication systems are capable of eliminating distance altogether as an obstacle to the development of a wide range of economic activities, especially in more advanced, and rapidly-growing, services.

In effect, recent advances in informatics and telecommunications have led to the introduction of entirely new services, such as on-line computer support, tele-banking and the broad range of commercial activities generated by the internet. Electronic commerce presents enormous opportunities for business in Europe, particularly SMEs, and a proactive approach at the regional level could boost growth and employment. The Commission has recently presented a proposal for a directive on electronic commerce in the internal market. This proposal aims to establish a clear framework, helping consumers and operators to reap the full benefits of the information society.

The physical location of the providers of such services is dependent principally on the availability of an adequate and competitive telecommunications infrastructure, in combination with the necessary skills in the work force, rather than on physical closeness to the market. Even in the case of manufacturing, however, where distance is still an issue, efficient modern telephone, fax and data transmission systems are essential to competitiveness.

In these circumstances, an effective and competitive telecommunication system is a key factor in regional economic development. At the same time, telecommunications cannot substitute entirely for physical contact. Indeed, improvements in telecommunication links are likely to stimulate increased demand for transport, both directly and indirectly, through their boost to economic development. Accordingly, systems of transport and telecommunications can be expected to develop in parallel rather than as alternatives to each other.

The basic indicator of infrastructure in relation to telecommunications is the number of telephone lines available, while the proportion of lines connected to digital exchanges gives a reasonable indication of the quality of the service. Indeed, only digital connections allow access to the advanced networks which are an essential element of modern data transmission systems. In the 1990s, substantial advances have been made in modernising the telecommunication networks across the Union, notably in the extension of digital networks, but gaps remain, especially in the less developed regions.

Despite rapid growth in telephone networks, there are still significant variations between Member States

and regions (Graph 25). In most of the more developed Member States, there are between 50 and slightly over 60 main lines per 100 inhabitants, with Sweden having the highest network density, with 63 lines per 100 inhabitants. Belgium and Austria are exceptions, with just over 45 lines per 100 inhabitants. On the other hand, three of the four Cohesion countries, Spain, Ireland and Portugal, have under 40 lines per 100 inhabitants, while Greece has 52.

There is comparatively little variation between regions in the number of lines in relation to population within Member States. The main exception is the new Länder in Eastern Germany where, with the exception of Berlin, no region has more than 40 lines per 100 inhabitants, as compared to a national average of 53 lines. An interesting feature is that in a number of regions where tourism is important, such as the Algarve in Portugal, there is a relatively high number of lines relative to resident population, reflecting the lines installed in hotels and other tourist facilities. The same is the case in the Nordic countries, where a relatively large number of lines in sparsely populated regions is a reflection of the significant number of holiday homes.

Digital systems are now the norm across most of the EU, reflecting the generally high level of investment in the modernisation of telecommunication networks in recent years. By 1996, in 6 Member States (France, Luxembourg, Netherlands, Finland Sweden and the UK), between 90% and 100% of lines were connected to digital exchanges, and in all the other more developed countries, the figure was over 70%. In contrast to the overall number of lines, the rate of

digitalisation was not much lower in the four Cohesion countries, with a figure of 83% in Ireland, 79% in Portugal and 67% in Spain. Only in Greece, where the figure was only 43%, was the rate substantially less than elsewhere in the Union.

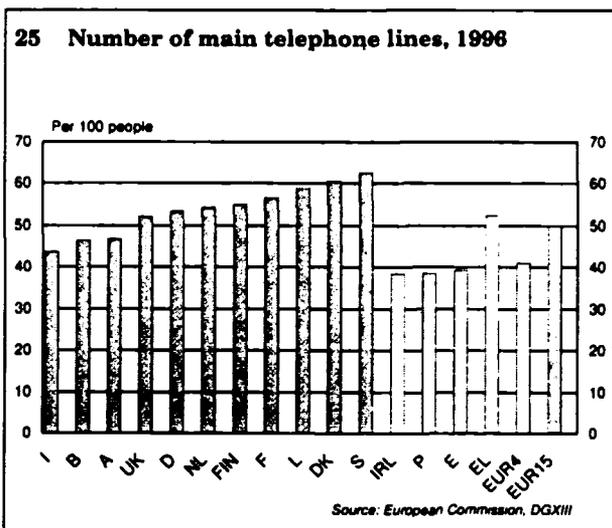
In recent years, with the widespread liberalisation and privatisation of telephone networks, there has been concern that the less developed and more remote regions might be left behind in terms of access to modern telecommunication systems. In general, however, the regional data on digitalisation does not seem to support this fear. In most Member States, the proportion of lines connected to digital exchanges does not vary much between regions, suggesting that networks have been modernised across countries as a whole without making any regional distinction.

## Environmental facilities and water supply

Environmental infrastructure — considered here in terms of the capacity to supply adequate amounts of clean water and to dispose of domestic and industrial waste — is both a contributor to economic activity and a source of protection against ecological damage as development takes place. It is, therefore, a key factor in ensuring the sustainability of growth.

Problems of environmental damage are widespread throughout the Union. In the case of contaminated land and urban dereliction, in particular, problems tend to be greater in developed areas in industrial decline than in less developed regions.

The physical requirement for new environmental infrastructure is difficult to estimate. Continuing change in environmental policy and standards, uncertainty over future economic growth and changes in technology complicate the picture, while, at the same time, there is a serious lack of data on existing facilities. In these circumstances, it is only possible to give a broad indication of the scale of differences in endowment across the EU, and generally only at national rather than regional level.



## Water resources

Water is perhaps the most important natural resource for agriculture and households and one of the most important for many industries. Proper management of the environment requires that the process of supplying water does not interfere unduly with the ecosystem. The availability of water depends on geographical location, geology and climate, while the adequacy of a given supply can only be assessed in relation to the pattern of economic development and the size and spatial distribution of the population. Many poorer regions in Southern Europe have a shortage of water and seasonal fluctuations in both supply and demand as well as a greater possibility of contamination of reserves than elsewhere in the Union. Such 'water stress', however, can also occur in Northern parts of the Union where an apparently adequate supply can be stretched by high population density and/or high industrial and agricultural consumption.

An indication of water stress is given by total renewable fresh water resources per inhabitant in relation to the EU average (Graph 26). The situation in this regard varies widely across the Union, with Sweden and Finland having up to six times as much water available as the EU average, while 7 Member States (Belgium, Denmark, Germany, Spain, France, Italy and the UK) have below average supply.

In the Northern areas, the problem takes the form of high population density combined with a high level of industrial development, and in the South, of low rainfall, coupled with high evaporation and high consumption by agriculture (for irrigation). In Portugal

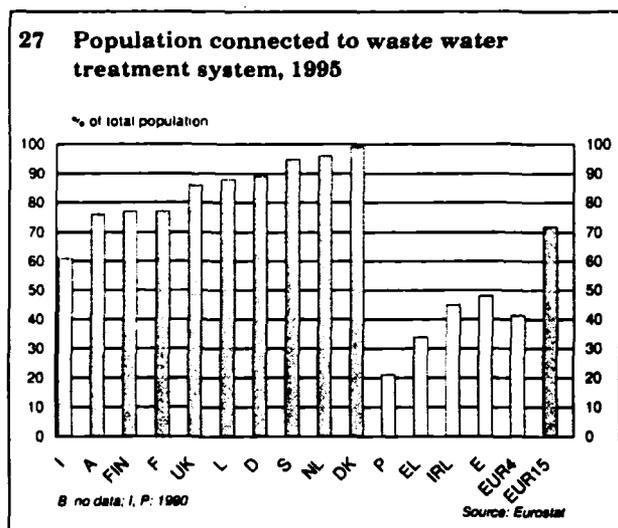
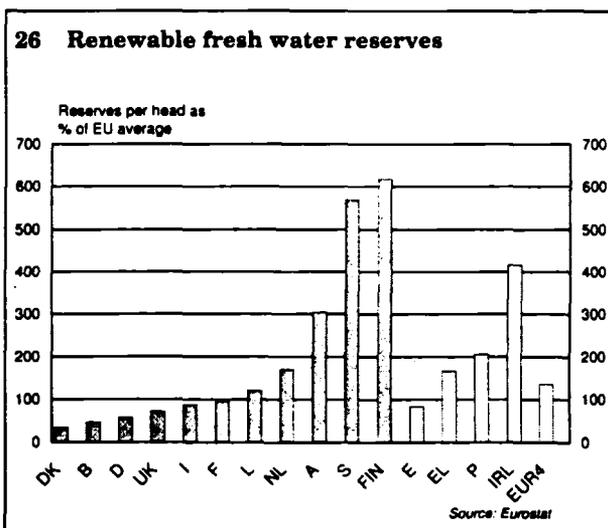
and Greece, however, water is relatively abundant despite low rainfall because of substantial inflows from rivers which have their source in neighbouring countries, which is also the case in Austria. Almost half of the water supply in Portugal, for example, comes from rivers originating in Spain.

## Water distribution infrastructure

The existence of a given amount of water in relation to population gives only a first indication of the availability of supply. To be effective, it has to be combined with an adequate system of water distribution, something which, even in the 1990s, does not apply in all Member States. While virtually all households are connected to the public water supply in Germany and Denmark, in Finland and Austria, the proportion falls to around 85% and in Ireland to only 72%, though in some Member States, the figure may reflect the existence of significant private water provision, notably in rural areas, rather than the absence of piped supply as such.

## Waste water

There is an even greater range of variation in connection to waste water treatment systems. At one extreme, virtually every household is connected in Denmark and over 85% in Germany, Luxembourg, the Netherlands, Sweden and the UK. At the other extreme, only 34% of households in Greece have access to waste water treatment facilities, while in Spain and Ireland, the figure is below 50% (Graph 27).



### Municipal waste

Since most people in the Union live in urban areas, the level of municipal waste generated in relation to population is an important indicator of the impact of human activity on the environment. In general, this is related to levels of income and it is, therefore, to be expected that the four Cohesion countries generate lower amounts of municipal waste than countries with higher levels of GDP per head. The annual level of municipal waste generated amounts to 310 kilograms per head in Greece, around 370 kilograms per head in Portugal and Spain and nearly 440 in Ireland. Apart from the latter, this is lower than in all other Member States, except for Germany, the figures ranging from around 400 kilograms per head in Finland to nearly 600 in the Netherlands and over 600 in the UK (Graph 28).

Municipal waste can be managed by incineration, composting, recycling or landfill. Landfill is the most common and least expensive method of disposal, and is used in most Cohesion countries, the proportion varying from 85% in Spain to 100% in Ireland. However, landfill is also a significant method of waste management in most other Member States, notably Italy (86%), Finland (77%) and the UK (70%) (Graph 28). The other principal method of disposal is incineration, which itself can have damaging effects on the environment. The highest proportion of waste disposed of in this way is in Luxembourg (71%), Denmark (63%) and Belgium (49%) (Graph 28).

Recycling is preferable to landfill and incineration, yet the scale of the former varies considerably between Member States. There is therefore a role for regional

waste management policies in promoting recycling over the coming years.

### Regional differences in human capital endowment

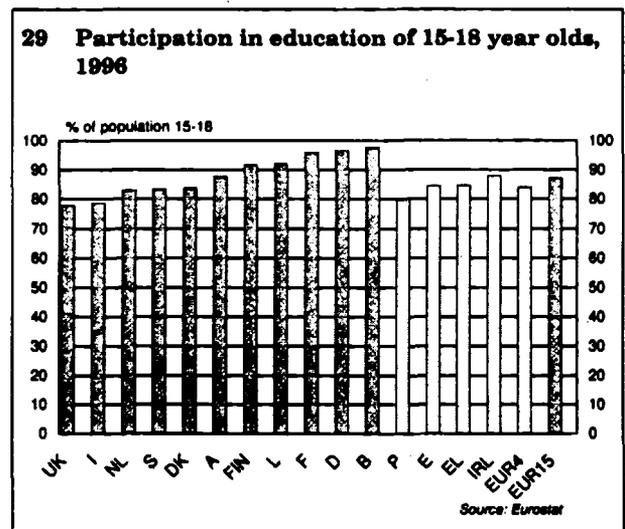
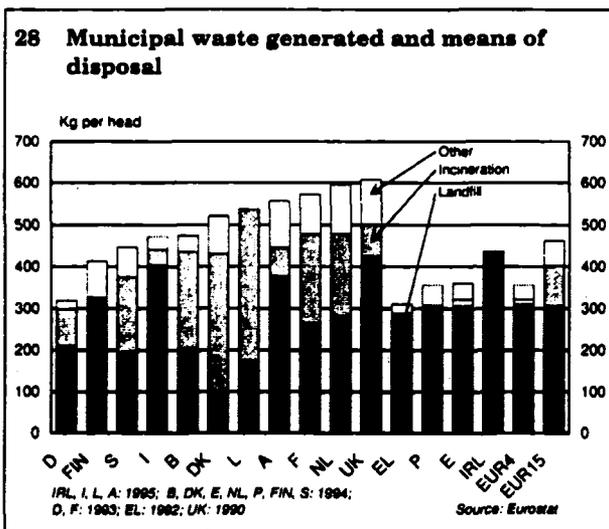
As noted above, the competitiveness of regions depends not only on physical infrastructure endowment but also, to an increasing extent, on the skills of the regional work force. Effective educational and training systems are, therefore, important in strengthening comparative advantage. Despite efforts made over recent years, however, disparities are still significant.

A priority across the EU is to adjust educational and training systems to the profound changes which are taking place. The need is to respond to technological advances, which are making existing skills redundant, and to demographic trends, which are reducing the number of young people entering the labour market.

### Disparities in educational participation rates

Basic education is essential to improving the capabilities of the future work force across the Union. It gives young people a better chance of finding their first job and is essential preparation for further education and vocational training.

In all Member States, all children remain in compulsory education up to the age of 15 at least, while the number



staying on to undertake further education or vocational training courses has risen significantly in recent years. In 5 of the more developed countries in the Union, over 90% of 15 to 18 year olds were in education in 1996, while in a sixth, it was just under 90%. In three others (the Netherlands, Sweden and Denmark), however, it was only just over 80%, similar to the proportion in three of the four Cohesion countries — Ireland being the exception with a figure of 88%. In the UK (78%) and Italy (79%), the proportion was lower than in any of the Cohesion countries (Graph 29).

There are larger differences in respect of further education, though these are not wholly in line with relative levels of GDP per head. While in a number of the most developed Member States, the proportion of 19 to 22 year olds in education and training was around 60% or more in 1996, in Austria, the proportion was only 40%, in Sweden, 34% and in the UK, 31% (Graph 33). In Spain, by contrast, the figure was 55%, in Portugal, 50% and in Greece, 44%, all higher than in these three countries, as it was in Ireland (41%), though only slightly so.

Of those remaining in education beyond compulsory schooling, however, a higher proportion tends to undertake vocational courses — which arguably provide some young people with a more practical and skills-based preparation for the current demands of the labour market — in the more developed Member States than in the Cohesion countries, where a more traditional approach has been favoured. While the relative number of young people aged 15 to 19 in vocational education and training ranged from just over 20% in Spain and Greece in 1993–94 to 17% in Ireland and just 12% in Portugal, in all of the other Member States, except Denmark (21%) and Finland (24%), the proportion was over 25% and 40% or above in Germany (40%), Belgium (45%) and Austria (55%) (Graph 30).

### Disparities in educational attainment

The educational attainment of working-age population is a key indicator of the availability of skilled labour in any region and significant disparities still exist in the average attainment level across the Union. In the least developed Member States, a large proportion of the population aged 25 to 59 (ie excluding those under 25, many of whom will not yet have completed their education) have no educational qualifica-

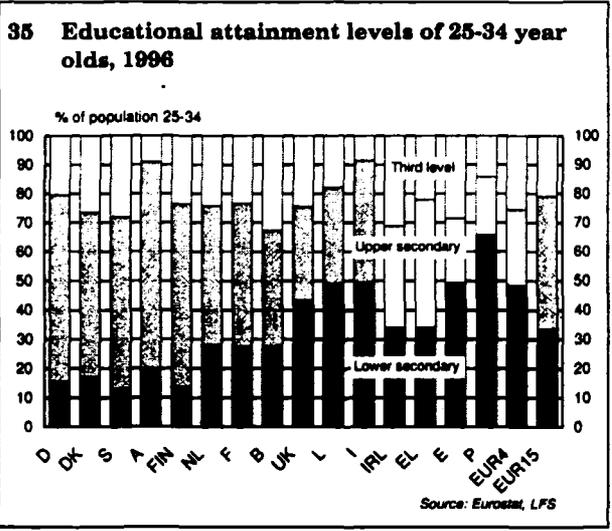
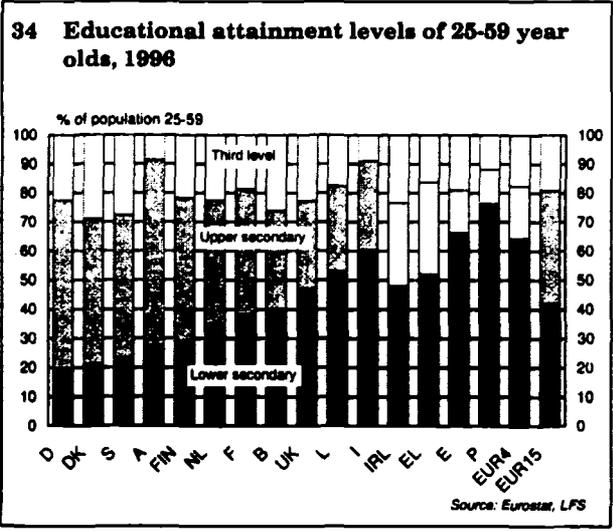
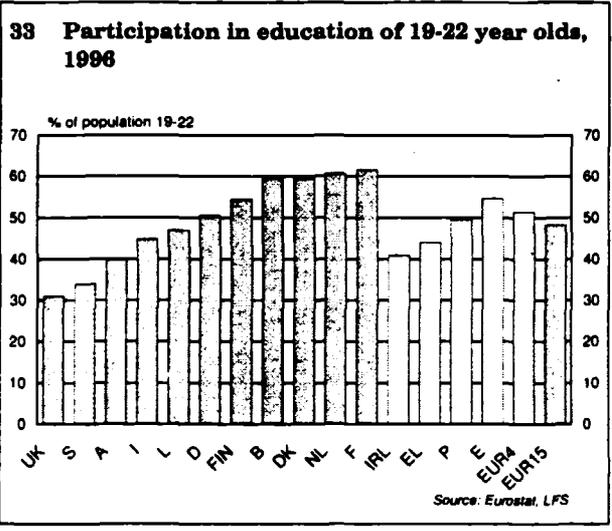
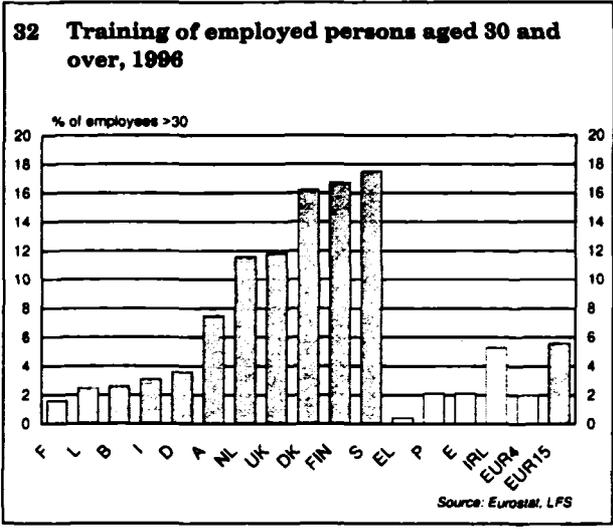
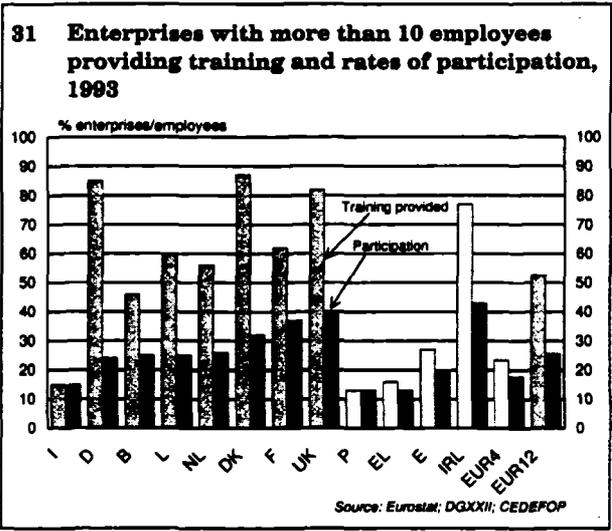
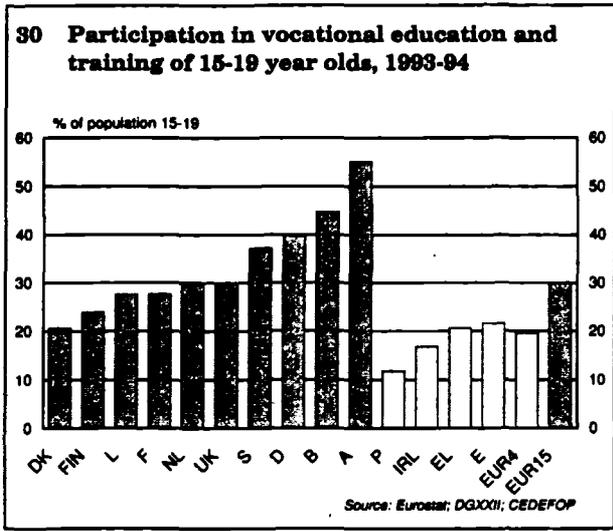
tions beyond compulsory schooling — three-quarters in Portugal, two-thirds in Spain, over half in Greece (52%) and just under half in Ireland (48%) (Graph 34). This is more in each case than in the rest the Union, with the exception of Italy (60%) and Luxembourg (53%), though in the UK (47%), the proportion is only marginally lower than in Ireland. In other Member States, the proportion is 40% or less and under 30% in the three Nordic countries, Germany and Austria.

The disparities, however, are gradually being reduced. For those aged 25 to 34, who completed their education within the past 15 years or so, the proportion who have not progressed beyond basic schooling falls to 66% in Portugal, half in Spain, and only just over a third in Greece and just under a third in Ireland, in both cases less than in the UK as well as in Italy and Luxembourg (Graph 35). At the same time, the proportion of people in this age group with no qualifications beyond basic schooling is also much lower in most other Member States — under 20% in the three Nordic countries. Nevertheless, as young people who are completing their education at the present time join the work force, the gap should narrow further.

### Disparities in access to continuous training

The lack of reliable data across the Union on training once people have completed their education and joined the work force makes it impossible to assess satisfactorily the difference in provision between different parts of the EU. Nevertheless, a recent survey of enterprises with 10 or more employees (conducted in all Member States apart from Austria, Finland and Sweden), found that fewer of them provide training to their workers in Portugal, Greece and Spain (under 30% in the last and under 20% in the first two) than in other Member States, except for Italy. In Ireland, on the other hand, the proportion (almost 80%) was above average (Graph 31). There remains, however, a question mark over the degree of comparability of these findings.

The same applies, and to even greater extent, to the data available on the relative number of people in employment aged 30 and over who receive training. According to the 1996 Union Labour Force Survey, only around 2% or fewer of those surveyed in Greece, Portugal and Spain had undertaken any training during the



preceding four weeks, less than in any other Member State apart from France, while in Ireland, the figure was over 5%, more than in 5 countries with higher GDP per head (Graph 32). While these figures are almost certainly not directly comparable between countries, primarily because of the different definitions of training adopted (in France and Portugal, they relate only to formal training courses), they suggest that access to continuous training may well be less than elsewhere in the EU in at least three of the Cohesion countries.

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[1] London School of Economics (1997), *The socio-economic impact of projects financed by the Cohesion Fund*.

[2] European Commission, DG VII, *Transport in Figures*.

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## 2.6 Institutions and social capital

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Growth and development depend not just on tangible — or 'hard' — factors such as infrastructure and business investment, but also on more intangible — or 'soft' — factors, especially the underlying institutional structure. Factors such as social capital and the efficiency and effectiveness of public administration are increasingly recognised as key features contributing to regional development. This section highlights some of the issues surrounding such factors.

The first half of the section surveys the role of institutions in regional development, focusing, in particular, on social capital and public administration. The second half draws on the results of evaluations and on a study<sup>1</sup> (including interviews with those involved in six selected Member States: Germany, Spain, Ireland, Portugal, Finland and the UK) assessing the contribution which the delivery system for the Structural Funds has made to institutional development in the regions.

### The role of institutions in regional development

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The institutional structure can broadly be defined as *'the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social or economic'*.<sup>2</sup> It, therefore, incorporates both the 'institutions', such as businesses, trade unions and government, which are the decision-making units within an economy and the 'institutional' framework within which they make their decisions. The latter includes aspects such as the prevailing culture, historical tradition, social norms of behaviour and the legal and fiscal systems which have been established.

Traditionally, economic analysis tended to neglect the role of such institutions, except insofar as they constituted barriers to effective competition. More recently, the focus has been broadened, with the discovery that many of the economic tools used to describe the functioning of markets can also be applied to explaining the working of institutions. The rapidly growing literature highlights the fact that institutions are fundamental to the behaviour of economies, that their interaction with the market is rich and complex and that there are both positive and negative effects.

Indeed in modern capitalist economies it is impossible to disentangle the two. Markets cannot function effectively without suitable institutions, as exemplified by the behaviour of the Russian economy since the former regime came to end, while the principles which guide action in the market (such as pricing and competition) are increasingly being applied to the operation of institutions. Obvious examples are:

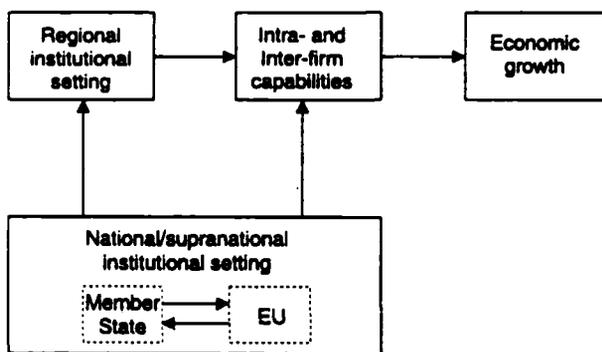
- market functioning is virtually impossible without secure property rights, backed up by legislation and social norms and, in their absence, price incentives, which are a fundamental part of market forces, are effectively blunted. The establishment of enforceable property rights has been one of the greatest challenges in the transition of Central and Eastern European economies. In the European Union, it is apparent that economic development is obstructed where social norms and legal sanctions are weak in protecting property, such as in severely deprived urban areas or where there is organised crime;
- price incentives, and therefore the efficient functioning of the market, are also dependent on a secure and stable currency, which, in turn, is

dependent on an appropriate institutional and policy framework;

- within firms, decision-making is increasingly being decentralised, with local managers being judged by their performance in the market, while at the same time there is growing emphasis on cooperation and the formation of links between companies, especially between suppliers and customers, in areas where there is a common interest;
- in the labour market, as noted earlier in the Report, the structure of households and social norms play a key role in determining the participation of women, while availability of jobs (particularly part-time and in services) and pay levels, in turn, influence household behaviour and social attitudes.

The efficiency of the institutional structure of a region is, therefore, increasingly considered to be a significant factor in regional development, exercising an influence at least equal to that of more traditional, tangible factors such as infrastructure.<sup>3</sup> The following diagram summarises the influence of some key institutions on the regional economy:

*Institutional factors and regional economic development\**



Different institutional levels are distinguished. First, there are the institutional arrangements within firms (intra-firm), which, combined with those between firms, are the main direct influences on economic growth and the regional economy. In addition, there are two indirect influences: the regional institutional setting, consisting of the public administration, and

'social capital', comprising the habits, customs and local culture, and the national and EU institutional and policy framework.

Although the internal characteristics of firms which determine whether they are successful or unsuccessful is an interesting theme for analysis, the focus here is on the twin aspects of social capital and public administration which affect all firms in a region.

### Social capital and networks

Social capital can be defined as 'features of social organisation, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions.'<sup>5</sup> Such capital improves the functioning of both markets and institutions by reducing the effort expended in contracting, monitoring and enforcing the terms of transactions. It creates the possibility of deeper economic relationships and a longer-term perspective and helps build trust in businesses on the part of both customers and trading partners which is becoming a key determinant of competitiveness. Social capital can also foster cooperation between diverse economic actors, both public and private, where this would otherwise be difficult.

Social capital arises from the establishment and operation of networks, from social interaction and economic relationships. Networks consist, in general, of relationships between broad equals and often include local authorities, trade unions and voluntary associations as well as businesses.

Networks between businesses are particularly important for regional development. These can be either vertical or horizontal (and may even be both) and the relations between the firms involved tend to entail both institutional aspects (ie the relationship is usually long-term) and market aspects (ie participants can opt out if they wish). Networks potentially combine the best of both worlds: economies of scale usually associated with large firms and the dynamism and flexibility characterising firms competing under market conditions. They can be particularly important for small businesses which are not large enough by themselves to realise economies of scale.

A major aspect of networks is that they facilitate the diffusion of know-how and innovation. The generation and acquisition of knowledge is typically subject to

significant economies of scale and networks enable firms to tap into the knowledge and know-how accumulated by all those involved. Equally importantly, networks often generate new knowledge, or innovations, as in Silicon valley in the US, for example, and in the so-called 'third Italy', which small firms would not be able to do acting alone.

The informal nature of networks, however, offers wide scope for opportunistic behaviour, especially where non-patentable knowledge (often as important as, or more important than, patentable knowledge) is concerned. Networks are, therefore, dependent on high standards of business conduct and high levels of trust, which are major elements of social capital. *'The lack of social capital helps to explain one of the EU's key problems, namely its poor record of converting scientific and technical knowledge into commercially successful products and services, that is the inability to transfer technology from laboratory to industry, from one company to another and from region to region. At bottom, this is not so much a technology problem as a networking problem.'*<sup>6</sup>

A final point to note is that, although these institutions have beneficial effects, they can gradually become inflexible ('institutional sclerosis') and end up as obstacles to change. Today's success can become tomorrow's failure and 'ties that bind become ties that blind.'<sup>6</sup> It is therefore imperative periodically to reform institutions and/or to expose them to outside influence. According to some commentators, European integration is a key force in this, since it exposes regions to institutional models and competition from all over the Union.

### **The efficiency and effectiveness of public administration**

There have been substantial changes in the philosophy of public sector organisation in many Member States in recent years. There are many elements involved, but two key aspects are of particular interest in this context. One is performance management, including an emphasis on internal efficiency and transparent and accurate measurement of performance, and the systematic incorporation of the results into policy. The other is both the inclusion of wider public sector representation and the involvement of the private sector in the policy-making process.

The concept of performance management goes beyond measurement, which in itself is nothing new for the public sector (indeed, governments of centrally-planned economies were particularly keen on this, with less than satisfactory results). In the first place, the measurement involved is not just in terms of inputs or intermediate outputs, but entails a more sophisticated economic evaluation of the effects of policy, and independent evaluators from the private sector are, increasingly, being brought in to advise on the precise method to be applied and the aspects which should be included.

Secondly, evaluation is combined with internal decentralisation. A policy cycle is established within which the top level of management sets targets and then decentralised units take responsibility for the day-to-day management of policy. Finally, the results — often from various different managing units — are evaluated and policy improved accordingly. The focus is more on the results obtained than on the measures used to achieve them, allowing individual units flexibility to adapt to specific circumstances and, importantly, the freedom to innovate. In private sector terms, this represents a move away from detailed micro-management and towards management by results.

This has numerous implications, including the freeing of central management to concentrate on strategic planning, leaving the details to decentralised units which have a better understanding of them and are, therefore, best placed to deal with them. It also gives rise to the concept of the 'learning organisation' with systematic improvement of policy from one cycle to the next, rather than a simple repetition of existing programmes. Governments which have embarked on this process are achieving significant long-term improvements in efficiency.

The key issue here is one common to many institutions: how far an administration can move beyond a simple model of hierarchical control to a more decentralised system without losing the ability to coordinate activities. This balance is difficult to achieve, but rewarding in terms of tapping individual expertise and creating the conditions for policy innovation. Related challenges include those of establishing 'intelligent' organisational routines and of building a culture of trust and cooperation where employees work for the collective good rather than pursuing individual goals.<sup>9</sup>

The second major change is towards wider partnership. One facet of this is the emergence of the 'multi-level governance' model, within which different levels of government which are formally autonomous work together. However, partnership can also include the private and voluntary sectors. Different partners can potentially bring different strengths and different perspectives. More centralised authorities can, for example, tap economies of scale, including the knowledge generated by many different kinds of experience, while local units tend to be closer and more sensitive to local conditions.<sup>10</sup> In addition, private firms, which are often exposed to vigorous competition, tend accordingly to be a source of best practice, while the voluntary sector is often best placed to know about certain kinds of social need.

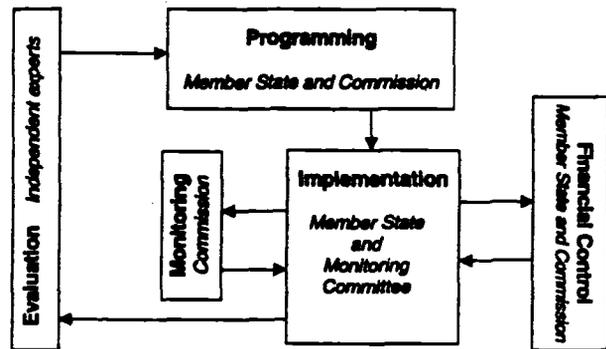
A key feature of such partnerships is that the different parties involved are formally autonomous but share responsibilities. The relationship between them is, therefore, one of cooperation and negotiation rather than being a hierarchical one. Moreover, since the protagonists have different perspectives, it encourages a full and open discussion of objectives which potentially increases both transparency and the quality of planning, although it is also possible for the system to become unwieldy. In addition, such a horizontal network can be ideal for the transmission of tacit knowledge and innovation, and the accumulation of social capital.

## The contribution of the Structural Funds

The delivery system developed for the Structural Funds has had a major influence on the institutional structure in different regions, particularly the efficiency of public administration. The system is determined not just by the basic parameters set by the Structural Funds and national regulations, but has evolved from the day-to-day interactions between the different organisations involved. It entails a multi-level system of governance, within which the relationship between the different levels is one of partnership and negotiation rather than a hierarchical one. In addition, it incorporates features of the new public management model, such as private sector involvement and the economic evaluation of results.

The system consists of two main operational elements (programming and implementation) and three feedback loops (monitoring, evaluation and financial control).

### Structure of the delivery system



For each region, a development programme is proposed by the competent Member State authority — generally the national government, sometimes in partnership with regional government. There are two levels of programming: a strategic one, involving the definition of objectives, the main development strategy, the distribution of financial resources between priorities and so on, and a detailed one, involving the implementation of the strategy, the sub-programmes to be included, the measures to be used and so on. The proposal is then negotiated with the Commission, which, inter alia, checks the coherence with the Structural Fund regulations and guidelines. Once the Commission has given formal approval, the plan is adopted as a 'Community Support Framework', or, in a more simplified form, as a 'Single Programming Document'.

The implementation of the programme is a more diffuse process, with many actors participating and partnership being the key note. The monitoring committee, for example, usually has a very strong local flavour, including, or even being dominated by, representatives from local and regional authorities, employers and trade unions and voluntary groups. Management of specific programmes may be delegated to some of these groups, individually or working together in partnership at the sub-regional level.

The extent of inclusion of local representatives is flexible and at the discretion of the Member State concerned. It can, therefore, be tailored to comply with

traditional practice, although the Structural Funds procedure has often led to some change in certain aspects of this practice. For example, in Germany and Spain, the main parties responsible for implementation are the strong regional authorities. In smaller Member States, national authorities generally take the lead, although there is sometimes significant participation by the private sector (eg in Ireland) or local authorities (eg in Portugal). In Sweden and the UK, many of those involved are active partners, both local actors (public authorities, private business and voluntary sector organisations) and central government.

The Commission is also closely involved in much of the implementation. While, formally, the Member State authorities are responsible and the Commission is simply one of many participants in the monitoring committees, in practice, the Commission's advice (eg on interpretation of the regulations or on coherence with the programming documents) is often sought on detailed issues.

In the current programming period, there are three main feedback loops:

- monitoring determines whether the programme is going according to the agreed plan and assesses physical output;
- evaluation assesses the final impact of the programmes in social and economic terms and, increasingly, considers the effectiveness of the delivery mechanism;
- financial control assesses compliance with the rules for spending the Funds.

In principle, these feedback loops act as mechanisms for improvement and facilitate the evolution of policy. In the current system, however, there is little formal institutional link between the feedback loops and implementation. Their main effect is, therefore, on the climate in which programmes are implemented, and their main influence is through the (mostly voluntary) efforts of the officials involved.

Indeed, the delivery system can be said to be a mixture of management by results and management by regulation. Decentralised implementation with quantified objectives and evaluation is consistent with management by results, but this co-exists with, and

may to some extent be limited by, regulation-based management systems in many Member States and by regulations set at the EU level.

The situation is complicated by the fact that the management styles of the different bodies involved — Commission, Member State and regional authorities, employers and trade unions and voluntary organisations — can be very different. For example, in the case of the public sector, the UK management of the Structural Funds is largely by results, according to the study on the delivery system, while in Germany, Spain and Portugal, programme managers are responsible solely for complying with the rules and regulations of the programme and public funding. Finland and Ireland fall somewhere in between.

The Structural Funds procedure contributes in various ways to improving the institutional structure of regions. One is through mobilising the different partners and the strengths they bring in terms of both knowledge and other resources. Another is through the innovation which results naturally from different forms of partnership between the many different actors involved and the many different instruments they have at their disposal. Observers sometimes refer to the Structural Funds machinery as a laboratory and there is significant potential for institutional and technical innovation. According to the interviews with participants which formed part of the study, the Funds have made three specific contributions:

- programming, involving clear planning and long-term stability, which is a feature of the new public management literature and a *sine qua non* of the participation of representatives from different levels of government, the private sector and voluntary organisations;
- evaluation, which is often described as the main innovative spin-off from the Structural Funds procedures and which, though it is still in its early days, is both a device to improve effectiveness and a precursor to other innovations; if the Funds procedures are a laboratory, evaluation is the measuring instrument, revealing the success or failure of different experiments. In addition, evaluation of best practice is starting to spread beyond the Structural Funds into national policies;
- mobilising regional and private sector involvement. Partnership has improved the effective-

ness of the Structural Funds, by bringing in additional resources and knowledge, as well as by effectively creating public, private and mixed networks, which are themselves important for regional development.

The goal of the Structural Funds is to strengthen the productive capacity of regions and, therefore, boost growth and employment in weaker regions. The features listed above are directly relevant in this regard since they make the operation of the Funds more effective and the achievement of these objectives more likely. However, there are also significant indirect effects. The Funds have created a need for evaluation, coordination and the establishment of networks in the regions assisted, but these give rise to economies of scope, in the sense that they are all applicable for other purposes. As a result, there are spin-off improvements to public and private institutions in the regions and countries concerned.

### Programming

As noted above, clear and detailed programming is a key part of the Structural Funds procedures. Three benefits of this were frequently cited in the interviews conducted in Member States.

The first was stability and certainty to facilitate forward planning, which the study found to be universally welcomed. Operating programmes over a six-year period provides the target groups as well as the relevant administrative authorities with a comparatively stable financial and regulatory framework. Because of the additionality condition and the need for matching funds, this stability also extends to related areas of national spending.

The second was the stimulation of analysis. The formulation of regional development plans forces those involved to analyse both the problems and the strategies and instruments for tackling them. In contrast to many national measures, the programmes supported by the Structural Funds have to be checked systematically for their strategic viability. The programming documents are published and must, therefore, be politically and economically defensible, so requiring the plans to be clear and consistent. Such beneficial effects were cited in Germany and Portugal, in particular.

In addition, the discussion process allows the different participants involved to pool their expertise. Local authorities, for example, have access to local knowledge, while the Commission has access to a great deal of experience in various parts of the Union, in regions which have both similar and different features. Moreover, the publication of programming documents exposes them to the scrutiny of outside experts.

The third benefit cited was the encouragement of coordination between departments and sectors. This was felt to be insufficient in all 6 of the Member States covered, with individual national Ministries tending to work independently of each other, in a traditional way. The intersectoral nature of the Structural Funds was, therefore, initially a challenge but has subsequently stimulated coordination and dialogue between otherwise separate Departments. These benefits were cited in Portugal, where improved coordination dates from the PEDIP programme, and in Finland, in particular.

### Evaluation

Evaluation is the natural complement to programming; while the latter clarifies the strategy, the former clarifies the results of the strategy. In addition, innovation in regional policy depends on the ability to compare the effects of different programmes in different contexts and to disseminate the results of this comparison to others.

Evaluation is regarded by many, including those interviewed in the study, to be the most significant innovation resulting from the Structural Funds procedures. This is not to say that it never occurred before 1988, but the reform of the Structural Funds made it obligatory and put it on a systematic footing. Interestingly, evaluation was initially resisted by many as being an unnecessary piece of bureaucracy, but it is now generally viewed as giving rise to two major benefits:

- it is spreading best practice and a culture of evaluation to Member States, in most of which there was previously little or no experience of this;
- there is ongoing improvement in evaluation best practice, partly as a result of the increased numbers undertaking such exercises and experi-

menting with different techniques, partly as a result of the conscious fostering of innovation by the Commission. In addition, evaluation has been extended to new areas, such as the structures for implementation.

The spread of a culture of evaluation has two main aspects. One relates to monitoring systems and the development of performance indicators, the other to *ex post* evaluation, which generally uses 'softer' data, such as field surveys, to assess the real and lasting effects, for example, on job creation. Monitoring is usually undertaken in-house, while *ex post* evaluation tends to be carried out by independent experts. The development of a culture of evaluation is, therefore, particularly important in respect of the latter.

In many Member States, there was little *ex post* evaluation before the reform of the *Structural Funds*. The main exception was the UK and, to a lesser extent, the Nordic countries, the Netherlands and Ireland. Creating expertise in this area and the related culture is a long-term process, but in all the Member States, except the UK, significant improvements in techniques and coverage are reported. Moreover, even in the UK, the *Structural Funds* have led to evaluation being extended to structures of implementation.

In all 6 Member States in which interviews were conducted, there have been efforts to improve the monitoring system by developing indicators, though from widely differing starting positions and with varying levels of development. Indicator systems, which go beyond merely checking financial flows, have been developed furthest in the UK and Finland, stimulated by the management-by-results systems operating in public administration. By comparison, in Germany and Portugal, the development of monitoring systems based on physical and impact indicators is still at an early stage.

Improvements in best practice are occurring in several ways. One is simply through the spread of a culture of evaluation, which, combined with the insistence of Commission officials on the development of improved indicators, has created a climate of innovation. Indicators of output, outcome and, to some extent, impact are being developed in many places. Ireland is a notable example, where there are currently very ambitious attempts to construct a real-time monitoring system using impact indicators with very short lead-times.

The MEANS<sup>11</sup> programme is making a significant contribution to the evaluation techniques available. Through the programme, the Commission is financing research into such techniques, helping to develop a professional culture and professional bodies, encouraging discussion between those involved (both academics and officials), formulating reference frameworks and establishing best practice.

### Regional and private sector mobilisation

Partnership is one of the key aspects of the delivery of the *Structural Funds*. It seeks to build consensus and institutionalise dialogue between the Commission, national governments, regional and local authorities, private business and the voluntary sector. Partnership occurs at different stages of the delivery process, from consultation during the planning phase to cooperation in implementation.

Partnerships are evolving over time. Before 1989, few bodies, such as the Monitoring Committees, existed to give substance to coordination and partnership. Today, elected regional and local bodies have an integral role in the *Structural Funds* procedures in many Member States, particularly the larger ones. Private and voluntary sector involvement is, however, still more variable, being '*strongest at the plan-making and programming stage (albeit often informally), most varied (some high and some low levels of involvement) at the project funding stage ... and weakest in terms of monitoring and evaluation.*'<sup>12</sup> This form of institution-building often involves a long lead-time and partnerships are likely to deepen in future.

The advantages of partnership include:

- access to the strengths of the different partners, including their local and specialist knowledge. Decentralisation and public-private partnership are particularly emphasised in the new public management literature. For example, so-called 'yardstick competition' between delivery agencies, whether public or private, can lead to mutually beneficial exchanges of information, exerting a particular influence where public departments need to adapt longstanding and sometimes outdated methods and procedures. This contributes to the spread of the new public management agenda, particularly in regions and Member States where it has a low profile;

- high levels of cooperation and ownership. The interviews showed that those involved at local level have a very positive overall impression of the Structural Funds and their results, even if there is some frustration with procedures;
- administrative decentralisation, but little increase in private participation in Finland and Portugal;
- strong regional, local and private empowerment in Ireland and the UK.

- creation of local networks. The importance of these networks in regional development was stressed above. The need to improve coordination and communication between the various parties involved in all the Member States was cited in the study, but there are two particularly interesting developments:

1. the decentralisation of implementation to the very local level, led by the UK and Ireland. The Funds create a consensus between diverse actors — local authorities, private and voluntary sector — that would be difficult to sustain in their absence. At the local level it is relatively easy to integrate the different Funds (ERDF, ESF and so on), the instruments used, the development targets and the public and private sector contributions. Although this "integrated approach" can be very rewarding in terms of results, it is more difficult to sustain at a wider level;

2. Regional Innovation Strategies, led by the Commission. These could be described as institutional engineering exercises, aimed at linking all those involved in technological development at the local level (from both the public, including universities, and private sectors), so creating the right institutional conditions for increased innovation in the region.

It should, however, be noted that there can be a trade-off between efficiency and the scale of participation, particularly when the number involved exceeds a certain level. In addition, local partners tend to have less Structural Fund-specific expertise, so there is a strong need for Commission and national authorities to provide technical assistance.

In the Member States covered in the interviews, three patterns of development in partnership can be distinguished:

- marginal changes to strong Federal systems in Spain and Germany;

In Germany, the Länder are the main bodies involved; representatives at regional and local levels below this have tended to participate only in implementation of projects, while the role of the Federal Government is diminishing as the Structural Funds become increasingly decoupled from national regional policy, administered jointly by the Federal Government and the Länder. Under pressure from the Commission, businesses and trade unions have, in the current programming period, gained increased representation.

In Spain, the responsibility for the Structural Funds is divided between central government and the regions, according to the responsibility of the region concerned for policies which are purely national. Local authorities, private businesses and trade unions play a relatively minor role in the Monitoring Committees and in the implementation of policy.

In Finland, the implementation of the Structural Funds has coincided with a decentralisation of national policies and an increase in the institutional responsibilities of the newly-created Regional Councils. The latter are the main bodies responsible for the Structural Funds, in concert with the regional offices of national ministries. Interestingly, there is felt to have been significant mutual gains between implementing the Funds and pursuing the separate goal of decentralising national policies. This is a good example of economies of scope in the delivery system.

Regional mobilisation is taking place on two levels in Portugal, where government has traditionally been highly centralised. First, the Structural Funds have boosted the financial resources of local authorities, typically by an estimated 10–15%. Secondly, the Comissoes de Coordenação Regional (commissions for regional coordination), created as decentralised units of central government, expanded their powers with the adaptation of the Structural Funds and have become a regional voice in the planning and implementation of regional programmes.

Ireland is a small and traditionally centralised State, and local authorities have had very limited functions. These powers are being significantly boosted as re-

sponsibility for the Structural Funds is transferred to local partnerships of public, private and voluntary sector representatives. On the Commission's initiative, assistance to local development has increased in the present programming period. The local partnerships now make their own local development plans and receive a budget from the Structural Funds to implement them. The partnerships are supported both in terms of planning and technically by a completely new implementation structure.

In the UK, decentralised Government Offices have, over the course of the 1980s and 1990s, been developing and taking on more responsibilities. These offices are responsible for implementation of the Funds and play a key role in the Monitoring Committees. Structures of implementation have been very innovative and one emerging pattern is further decentralisation to local partnerships, including representatives from the private and voluntary sectors. As in Ireland, central government provides a strong technical support structure for local partnerships.

## Conclusions

Institutions are a key factor in regional development and, in the long-term, may well prove to be the most significant one. There are many different institutions which exert a crucial influence on economic issues — including efficiency and innovation — by structuring the choices open to individuals and organisations and the incentives they face. Economic success depends not just on private sector institutions such as the standard of company management and the extent of networking between firms, but also on social factors such as trust and on the quality of public sector management.

Social capital is of particular importance for regional development and includes networks between firms as well as shared cultural traditions and attitudes which facilitate cooperation. Networks between firms can combine the economies of scale normally reserved to large firms, with the dynamism and flexibility of small firms and are particularly associated with innovation. In the statistical analysis in section 2.1, the high level of competitiveness of Northern Italy which is not 'explained' by the factors examined is almost certainly due, at least in part, to the innovation achieved by such networks. Conversely, the rela-

tively low level of social capital in many regions is identified in the literature as a significant constraint on innovation.

Public administration is also important for regional development and measures in recent years to improve the quality of this have been associated with new principles of public management. A key feature is the introduction of sophisticated tools to evaluate performance, enabling lessons from the experience of past policies to influence present ones, so creating a 'learning organisation' which continuously improves its strategy. Other features are decentralisation and partnership which potentially allow public authorities at different levels as well as private sector representatives to bring their various strengths to the policy process.

Continuous reform is necessary to keep institutions up to date. At present, there is a move, in both the private and public sectors, away from simple hierarchical and bureaucratic control towards decentralisation, partnership and networks which are generally considered more efficient.

An institutional factor with a particular bearing on regional development is the delivery system of the Structural Funds. This has a direct effect by encouraging the efficient and effective use of Fund resources, but it also potentially has indirect effects through encouraging networking and improvements in the structure of public sector management.

As an institution, the delivery system is characterised by multi-level governance, ie the Commission, national governments and regional and local authorities are formally autonomous, but there is a high level of shared responsibility at each stage of the decision-making process. The relationship between these is, accordingly, one of partnership and negotiation rather than being a hierarchical one. It also has elements of the new principles of public management, such as decentralisation and evaluation.

The delivery system has made an important contribution to the institutional endowment of lagging regions. A particular contribution to the efficiency and the effectiveness of public administration has been the notion of a continuously improving policy cycle, within which evaluation of past policies is used to improve the performance of future ones. This process requires expertise within public authorities and, for

most Member States, the impetus to acquire this came from the Structural Funds. In addition, the Commission is developing and disseminating best-practice techniques of evaluation through the MEANS programme.

The delivery system is also beginning to contribute to the accumulation of social capital and the formation of networks in lagging regions. There are often obstacles to the latter, and local partnerships create the contacts between the many diverse actors from different walks of local life to help overcome these. In addition, the desire to influence programmes provides an incentive for those concerned to resolve the initial problems that naturally arise in forming such relationships. The Structural Funds, in other words, encourage the creation of local networks, which then benefit other areas of economic life in the region.

The principles underlying the Structural Funds and the delivery system in place enjoy widespread support. Indeed, the survey undertaken revealed a high degree of support for the concept as well as appreciation of the practical results. However, an equally important theme was the need for reform and further development of the practice, and it was felt that unnecessary bureaucracy needs to be cleared away, deeper and broader partnerships fostered and a culture of evaluation further developed. As one interviewee put it, 'the problems lie in the operational questions, the advantages in the principles'.

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  - [5] R.D. Putnam (1993), *Making democracy work: civic traditions in modern Italy*, Princeton University Press.
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  - [10] For a fuller treatment of this subject, see, for example, 'The Economics of Community Public Finance', *European Economy* 1993, no. 5.
  - [11] Named after its French acronym, 'Methodes d'Evaluation des Actions de Nature Structurale'.
  - [12] E. Stern (1997), *The Partnership principle*, European Commission.
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## Part 3 The situation and trends in assisted regions

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### 3 The situation and trends in assisted regions

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The concern here is to examine developments in the regions of the EU that have been assisted under the priority Objectives of the Structural Funds in the period since their reform in 1989. Specifically, the analysis considers, in turn, Objective 1 regions, in which GDP per head is generally below 75% of the EU average, Objective 2 regions, which are suffering from industrial decline, and Objective 5b regions, which are rural areas with problems of structural adjustment.<sup>1</sup> The focus is on two key areas of economic welfare:

- employment and unemployment
- GDP and productivity.

#### The Objective 1 regions

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Objective 1 regions currently contain some 25% of the total population of the EU, or around 92 million people. They are typically large areas concentrated mainly in the peripheral parts of the Union which suffer the handicaps described in Part 2 above — specifically, relatively poor infrastructure endowment and a work force with comparatively low skill levels as well as institutional deficiencies as defined in the previous section.

As a group, these regions have by definition the lowest levels of GDP per head in the Union, equivalent to some 68% of the average in 1996 (Table 28). This results from a combination of their poor performance in terms of GDP per person employed (or productivity) and their low level of employment in relation to working-age population (or the employment rate), which together largely determine GDP per head.<sup>2</sup>

For Objective 1 regions taken together, productivity is substantially below the level in the rest of the Union. GDP per person employed in 1996 averaged just over three-quarters (78%) of the figure for the EU as a whole. Their employment rate was also much less than elsewhere in the Union, the total number in work in 1997 averaging 52% of the population of working age (15–64) as compared with an EU average of almost 61%.

The low level of employment reflects the much more difficult labour market conditions in such regions than elsewhere in the Union, unemployment averaging 16.2% of the work force in Objective 1 regions in 1997 as against an average rate of 10.7% across the Union. In the Objective 6 regions which it is possible to distinguish in the present analysis, which are mostly in Finland, unemployment was even higher, averaging 19.8%.

The difficult labour market conditions and the acute job shortages associated with them, however, are not only reflected in high unemployment but also in low participation in the labour force, especially among women. In other words, lack of available jobs deters those not in work from actively seeking employment and, therefore, means that significant numbers are deprived of being able to pursue working careers. Low participation accounts for around 40% of the gap in the employment rate between Objective 1 regions and the rest of the Union.

The prevailing structure of employment in the Objective 1 regions, however, is not much different from that in the rest of the Union. Employment in the secondary sector — industry and construction — accounts for around 30% of total employment in both cases. The major difference is the persistence of high employment in agriculture in Objective 1 regions, where it ac-

counts for around one in 10 jobs, twice as many as in other parts of the Union. As a reflection of this, Objective 1 regions also have a lower share of employment in services, though, as in the rest of the Union, this is still the dominant sector, accounting for 60% of all jobs (Table 33).

Since 1988, the gap in GDP per head between what are now Objective 1 regions and the rest of the Union has narrowed appreciably, the level in such regions increasing from 64% of the EU average to 68% in 1996 (the latest year for which regional data are available). These figures, however, are affected by the changing composition of Objective 1 regions from one programming period to the next, as noted below, as well as by the inclusion of the new German Länder in the EU average from 1991 on (which has the effect of reducing it). Nevertheless, taking explicit account of these two factors does not greatly change the conclusion.

Over the first programming period, GDP per head, in what were then Objective 1 regions, increased from around 63½% of the EU average in 1988, immediately before the period began, to 66½% in 1993 (excluding for this purpose the new German Länder from the EU average in 1993 in order to compare like with like). Since 1993, the gap in GDP per head for the same group of regions has continued to narrow and by 1996, the relative level had risen to 68% of the EU average (again excluding the new German Länder from the EU average — or from 68% in 1993 to 69% in 1996, if the new Länder are included) (Table 29).

A similar convergence of GDP per head towards the level in the rest of the Union is also evident over the period since 1993 if the group is expanded to include the regions accorded Objective 1 status for the first time in the present programming period, 1994 to 1999. For all Objective 1 regions taken together, GDP per head increased from 66% of the EU average in 1993 to 68% in 1996 (including the new Länder in both numerator and denominator).

The relative increase in GDP per head in Objective 1 regions between 1988 and 1996 was entirely due to a larger increase in productivity than in the rest of the Union rather than to more jobs being created and, accordingly, more people being in employment to contribute to GDP. Between 1988 and 1993, GDP per person employed in the regions which had Objective 1 status during the first programming period rose

from 76% of the EU average to 79% (again excluding the new Länder from the EU average throughout and also excluding the French DOMs, for which employment data are only available for one year, from the Objective 1 figures), while the number in work in relation to the population of working age declined slightly (Tables 31 and 32). Since 1993, productivity for this group of regions has risen further in relative terms, GDP per person employed increasing to 81% of the EU average by 1996, whereas the number of people in work relative to working-age population has remained virtually unchanged, as it has in the rest of the Union.

Much the same is true of the expanded group of Objective 1 regions over the second programming period, GDP per person employed rising from 76% of the EU average in 1993 to 78½% in 1996, while the employment rate has again remained much the same as compared with that in the Union as a whole.

The failure of employment to increase in relation to working-age population in Objective 1 regions, from a level which was already low in comparison with the rest of the Union, has led to significantly higher unemployment. As a growing proportion of people of working age, especially women, have joined the labour force and have attempted to find employment, the number of jobs available has proved insufficient and many have ended up unemployed. In the regions with Objective 1 status in the first programming period, the average rate of unemployment went up from 15.6% in 1988 to 16.3% in 1993 (again excluding the French DOMs), less than the increase in the Union as a whole (from 9.1% to 10.5%, excluding the new Länder) (Table 30). However, although the average rate in this group of regions has fallen slightly since the peak (of 17.6%) in 1994, it was still over 17% in 1997, above the level in 1993 and well above that in 1988, whereas in the Union as a whole, unemployment had come down to the same level as in 1993.

In the expanded group of Objective 1 regions, average unemployment in 1997 was also above the rate in 1993 and, in this case, it was much the same as in 1994. Objective 1 regions, therefore, have proved much less successful at creating jobs and reducing unemployment than they have in raising productivity and increasing GDP per head. In consequence, it remains the case that while around a quarter of the Union's population lives in Objective 1 regions, they are home to a third of the unemployed.

### EU structural policies: main features

The Union has six major financial instruments to implement its structural policies: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Guidance Section of the European Agricultural Guidance and Guarantee Fund (EAGGF), the Financial Instrument for Fisheries Guidance, the Cohesion Fund and loans from the European Investment Bank (EIB). The Cohesion Fund and the EIB are based on a project-financing approach and are governed by their own specific rules. The Structural Funds, which encompass the first four instruments, operate within an integrated programming framework according to a set of principles set out in the implementing regulations.

In the current programming period, 1994 to 1999, the Structural Funds address regional problems under four Objectives:

- Objective 1, for regions where development is lagging behind (accounting for almost 68% of total resources);
- Objective 2, for restructuring in areas affected by industrial decline (11%);
- Objective 5b, for structural development in rural areas (4%);

- Objective 6, for structural development in sparsely-populated areas (0.5%).

The population covered by the regional Objectives amounts to 51% of the EU total. Some 55% of the total resources goes to 16% of the EU population in four countries - Greece, Spain, Ireland and Portugal - mostly delivered through Objective 1 programmes.

Three other Objectives are centred on specific problems rather than on regions as such:

- Objective 3 is concerned with helping to alleviate long-term and youth unemployment;
- Objective 4 assists the adaptation of workers to industrial change;
- Objective 5a promotes structural adjustment in agriculture and fisheries.

There are separate Community Initiative programmes to support transnational, cross-border and inter-regional actions organised under 13 different themes. In addition, a small proportion of total resources, some 1%, is reserved for technical assistance, pilot projects and innovative measures.

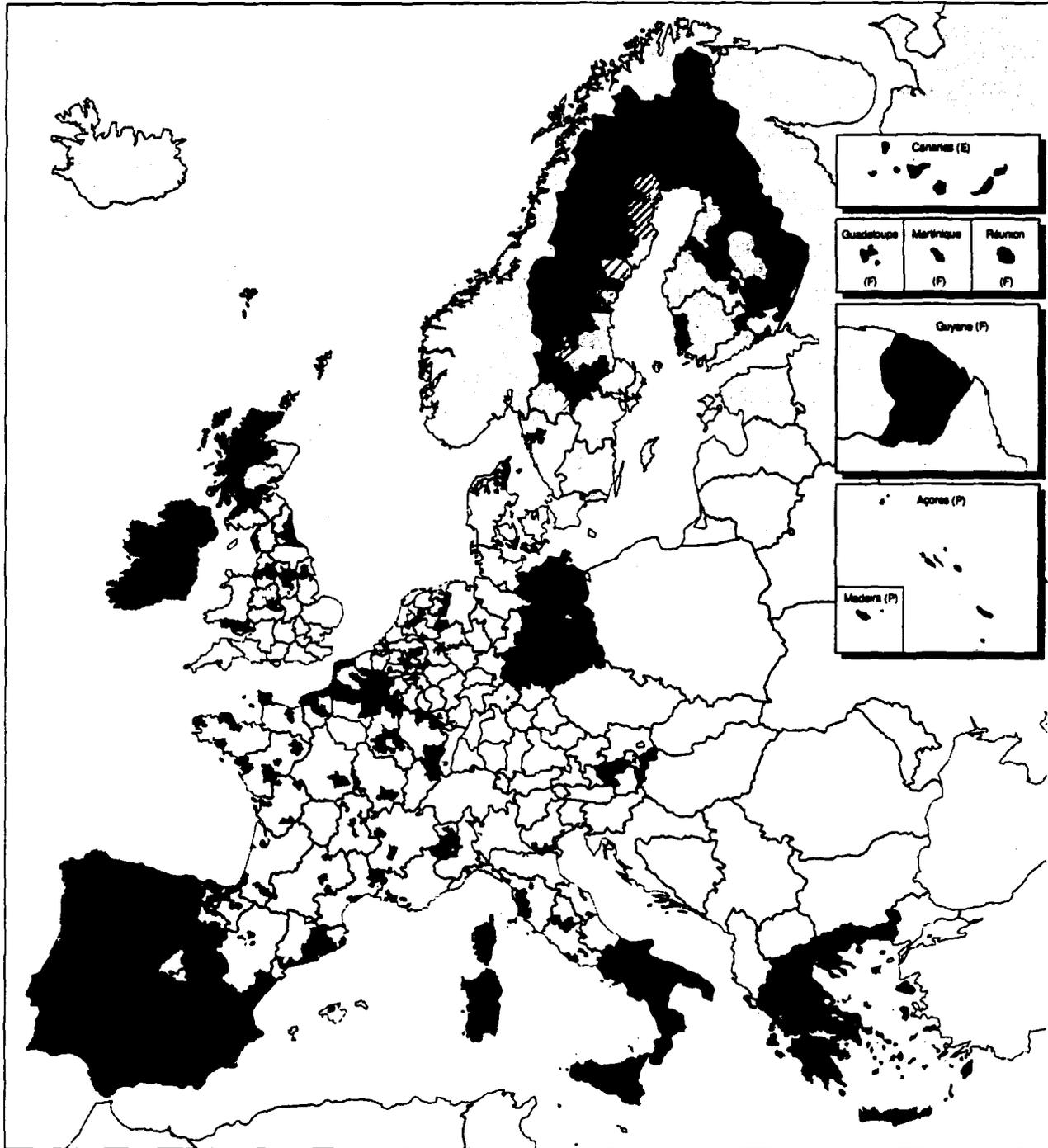
### Differences between Objective 1 regions: situation and trends

These general observations on the situation and developments in the Objective 1 regions taken together conceal considerable differences between them. The differences were accentuated when the list of Objective 1 regions was revised in 1993 to include both the new German Länder and areas in otherwise more prosperous Member States in the North of the Union in which economic and social conditions had deteriorated significantly, largely as a result of industrial decline. Whereas in the programming period 1989 to 1993, the Objective 1 regions were a largely homogeneous group of less developed — and, for the most part, less industrialised — areas in the traditional sense of the term, following the 1993 review, eligibility was extended to certain areas which had previously been highly industrialised in Belgium, France and the UK, as well as in the former East Germany which were equally industrialised in most cases.

The differences between regions is evident in their general economic features. For example:

- GDP per head in Ireland, the Objective 1 region in which this is highest, was almost twice as high as in the poorest parts of Greece and Portugal in 1996 and over twice as high as in most of the French Overseas Departments (Table 29);
- unemployment rates in the Objective 1 regions in Spain in 1997, averaging 24%, were more than three times those in most regions in Portugal and Greece and six times that in Burgenland in Austria (Table 30).

The Objective 1 regions with the highest level of GDP per head are a relatively diverse group comprising, apart from Ireland, Mediterranean regions such as the French island of Corse, Cantabria in Spain and Attiki, the region in Greece where Athens is situated. It also includes Lisboa in Portugal and Molise in Italy,



**Map 42 Regions eligible for Structural Funds assistance, 1997-99**

- |  |  |
|--|--|
|  Not eligible                 |  Obj. 2: wholly eligible        |
|  Obj. 6: wholly eligible      |  Obj. 2: partly eligible        |
|  Obj. 6: partly eligible      |  Obj. 2 & 6: partly eligible    |
|  Obj. 5b: wholly eligible     |  Obj. 2 & 5b: partly eligible   |
|  Obj. 5b: partly eligible     |  Obj. 2, 5 & 6: partly eligible |
|  Obj. 5b & 6: partly eligible |  Obj. 1: wholly eligible        |

0 100 500 km

as well as the Northern regions of Hainaut in Belgium, the Highlands and Islands in Scotland, Northern Ireland in the UK and the newly resurgent East Berlin in Germany. All of these regions had GDP per head in 1996 above 75% of the EU average (the threshold figure for eligibility for Objective 1 status) and well above the average in Objective 1 regions as a whole (68%).

A second group of regions has GDP per head slightly below this level. It includes the island regions of Notio Aigaio and Kriti in Greece, Canarias in Spain and Sardegna in Italy, as well as Burgenland in Austria, Puglia in Italy, Flevoland in the Netherlands, Merseyside in the UK and Comunidad Valenciana in Spain. Ita Suomi in Finland, which is eligible for assistance under Objective 6, is also in this group. These regions have GDP per head in the range 71% to 75% of the Union average.

A third group of regions has GDP per head well below the Objective 1 threshold, with levels of 70% of the EU average or less, in many cases much less. This includes large areas of continental Greece (as well as Voreio Aigaio), all of the new Länder in Eastern Germany except for Berlin, large parts of central and northern Spain, Portugal (outside Lisboa) and the most southerly regions of Italy. The French DOM — which figure among the very poorest regions of the EU — are also included, together with Galicia in North-West Spain.

There are equally large differences between Objective 1 regions in terms of unemployment, as noted above. The highest rates, of 20% of the labour force or more in 1997, occur in most of the Spanish Objective 1 regions as well as in virtually all of the Southern Italian regions, while rates are only slightly lower than this in Eastern Germany. On the other hand, unemployment is significantly lower in most of the Greek Objective 1 regions and lower again in much of Portugal, where the average rate in 1997 was below 7%.

Examination of the two components which together determine GDP per head — the level of GDP per person employed and the level of employment in relation to working-age population — provides further evidence of the difference in performance between Objective 1 regions. In some regions, GDP per person employed (or productivity) is comparable to levels in the rest of the Union, so that the lower level of GDP per head is the result of a relatively small number of people of working age having a job and earning income.

This is the case in most of the Northern Objective 1 regions, notably Hainaut, Ireland, and Flevoland, in all of which the level of productivity was above the EU average in 1996, as well as in most of Spain — with the exception of Galicia and Extramadura — Southern Italy except Calabria, Burgenland, Sterea Ellada in Greece and Corse (in which it was only slightly below). In all of these regions, low GDP per head is a result of a lack of breadth in the regional economy reflected in failure to create sufficient jobs for the population of working age. In many cases, the number in employment amounts to under 45% of working-age population, especially in the Spanish and Italian regions, as compared with an EU average of 15 percentage points higher (Tables 31 and 32).

In other Objective 1 regions, low GDP per head is more a reflection of low productivity than low employment. This is especially true of the regions in Portugal where the employment rate is above the EU average in most cases, while the level of productivity is substantially less. A consequence of this is that unemployment is well below the EU average in most regions except Alentejo — and in Centro, under 4%.

As noted above, in Objective 1 regions taken together, GDP per head has tended to converge towards the levels in the rest of the Union. This tendency has been widespread across the regions concerned — and, indeed, in some cases, in Ireland, in particular, has been much more pronounced than the average increase. Nevertheless, there are a few regions, but only a few, in which GDP per head has declined in relative terms rather than risen. Indeed, there are only 4 regions, which have had Objective 1 status since 1989 where GDP per head was lower in relation to the EU average in 1996 than in 1988, the year before the first programming period began. These are Sterea Ellada in Greece, though here the decline was concentrated in the first programming period and since 1993, the relative level of GDP per head has fallen only marginally, Dytiki Makedonia, also in Greece, where the relative level was only slightly down and where it has risen during the second programming period, Campania in Italy, where again the relative level in 1996 was only slightly lower than in 1988 and Guyane, one of the French DOM, for which estimates of GDP, especially in PPS terms, are more uncertain than elsewhere.

In addition, there are only 4 regions accorded Objective 1 status in the present programming period in

which GDP per head was lower in 1996 in relation to the EU average than in 1993. These are Hainaut in Belgium, Burgenland in Austria and Merseyside and the Highlands and Islands, both in the UK, where in each case, apart from the first, the relative decline between 1993 and 1996 was comparatively small.

The Objective 6 areas covered here, like almost all the Objective 1 regions, have experienced a relative increase in GDP per head since 1993, though this has not been enough to compensate for the steep fall which occurred in the immediately preceding years, which partly had its origins in the collapse of trade with the former Soviet Union.

Experience in Objective 1 regions with regard to unemployment has been more varied. Although in this case, in most Objective 1 regions, the rate has risen since 1988, as for the group as a whole, there are some exceptions. The two most notable ones are Ireland, where unemployment fell from over 16% to 10% between 1988 and 1997, almost all of the decline being concentrated in the second programming period, and Northern Ireland, where it fell by even more, from 17% to just over 10%. Unemployment also came down over the second programming period, if less dramatically, in the two other Objective 1 regions in the UK, Merseyside and the Highlands and Islands (despite in these cases a relative decline in GDP per head). Other regions to experience a reduction in unemployment were Notio Aigalo in Greece and the Portuguese island of Madeira, though in both cases the decline was only very marginal, and, in the second programming period, Flevoland in the Netherlands. All three of these regions, it is worth noting, have among the lowest rates of unemployment in the Union (Notio Aigalo has the 15<sup>th</sup> lowest rate of all NUTS-2 regions while the rate in the other two is only around half the EU average).

The divergent tendencies in relative levels of GDP per head and unemployment in most Objective 1 regions can be traced to the similarly divergent changes in levels of productivity and employment rates. There are very few regions in which a virtuous combination of above average growth in productivity and a high rate of net job creation has been established. The most notable example, once more, is Ireland, where the growth of GDP per person employed has substantially outstripped that in the rest of the Union, the level increasing from 17% below the EU average to 5% above in just 8 years between 1988 and 1996.

and where the number in employment has risen from just over 51% of working-age population to almost 58% over the same period. Even so, the employment rate remains lower than in other parts of the Union, if only slightly so.

Leaving aside Flevoland, there are very few other regions which experienced a significant rise in both productivity and employment — Northern Ireland and Centro in Portugal being two of these. (Flevoland, where output per person employed has risen almost as much as in Ireland and where the employment rate has risen by more, is a special case in that a high proportion of the population work outside the region and is, therefore, not counted in the productivity figure — which relates to those working in the region — but is counted in the employment rate — which relates to residents.)

At the same time, while there are numerous examples of regions in which productivity has increased by much more than the Union average since 1988, there are no cases where the employment rate has risen significantly without an accompanying high growth in productivity. In other words, the strong conclusion which emerges is that productivity growth seems to be a necessary condition for sustained growth in employment, but it is not a sufficient condition. The challenge facing lagging regions, therefore, is not only to achieve higher productivity in order to strengthen competitiveness and secure long-term development, but to translate this into more jobs.

Indeed, in many cases, in the regions where high rates of productivity growth have been attained, this appears to have been accomplished through rationalisation, more by labour shake-outs than by investment in new jobs. In Sterea Ellada in Greece, for example, where, as noted above, GDP per person employed is above the EU average, productivity increased considerably between 1988 and 1996 (from 9% below the EU average to 1% above) but the employment rate went down from 59% of working-age population to under 56% and unemployment rose to 12% of the work force in 1997. Similarly, in Basilicata in Italy, productivity rose from only 73% of the EU average in 1988 to 86% in 1996, but the employment rate went down from 49% to 42% and unemployment rose to over 20%.

In sum, the analysis reveals the immense difficulty in Objective 1 regions of closing the gap on the other

parts of the Union not only in terms of productivity and GDP per head but also in terms of employment, which seems to be a longer term task.

## The Objective 2 and 5b regions

Objective 2 of the Structural Funds supports the restructuring and diversification of areas affected by industrial decline, while Objective 5b is aimed at assisting the development of rural areas hit by problems of structural adjustment, generally arising from the decline of agriculture, especially as a source of employment. Regions which have Objective 2 status in the present programming period have a population of around 61 million, just over 16% of the Union total, and are located mostly in the more urbanised parts of the Union. Areas with Objective 5b status have a combined population of 32 million, almost 9% of the Union total.

### Objective 2

The areas eligible for Objective 2 assistance are typically located in Member States, predominantly in the North of the Union, with GDP per head around the EU average or above. Low levels of output and real income which come from lagging development are not their main problems, as in the Objective 1 regions, but rather difficulties of compensating for the decline in their traditional industrial base by expanding other activities.

The problems, therefore, tend to show up predominantly in the labour market, in inadequate levels of employment and net job creation and relatively high rates of unemployment. In 1997, just under 1 in 8 of the work force was unemployed in Objective 2 regions taken together, an unemployment rate of 11.9% as against an EU average rate of 10.7%. Although the rate was higher in 1997 than in 1989 (11%), it was lower than in 1993 (12.3%) before the start of the present programming period. Moreover, it represents a better performance than in the Union as a whole, where the average rate was the same in 1997 as in 1993 and markedly higher than in 1989 (8.3%). The gap in unemployment rates as compared with the EU average has, therefore, come down from 2.7 percentage points to only 1.2 percentage since 1989.

The growth in the number employed in Objective 2 regions, however, has been modest over this period. Between 1989 and 1997, it rose by only 0.7% overall, just 0.1% a year, largely reflecting the recession in the early 1990s when employment declined significantly. Nevertheless, even this low rate of employment growth was slightly higher than that achieved in the Union as a whole, where the overall number in work was only 0.5% higher in 1997 than 8 years earlier.

The implication of the very small increase in employment in Objective 2 regions coupled with the modest rise in unemployment is that participation in the labour force declined over the period. A significant proportion of those losing their jobs, therefore, particularly men in their 50s, withdrew from the labour market into early retirement, while increasing numbers of young people stayed in education longer and postponed looking for their first job. This, in consequence, had the effect of keeping the unemployment rate down and, indeed, contributed to the decline in the rate relative to the Union average since 1989.

As for Objective 1 regions, there are marked differences in performance between Objective 2 areas. There are many regions where unemployment was lower in 1997 than in 1989, and more where it was lower than in 1993, but equally there are many where it was much higher in 1997 than 8 years earlier. In most cases, the changes which have occurred reflect what has happened in the Member State in which the region is situated. Increases in unemployment, therefore, are particularly evident in Objective 2 areas in three of the largest Member States — Germany, France and Italy — where rates rose significantly between 1989 and 1997, though they are equally apparent in Belgium and Sweden, where rates also went up. In Belgium, however, there have been falls in unemployment in Objective 2 regions since 1994 as rates have declined generally. This has been more marked in Spain, where there was a substantial rise in unemployment in such regions, as in the country as a whole, between 1989 and 1993, but where since then, and in 1996 and 1997 especially, rates have come down almost as fast as they increased previously.

Reductions in unemployment between 1989 and 1997 occurred in Objective 2 areas in Denmark, the Netherlands and the UK, again in line with developments at the respective national levels. In most of

these regions, rates in 1997 were between 6% and 9%, some way below the EU average of 10.7%.

Recent analysis by the Commission has shed more light on the underlying structural changes affecting manufacturing in Objective 2 areas, and new data sources have been specifically developed as part of the exercise. The analysis shows that, at the beginning of the 1990s, Objective 2 areas, in general, were dependent on a relatively narrow industrial base. The predominant industries were iron and steel, textiles and clothing, transport equipment and metal products. Other industries, especially relatively advanced and higher growth ones, such as electronics or agri-foodstuffs, were under-represented. This dependence on traditional industries, which was the main source of the structural problems in the Objective 2 areas, and the consequences which result from it, are illustrated by the fact that, in 1986, iron and steel and textiles and clothing accounted for 19% of employment in manufacturing in the areas, but for 40% of jobs lost over the period 1986 to 1992.

Moreover, in half the Objective 2 areas examined, dependence on iron and steel, textiles and clothing and transport equipment was much more extreme, these industries accounting for more than 50% of manufacturing employment, and over 80% in some cases. At the same time, the analysis also revealed encouraging signs of growth in small enterprises (defined as those employing fewer than 20 people). Whereas large enterprises in Objective 2 regions are estimated to have lost some 270,000 jobs in net terms between 1986 and 1992, small enterprises gained over 20,000.

#### Objective 5b

The rural areas eligible for Objective 5b assistance, which face problems of generating new job opportunities as employment declines in agriculture, have significantly lower rates of unemployment than other parts of the Union. In 1997, these averaged 7.8% as against the EU average of 10.7%. As in the rest of the Union, however, unemployment was higher in 1997 than in 1989, though in contrast to other regions, including those with Objective 2 status, the rate rose steadily over the period, even during the recovery years from 1994 on. This possibly suggests that unemployment, though relatively low on average, is becoming more structural in nature in Objective 5b

areas and less affected by upturns in economic activity.

On the other hand, employment has risen by more in Objective 5b areas than in Objective 2 regions and by even more than in other parts of the Union. Although most of this growth occurred in the first part of the period between 1989 and 1993, it indicates that an important part of the reason for the rise in unemployment lies in an increase in labour supply.

As for other assisted regions, these average figures conceal wide differences in experience between different parts of the Union. Unemployment rates are particularly high in Objective 5b areas in Spain, Finland and Sweden, where they varied from between 10% and nearly 16% in 1997, while in those in France and Italy, they averaged 9–10%. In most cases, however, this was lower than in the rest of the country. Nevertheless, unemployment has tended to rise steadily in Objective 5b areas in all Member States, with the exception of the Netherlands and the UK.

The structural changes affecting Objective 5b areas have also been the subject of a special analysis by the Commission, of a similar kind to that described above for Objective 2 areas. Again, the analysis was focused on changes in manufacturing over the period 1989 to 1993.

According to this study, while the number employed in manufacturing in the Union as a whole declined over the period, there was an increase, amounting to some 46,000, in the 41 Objective 5b areas covered. Much of this rise occurred in sectors where SMEs predominated, often in activities directly connected to the rural economy, such as the production of timber, the manufacture of wood products and furniture and of agri-foodstuffs. There was also a growth of employment in industries such as metal products and the processing of plastics and rubber. A large part of the increase, moreover, took place in production units employing fewer than 20 people, which are estimated to have expanded in number from 20,500 to 22,000 over the period in the regions covered.

#### Concluding remarks

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The above analysis indicates that there has been significant progress in many of the regions assisted by

EU structural policies in the comparatively short period since 1989. In the priority Objective 1 regions, GDP per head, which is the main focal point of policy, has converged towards the Union average in virtually every case. There has been less progress, however, in respect of unemployment, where the gap with the rest of the Union has tended to widen slightly over this period. This reflects the fact, as confirmed by Commission evaluation studies, that structural policies seem to have had their major effect on productivity, or GDP per person employed, which was generally well below that in the rest of the Union and was an important reason for their lagging development. As a result, their competitiveness has improved which should favour job creation in the long-term by increasing their ability to achieve self-sustaining growth. In the short-term, this has limited the effect on employment.

There are also signs of progress in Objective 2 and Objective 5b areas. Since 1989, the gap in unemployment rates between Objective 2 areas and the rest of the Union, which is a main focus of policy, has narrowed appreciably, and in 1997, the average rate in such regions was less than in 1993 whereas in the Union as a whole it was the same. In Objective 5b areas, on the other hand, where unemployment is now lower than in the rest of the Union, the rate has risen slightly since 1994 and the end of the recession in the Union, highlighting the apparent structural element in unemployment. At the same time, however, more detailed studies indicate that, in these areas as well as in Objective 2 regions, there has been a shift towards a more diversified structure of economic activity, which is a central objective of policy.

**The Impact of Structural Funds on the Objective 1 regions:  
Summary of results from evaluation studies**

The performance of assisted regions can be assessed by using macroeconomic models to analyse the changes which have occurred since assistance has been given. In other words, by comparing developments in the post-assistance period with those before and by estimating what would have happened had the trends observed in the pre-assistance period continued, an impression can be gained of the possible effect of the assistance. The estimates derived from this kind of trend analysis, however, need to be treated with caution, since they do not directly analyse the impact of policy as such but instead, by implication, attribute any divergence from previously observed trends to the effect of the measures implemented. It is, therefore, assumed that there is no change in the behavioural relationships observed in the past and that no new factors emerge during the post-assistance period, other than the introduction of the policy itself, to affect the outcome. Both are very strong assumptions to make and, in reality, it is not possible to know what would have happened in the absence of Union support. Nevertheless, such analysis is instructive.

A variety of macroeconomic models has been used to assess the effect of EU transfers on the key magnitudes of growth, investment and employment. However, given the data which exist, the models can only really be applied effectively to analyse developments in individual Member States rather than in different regions within countries. This means, in this context, that their use is largely restricted to countries in which regions are wholly, or predominantly, assisted through Union structural policies, which means, in effect, Greece, Spain, Ireland and Portugal, in which all or most regions have Objective 1 status and which, since 1994, have also received transfers from the Cohesion Fund.

In essence, the economic effect of EU assistance is twofold. In the first place, transfers from the Structural Funds add to income in the recipient regions, producing a so-called *Keynesian*, or demand, effect on output and employment as the additional income is spent on goods and services. Secondly, they are likely to increase productive potential in the region, which is the main aim of policy, by improving infrastructure, raising the skills of the work force and strengthening local business. This latter type of impact is much more difficult to assess than the first since many of the programmes and measures intro-

duced are long-term in nature and produce their full effect on the economy only after a number of years.

Different models focus more or less on one or other of these two effects. The results of using three different kinds of model are summarised here: a largely Keynesian model, incorporating input-output techniques ('Beutel'), which focuses on the overall and sectoral effects of the stimulus to demand; a pure supply-side model ('Pereira') which focuses on the improvements in economic efficiency; and models which incorporate both demand and supply-side effects ('HERMIN' and 'QUEST').

The Beutel model was used to address the following related questions: how much of the economic growth in the Member States covered can be attributed to EU co-funded programmes (Community Support Frameworks or CSFs) and to EU grants? How have the CSFs affected macroeconomic development and the structure of activity in recipient countries and, as part of this, what proportion of EU transfers feeds through into domestic demand and output? How many jobs depend on structural policy measures? How large are leakage effects through imports from other parts of the EU?

According to the model, EU transfers during the two programming periods 1989 to 1993 and 1994 to 1999 are estimated to have increased GDP growth by an average of 0.9 percentage points in the first period and 1.0 percentage points in the second in Greece and Portugal, 0.8 and 0.6 percentage points in Ireland and 0.3 and 0.5 percentage points in Spain (Table 34). This compares with annual transfers from the Structural Funds equivalent to 3.2% of GDP for Portugal, 3.4% for Greece, 2.1% for Ireland and 1.1% for Spain. This implies that, in relation to the transfers received, the additional growth achieved was slightly less in Greece and Portugal than in the other two countries, which may reflect their greater tendency to import because of their narrower industrial base.

The addition to economic growth in the four countries largely arises from the increase in investment resulting directly from Structural Fund interventions. On average, such transfers, together with the associated national contribution, were responsible for financing over 30% of total investment in Ireland and Portugal and over 40% in Greece. As a result, an increasing part of the capital stock in each of the four countries (2-3%) was attributable to Community transfers.

The impact on employment, on the other hand, appears to have been more limited. A major reason for this is that capital grants or subsidies to the private sector have been used to increase the capital intensity of production or to replace existing plant and equipment with more

modern machinery, either way tending to raise the productivity of labour. Nevertheless, estimates suggest that, by 1999, around 800 thousand jobs, or the equivalent of 3½% of total employment, in the four main recipient countries will depend upon interventions from the Funds.

At the same time, Structural Fund transfers tend to give rise to large leakage effects through increasing imports, mostly from other EU Member States. The Beutel model estimates that more than a quarter of the total amount of EU transfers to the four countries have effectively returned to the other Member States in this way.

The Pereira model, which focuses exclusively on supply-side effects, was used to examine the impact of the Funds on Greece, Portugal and Ireland over the period 1994 to 1999. The results obtained are similar to those of the Beutel model, the structural measures implemented being estimated to have increased GDP, on average, by 0.4-0.6 percentage points a year in Greece and Ireland and by 0.6-0.9 percentage points a year in Portugal. According to the model, the main underlying reason for this is the additional investment in the business sector, in public sector infrastructure and in human capital triggered by Union intervention.

In the HERMIN model, which explicitly incorporates both demand and supply-side effects, the initial impact of intervention comes through the stimulus to demand since the effect on productive potential takes time to materialise. According to the model, however, the demand stimulus has only a temporary effect in raising GDP growth and dissipates comparatively quickly. The lasting effects come from improvements in the conditions of production, which contribute significantly to increasing productivity and competitiveness.

The effect on GDP growth — which is broadly similar to that estimated by the Pereira model — is larger at the beginning (because of the addition to demand) and smaller later on. This is a result of the dissipation not only of the demand effect, but also of the supply-side one (because of negative labour market reactions). In the case of Greece, the addition to GDP growth would amount, on average, to 0.6 percentage points a year assuming EU assistance were continued at current levels up to 2010, but by then the addition would have fallen to 0.3 percentage points. For Portugal, the supply-side effects are estimated to be smaller than for the other countries, partly because a higher proportion of assistance goes to agriculture, while for Spain, the impact is also estimated to be smaller, in this case because of the smaller size of EU transfers relative to GDP.

In the QUEST II model, which also incorporates both demand and supply-side effects, the influence of mone-

tary variables (interest rates, inflation and so on) is included explicitly. As compared with the HERMIN model, it assumes that individuals and private businesses are more forward-looking in the decisions they take about consumption and investment, implying faster responses to changes in policy. It also assumes that fiscal policy is expansionary, which in the model tends to dampen economic growth through higher interest rates, a consequent appreciation of the exchange rate and (partial) crowding-out of private investment.

Because of the dampening effects on demand, it is perhaps unsurprising that QUEST II produces lower estimates of the effect of EU structural policies on economic growth than the other models. GDP growth is estimated to have been increased by only 0.3 percentage points in Greece in the 1989 to 1993 programming period and by only 0.1 percentage points in the period 1994 to 1999, in Ireland by 0.3 percentage points in both periods, in Portugal by 0.3 percentage points in the first period and 0.2 percentage points in the second and in Spain by 0.1 percentage points in both.

In summary, although too much importance should not be attached to the precise magnitude of the estimates, it is encouraging that very different models all point in the

same direction. The general conclusion appears to be that the Structural Funds have had a significant effect in reducing disparities in economic performance across the Union and narrowing the gap in GDP per head between the four Cohesion countries and the rest of the Union. This is supported by a large number of more detailed studies.

If the estimates derived from the models are compared with the results of the analysis in the text of differing changes in GDP per head in the four countries, it suggests that other factors have had a significant influence on relative performance apart from EU structural policies, which is not too surprising. This is most notably the case for Ireland and Greece, which represent the two extremes in terms of GDP growth. Among these factors are the macroeconomic and other policies pursued by government, the scale and nature of inflows of direct investment, the initial structure of economic activity, the enterprise shown by business and the efficiency of public administration together with the relative endowment of social capital, as defined in Part 2 above. It is through the last of these that EU structural policies may also have had an indirect, if perhaps no less important, impact on the development of lagging regions, as explained in Part 2.

[1] Objective 6 areas, which are very sparsely populated, are also considered here along with Objective 1 regions. However, Objective 6 typically does not target whole NUTS 2 or NUTS 3 regions. Regions included in the analysis are those where at least 50% of the total population lives in assisted parts of the region. For Objective 6, this means that the analysis is based on data for a restricted number of NUTS 3 regions: Jämtlands län (S), the regions of Itä Suomi and Lappi (FIN).

[2] See the identity set out at the beginning of Part 2, p. 75.

## **Part 4 Enlargement**

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## 4 Enlargement

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### 4.1 Introduction

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Enlargement to the countries of Central and Eastern Europe and Cyprus is a great opportunity, both for the countries concerned and for the EU as a whole. Shared geographical, historical, political, social and economic factors mean that it makes sense to treat the Central and Eastern European countries together. Cyprus, however, has a different history and a different economic situation and is therefore examined in a separate section below.

Since the turn of the decade, the Central and Eastern European countries (CEE countries) have entered a period of profound political and economic reform, an experience without precedent in Europe this century. The previous regime was based on the centrally planned economy which limited the exposure of producers to markets and to competition both at home and from the outside world. Reform is directed at the establishment of markets and the discipline they entail, and at the opening up of the economy to international trade. The changes are being introduced in a very short period of time. Consequently, the impact on economy and society in CEE countries has been considerable.

The effects can be seen in demographic and economic changes. Population has not changed much or has fallen as a result of outward migration as well as, increasingly, of falling fertility rates. The introduction of the market mechanism has led to a radical restructuring of economic activity. As a result, economic output has declined significantly, though there are clear signs of recovery since 1993 or 1994. This has also led to falling employment, a contraction of the labour force and a rise in unemployment.

With the dismantling of trade barriers, international trade has increased significantly, as has the inflow of foreign investment. The dominant trading partners and the main source of foreign investment have been the neighbouring Member States of the EU. This increased economic integration across wider Europe as a whole is both a cause and an effect of major political developments, notably the fact that CEE countries count future membership of the European Union among their top priorities. The EU, in turn, has initiated a process of preparing for enlargement. This began formally with the European Council meeting of Copenhagen (1993), which set key criteria for membership, and the European Council meeting in Luxembourg (1997) decided to open accession negotiations with groups of applicant countries. In the meantime, the Commission's proposals for the Union's future policy priorities and financing — *Agenda 2000* — make specific provision for enlargement.

While enlargement provides, above all, the opportunity for maintaining stability and improving prospects for growth in Europe, there is little doubt that it presents a considerable challenge and will undoubtedly increase the heterogeneity of the EU. This was highlighted in the *Study on the Impact of Enlargement on EU Cohesion Policy (Agenda 2000)*, which confirmed that the applicant countries lag far behind the EU Member States in terms of economic development and that their institutional capacity to manage the Structural Funds needs to be improved. It, therefore, concluded that they should be given pre-accession assistance and be familiarised with EU structural policy.

The concern here is to further develop the analysis of the demographic and economic situation in the different CEE countries (more specifically, in Bulgaria, the

Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia), and in their regions as well as to examine the development of regional policy. The analysis indicates the wide differences in experience between the countries. An understanding of these differences is essential as enlargement approaches. The analysis focuses to a significant extent, partly because of data availability, on the period 1990 to 1995 following the initial implementation of reforms, though developments in more recent years are covered insofar as data exist. Because of uncertainty about the reliability of some of the data, in particular at regional level, certain results should be treated with caution and considered as indicative only.

## 4.2 Demography: situation and trends

Total population in the 10 CEE countries covered here amounted to 105 million in 1997, some 28% of the present population of the EU. In the late 1980s, total population peaked at over 106 million, so that in overall terms there has been little change during the 1990s. This followed a long period of growth, though at a slowing rate, with total population increasing from 86 million in 1960 to 100 million in the late 1970s (Tables 36 and 37).

Two countries, Poland (38½ million) and Romania (22½ million), account for almost 60% of the total population in the region, and another two, the Czech Republic and Hungary, each with just over 10 million inhabitants, for another 20% or so. Apart from Bulgaria (8½ million) and Slovakia (5½ million), the remaining countries all had a population of below 4 million, and below 2 million in the case of Slovenia and Estonia.

Most of the CEE countries are more sparsely populated than the EU, population density averaging 98 inhabitants per square km as against 116 in the Union. The Baltic States are the most thinly populated (Estonia, 32 inhabitants per square km, Latvia, 39 and Lithuania, 57) while the highest population densities are to be found in the Visegrad States (131 per square km in the Czech Republic, 123 in Poland, 110 in Hungary and 109 in Slovakia).

The natural increase in population (births minus deaths) was equivalent to 0.4% of total population

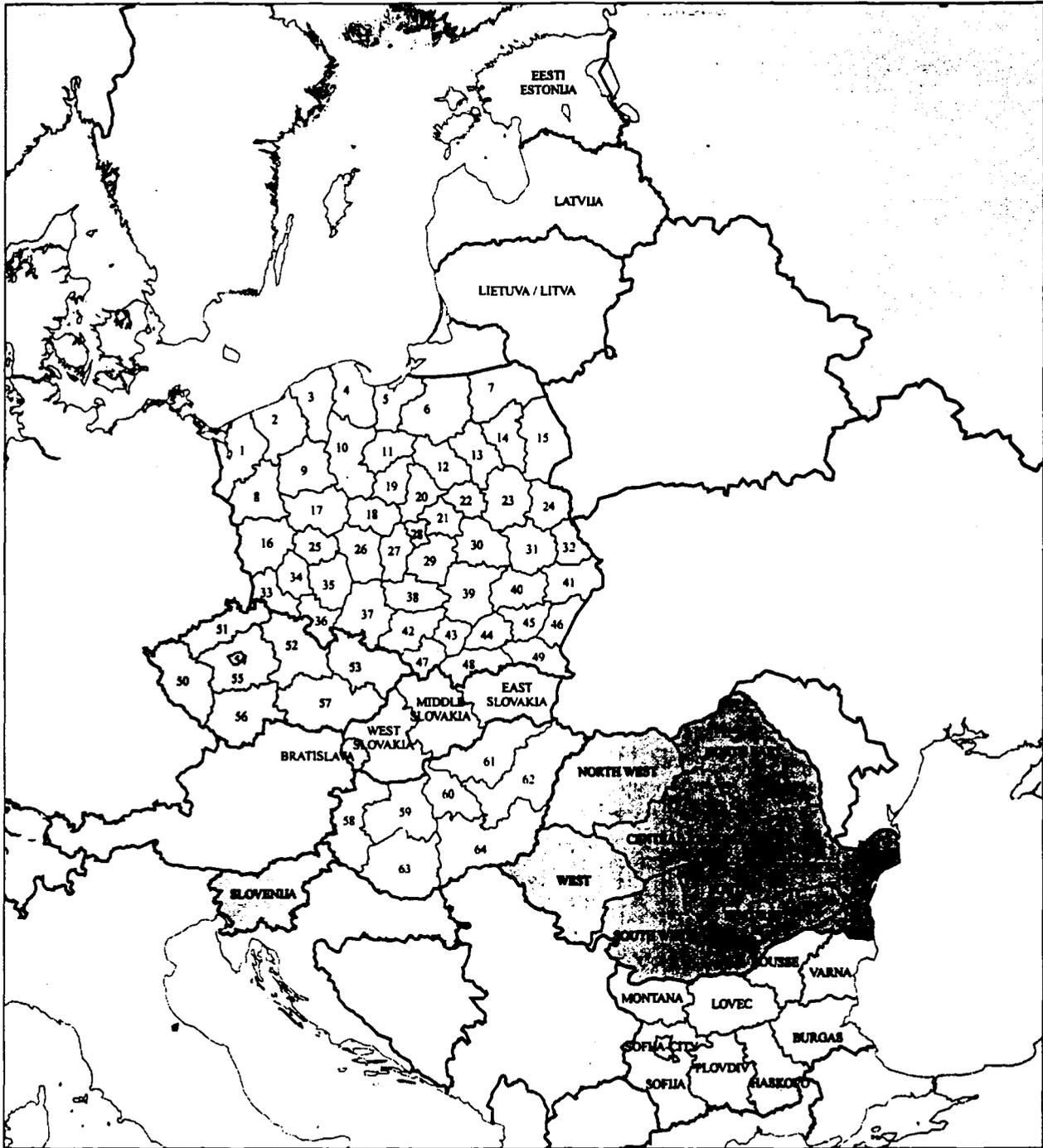
over the period 1990 to 1995 as a whole (Table 35). This indicates that the main reason for the reduction of population during the 1990s has been significant net outward migration, which amounted to some 1.1% over the period. However, the net outflow was concentrated in the early years of transition and since 1993 has come to a virtual halt, and the main reason for continued population decline since then has been falling fertility rates. From 1990 to 1995, total birth rates fell from 13.6 births per 1000 inhabitants to 10.4, a fall of over 20%. Death rates have, on the other hand, remained unchanged at around 11 deaths per 1000 inhabitants.

In terms of general demographic developments, the CEE countries can be divided into four groups:

- countries with declining population due to both negative natural growth and outward migration, which include Bulgaria, Estonia, and Latvia;
- countries with declining population overall but with different changes in natural growth and migration, which include Romania, with little or no natural growth but net outward migration, and Hungary, with negligible net outward migration but a natural decline in population;
- countries with stable population, which include those with little natural change in population or net outward migration, such as Slovenia, the Czech Republic, and Lithuania, where natural growth has offset net emigration;
- countries with growing population, in which natural growth has more than offset net emigration, which is the case in Poland and Slovakia.

The sharpest fall of population between 1990 and 1995 occurred in Latvia and Estonia (-6%), in Bulgaria (-4%) and Romania (-2%). The Czech Republic, Slovenia and Hungary also registered declines, but more modest. In Lithuania, population was unchanged over the period as a whole but fell after 1992. Only in Poland and Slovakia did population increase and according to projections these two countries alone will experience growing population in the medium-term.

Much the same factors underlie these changes. In the early 1990s, substantial outward migration was the



**Map 43 Statistical regions in Central and Eastern Europe**

**POLAND**

- 1 SZCZECIŃSKIE
- 2 KOSZALIŃSKIE
- 3 ŚLĄSKIE
- 4 GDŃSKIE
- 5 ELBLĄSKIE
- 6 OLSZTYŃSKIE
- 7 SUWAŃSKIE
- 8 GORZÓWSKIE
- 9 PIŁSKIE
- 10 BYDGOSKIE
- 11 TORUŃSKIE
- 12 CIECHANÓWSKIE
- 13 OSTROLECKIE

- 14 ŁÓDŹSKIE
- 15 BIAŁOSTOCKIE
- 16 ZIĘLONOGÓRSKIE
- 17 POZNAŃSKIE
- 18 KONIŃSKIE
- 19 WŁOCŁAWSKIE
- 20 PŁOCKIE
- 21 SKIERNIEWICKIE
- 22 WARSZAWSKIE
- 23 SIEDLECKIE
- 24 BIAŁSKOPODŁASKIE
- 25 LESZCZYŃSKIE
- 26 KAJUSKIE

- 27 SIERADZKIE
- 28 ŁÓDŹKIE
- 29 PIOTRKÓWSKIE
- 30 RADOMSKIE
- 31 LUBELSKIE
- 32 CHEŁMSKIE
- 33 JELEŃIÓGÓRSKIE
- 34 LEGNICKIE
- 35 WROCŁAWSKIE
- 36 WAŁBRZYSKIE
- 37 OPOLSKIE
- 38 CZEŚTOCHÓWSKIE
- 39 KIEŁECKIE

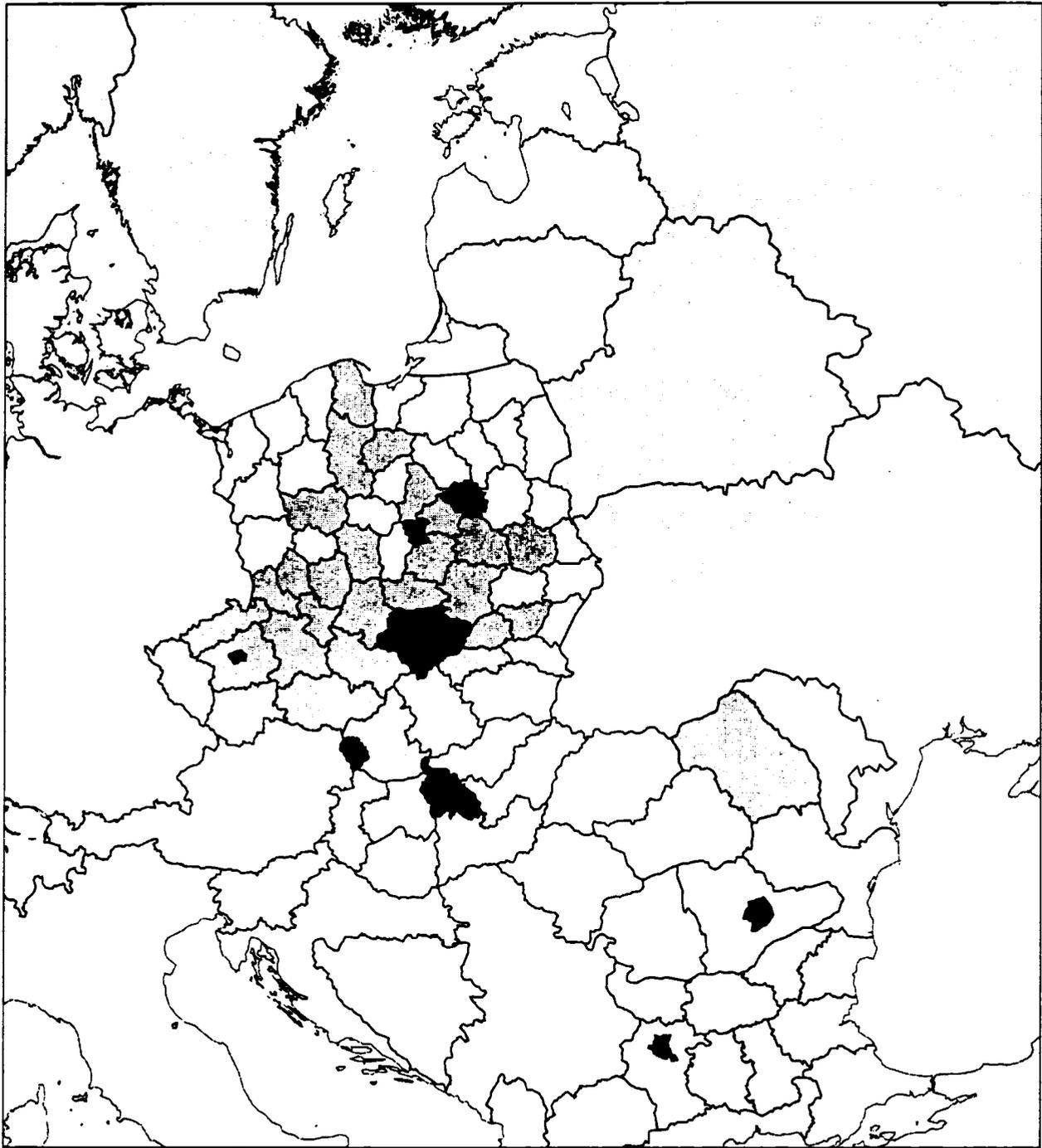
- 40 TARNOBŹSKIE
- 41 ZAMOJSKIE
- 42 KATOWICKIE
- 43 KRAKÓWSKIE
- 44 TARNÓWSKIE
- 45 RZESZÓWSKIE
- 46 PRZEMYSKIE
- 47 BIELSKIE
- 48 NOWOSADACKIE
- 49 KROSŃSKIENSKIE

**CZECH REPUBLIC**

- 50 WEST BOHEMIA
- 51 NORTH BOHEMIA
- 52 EAST BOHEMIA
- 53 NORTH MORAVIA
- 54 PRAHA
- 55 CENTRAL BOHEMIA
- 56 SOUTH BOHEMIA
- 57 SOUTH MORAVIA

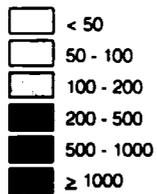
**HUNGARY**

- 58 WEST TRANS-DANUBIA
- 59 CENTRAL TRANS-DANUBIA
- 60 CENTRAL HUNGARY
- 61 NORTH HUNGARY
- 62 NORTHERN GREAT PLAIN
- 63 SOUTH TRANS-DANUBIA
- 64 SOUTHERN GREAT PLAIN



**Map 44 Population density in Central and Eastern Europe, 1996**

Inhabitants/km<sup>2</sup>



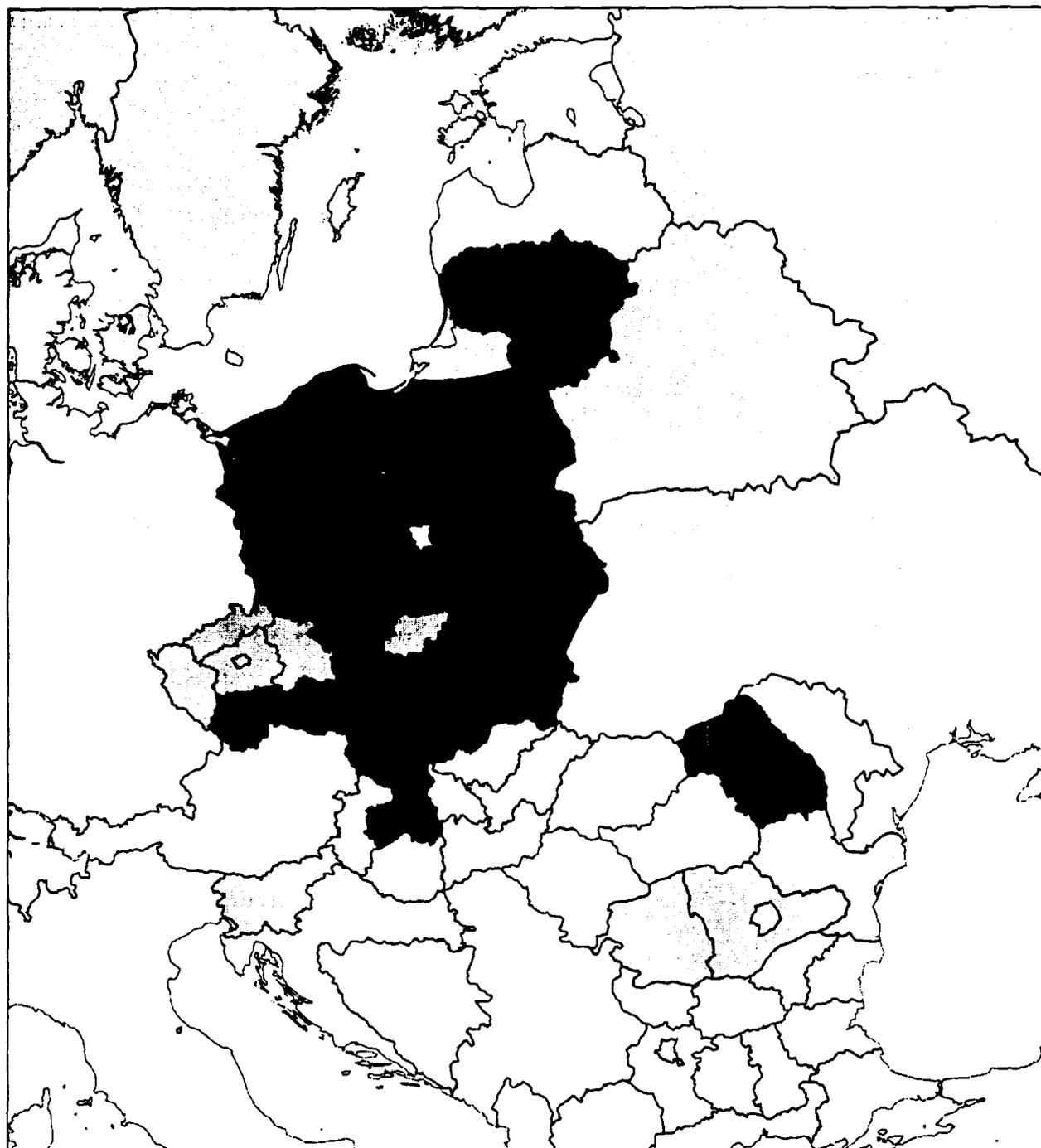
CEEC average = 97.7

BG: 1994

RO: 1995

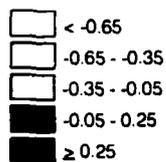
Source: Eurostat





**Map 45 Population growth in Central and Eastern Europe, 1990-96**

Annual average % change



CEEC average = -0.2

Standard deviation = 0.67

BG: 1990-94

RO: 1990-95

Regional figures are approximate

Source: Eurostat

0 50 250 km

main reason for decline. In Estonia, this amounted to 4.9% of population between 1990 and 1995, only slightly more than in Latvia (4.6%), largely reflecting the withdrawal to Russia of the Soviet army. In Slovenia, inflows of refugees from former Yugoslav republics offset outward migration, while in other countries, outward migration seems to have had a more limited effect on population.

After reaching a peak in 1992 (reducing population by 2.1% in Estonia and 1.7% in Latvia), outward migration has declined in all the countries and, as noted above, population decline is now due to a natural fall. In Latvia, birth rates have fallen from 14 births per 1000 inhabitants in 1990 to 7.7 in 1995 and most other countries have experienced a reduction, though by somewhat less. The effect of declining fertility rates on population, which may be partly a result of transition and which was initially overshadowed by outward migration, is now fully evident.

#### **Regional aspects**

While Poland, the Czech Republic, Romania, Slovenia and Lithuania have a relatively balanced regional distribution of population, in Hungary, Slovakia, Bulgaria, Estonia and Latvia, there is greater concentration in and around the capital city (Maps 43 and 44).

In Poland, there are a number of large urban centres (Gdansk, Poznan, Lodz, Wroclaw, Warsaw), but these are geographically dispersed and of a similar size (1–2.5 million), though Upper Silesia, where Katowice with 3.8 million inhabitants accounts for 10% of the total population of the country, is an exception. In the Czech Republic, Prague with its surrounding region (2.3 million) represents some 20% of the total population but this is less than Moravia (almost 4 million). In Slovakia, the Western region in which the capital, Bratislava, is located, accounts for around 40% of the country's population with the remaining 60% distributed between the central and Eastern parts. The concentration of Romania's population in the Eastern parts of the country, except in Bucharest, is relatively weak. Similarly, in Slovenia, population is relatively evenly dispersed across the country, as it is in Lithuania, where there are a number of urban areas of much the same size as well as a large rural population.

By contrast, in Hungary, the population is concentrated in Budapest, the surrounding area and Western regions. In Bulgaria, some 40% live in the South-Western region where Sofia is situated. More extremely, in both Estonia and Latvia, almost half the population of the country live in the capital.

As compared with the EU, the major cities in the region are generally smaller and medium-sized cities are proportionately more important. Moreover, the large cities have not tended to grow at the expense of the smaller settlements around them. In all 10 of the countries, over half the population live in urban areas, the proportion ranging from only 51% in Slovenia to 70% in both Estonia and Latvia. While comparisons are difficult, more people live in rural areas than in most EU countries and the rural-urban migration, predominant in most parts of the region during the 1980s, has either slowed down or been reversed in the 1990s. The latter has been the case in Bulgaria, Estonia, and Latvia, where population has shifted in some degree from cities to countryside, partly because of job shortages and increased rents in the former. Romania is a special case as the recent increase of rural population is largely a response to the lifting of restrictions on internal migration. Poland constitutes the main exception as the share of urban population is still increasing.

The period since transition has not resulted in a major increase in the spatial concentration of population. Between 1990 and 1995, population in all Czech regions declined though less in Moravia than in Bohemia. Over the same period, population continued to grow in nearly all Polish regions (*voivodships*), though at a somewhat slower pace and with some exceptions, such as Lodz, Katowice and Warsaw. Population fell in all Romanian regions with the exception of the North-East. In Slovakia, population growth slowed down but there was, nevertheless, an increase in most regions, with East Slovakia registering the largest rise, largely because of higher natural growth (Map 45).

All Bulgarian regions experienced significant population decline with the sharpest fall in Haskovo and Northern regions. Even in Sofia, the capital, there was an overall fall of over 2% over the period. From 1992 onwards, regional populations have tended to stabilise. In Hungary, the decline in population has continued in all regions, though at a slower pace, with Central Hungary, which includes Budapest, showing

the largest fall (2.5%), largely because of an above average reduction in birth rates.

## Labour force

### Age structure of population

As in the EU, population is ageing in CEE countries. The number of people below working age (15) has declined from well over 20% of the total in virtually all 10 countries in 1990 to 19% or below in most countries in 1997. This ageing applies to all candidate countries with only Poland, Lithuania and Slovakia having a higher proportion of young people (around 21%), though one which has fallen by as much as elsewhere. In 1995, Bulgaria, Slovenia, the Czech Republic and Hungary had the lowest shares of population under working age (18%).

As a result of increases in Poland and the Czech and the Slovak Republics, the total population of working age in the region registered a modest increase between 1991 and 1995. This increase was most significant in the Czech Republic, where the share of population of working age grew from 66% to over 69%, and in Slovakia, where it rose from 64% to over 66%. In the future, however, the decline in population under working age will inevitably lead to the contraction of the potential labour force in many CEE countries. Poland and the Slovak Republic are exceptions, since their population is younger and they have higher birth rates than elsewhere.

All the countries have experienced a rising share of population over working age. The rise was most pronounced in the Baltic States and Bulgaria. In Lithuania, the share increased from 10.4% to almost 13% between 1991 and 1995 and in Estonia from 11.6% to 13.1%. In Poland and the Slovakia, the increase has been less than in other countries and the relative importance of this group is lower (at some 10% of the total).

The ageing of population, however, is moderated to some degree by low life expectancy compared with other developed countries. In most CEE countries, life expectancy at birth is around 70, and only 68 in Latvia and some studies suggest that life expectancy has fallen since the transition began. Infant mortality, moreover, is significantly higher throughout the region than in the EU. While it stood at 5 per 1000 births

in 1996 in the latter, it was 7 per 1000 in Slovenia and 9 per 1000 in the Czech Republic, the countries with the lowest rates in the region. In Romania, infant mortality was almost 25 per 1000 births and in Bulgaria and Latvia 16 per 1000.

As in the EU, the ageing of the population in the region is set to increase markedly over the next 10 or 20 years, with a consequent rise in the old-age dependency ratio — the number of people in retirement who have to be supported by those in work.<sup>1</sup> Moreover, as a result of lower retirement ages, the share of dependent pensioners is clearly higher than the age structure would suggest.<sup>2</sup> Early retirement was encouraged during the first stages of the transition process as a means of limiting the rise in unemployment. Pensions currently account for  $\frac{2}{3}$  to  $\frac{3}{4}$  of total social security outlays, in some cases even representing the single largest item of public expenditure. Continued ageing is, therefore, likely to put social security systems under further strain.

### Dependency rates

CEE dependency rates (population above and below working age in relation to that of working age) ranged in 1996 from 48–50% in Latvia, Estonia, the Czech Republic and Slovakia to 54–55% in Poland, Romania, Bulgaria and Lithuania (Graph 36). Variations between countries are marked both for old-age and youth dependency. Slovakia, Poland, Romania, the Czech Republic and Bulgaria have the highest rates of youth dependency, while old-age dependency is highest in Hungary, Lithuania, Estonia, Poland and Romania.

Since the start of transition, the overall dependency rate has increased in Poland, Romania and Bulgaria while it has not changed much in the Czech Republic, Hungary, Estonia and Lithuania. In Slovakia and Latvia, it has fallen (there are no data for Slovenia).

### Regional Aspects

The share of population under working age tends to be relatively high in rural and certain traditional industrial areas, while the converse is true for the major urban areas. In the Czech Republic, Prague has the lowest proportion of population under working age and the highest proportion above it. Similarly, in Hungary, the population of Budapest is older than in most

other parts of the country, as it is in Warsaw, Bratislava and Bucharest.

By contrast, the Western and Northern parts of Hungary as well as Northern Moravia and Bohemia in the Czech Republic have relatively higher shares of population under working age. This is also the case in the North-West and Eastern *voivodships* in Poland, Eastern Slovakia and the Northern and Eastern regions of Romania. In the latter two countries, this is largely caused by higher birth rates in rural areas. However, the share of population of working age in these areas is generally low, suggesting outward migration to urban areas in search of employment.

### Labour force participation

Under the previous centrally planned economic system, the commitment to full employment and the expectations that all men and women physically able to work would do so, led to very high rates of labour force participation, especially among women. Before the start of reforms, in 1989 or so, participation rates (employed plus unemployed relative to population 15 to 64) ranged from 70 to 80% with a peak at 83% in the Czech Republic and the lowest rate in Bulgaria with 70%. This by far exceeded the corresponding EU participation rate of some 69% (1989), the difference being in part due to higher female participation in CEE countries, with rates up to 70% except for Poland (63%) and Slovakia (65%).<sup>3</sup>

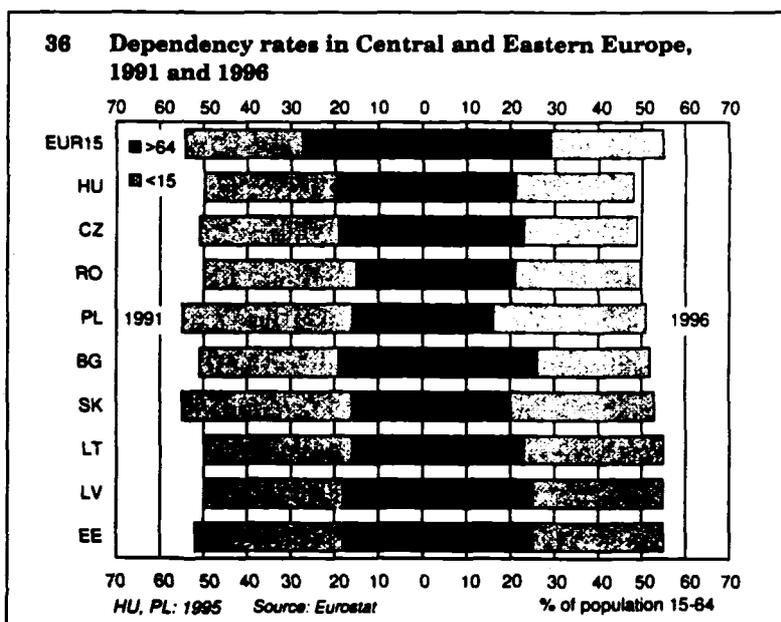
With transition to market economies, CEE citizens became freer to choose not to engage in economic activity. At the same time, employment opportunities declined. Consequently, labour force participation contracted. Although comparisons are problematic because of the progressive shift to labour force surveys as the source of data and the use of official, registered figures in a few countries, it seems clear that sharp reductions in labour force participation have taken place in most CEE countries, with the possible exception of the Slovak Republic and Romania.

By 1993, surveys conducted in some of the countries (providing the first real possibility of comparing the situation in different countries) suggested participation rates ranging from 63% in Hungary to some 81% in Lithuania. Rates had seemingly fallen since the beginning of the reforms in all countries, to 67–68% in Bulgaria, the Slovak Republic and Slovenia, 70% in Poland and Latvia and around 75% in the Czech Republic and Estonia. The only exception was Romania with participation broadly unchanged at 78% (Graph 37).

The fall in labour force participation was very much concentrated in the early years of transition. From 1993 to 1995, labour force participation stabilised or even increased in some CEE countries (Latvia, Slovakia, Slovenia, Romania) but continued to fall in most. By 1995, Bulgaria's participation rate had fallen to 63% and that of Hungary to 59%, a decline of 17 percentage points since the start of transition.

Corresponding figures were 72% in the Czech Republic and 69% in Poland.

However, labour force participation has stabilised since 1995. With the exception of Lithuania, which previously had a high rate, participation rates were mostly unchanged between 1995 and 1997. By 1997, the overall rate of participation was around the EU average (68%) in Poland, Slovakia, Slovenia and Latvia, significantly above in the Czech Republic, Romania, Estonia and Lithuania (73–79%) and significantly below only in Hungary (57%) and Bulgaria (65%). Compared to the pre-transition period, Hungary has expe-



rienced the sharpest overall decline in participation followed by the Czech Republic, Bulgaria, Poland and the Slovak Republic. Romania constitutes a notable exception since participation seems actually to have increased.

### Trends in gender and age structure

With transition, female activity rates were expected to decline by more than those of men, partly as a result of companies abandoning many of the social provisions previously undertaken. Although reliable figures are lacking, this does not seem to have been the case. During the early phase of transition, male activity tended to decline faster than female activity. However, the status of the female labour force shifted, to a larger extent than for men, from employment to unemployment. Among men, there was a higher propensity to leave the labour force altogether on losing a job. For example, in Romania, the female activity rate increased during early transition but female unemployment rose while employment actually declined.

From 1992 or 1993 onwards, female activity rates clearly contracted but, with the exception of Hungary, no faster than male rates. The decline of female participation was generally associated with an ongoing decline in female employment. In 1995, female participation rates ranged between 60% and 65%, apart from Hungary (51%) and Romania (74%). Between 1995 and 1997, female participation stabilised and even increased in Bulgaria, the Czech Republic, Latvia and Slovenia, but continued to fall in Hungary (49%) and Poland (60%)

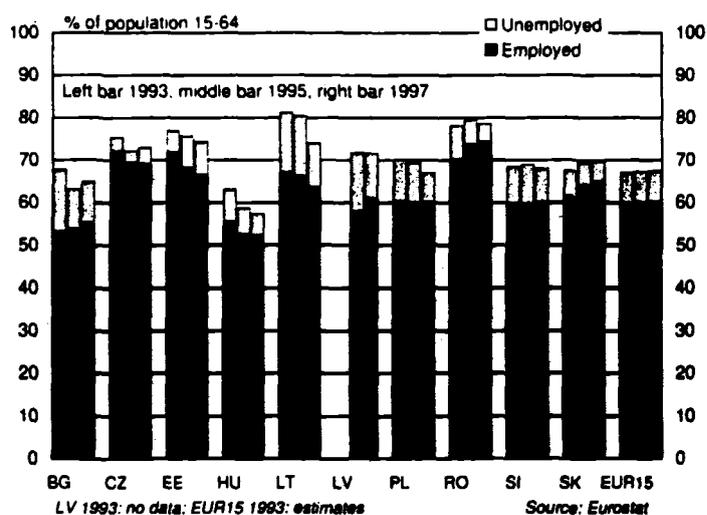
Transition has also affected the age distribution of labour forces. Participation among young and older age groups has fallen by much more than for those of prime working age (25 to 55). For those under 25 years, participation has plummeted with economic restructuring, making initial entry into the labour market extremely difficult. However, the decline, at least in some countries, has been accompanied by rising participation in education. This is notably the case in Hungary, though in other countries, education participation tended to rise only slightly if at all and failed to match the decline in labour force participation.

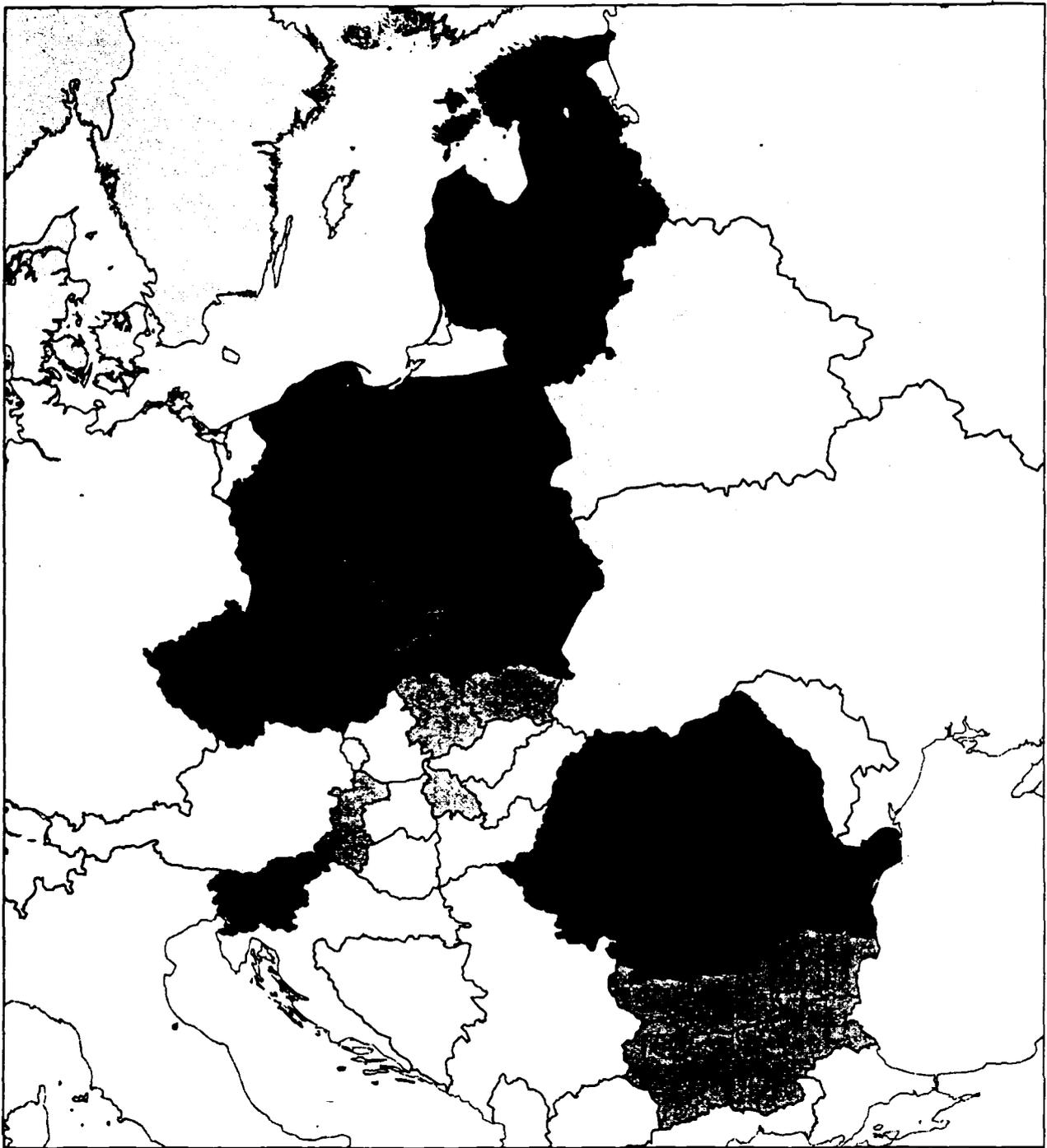
### Regional Aspects

The regional impact of contracting labour forces varies widely between the CEE countries. In general, labour force participation is high in regions for which restructuring is still incomplete and where dependence on single industries or agriculture remains high. In a number of rural areas, agriculture increasingly constitutes an employment reserve, absorbing workers laid off in other sectors. In some regions, the previously neglected tertiary sector has developed to such an extent as to compensate for the reduction in job opportunities elsewhere in the economy (eg in Prague). A seeming paradox, at least in the short to medium term, is that regions with low activity rates are often the ones which have succeeded most in restructuring their economies.

In the Czech Republic and Hungary, labour force participation has fallen in all regions. However, while Czech regions show only small differences, with the lowest rates in the Moravian regions and the highest in Prague, in Hungary, regional disparities are significant; North Hungary and the Northern Great Plain display the lowest rates, and Central Hungary, the highest. In Hungarian regions with low activity, industrial and agricultural restructuring has reduced employment with an increasing proportion of the population of working age ultimately leaving the labour force. Regions like Central Hungary and Central Trans-Danubia, where higher labour force participation has been

**37 Employment and participation rates in Central and Eastern Europe, 1993, 1995 and 1997**





**Map 46 Activity rates in Central and Eastern Europe, 1995**

Labour force as % of population 15-64

-  < 62
-  62 - 67
-  67 - 72
-  72 - 77
-  ≥ 77
-  No data

BG: national level

Source: Eurostat

0 50 250 km

maintained, have generally benefited from higher growth of service sector employment (Map 46).

In Slovakia, the labour force contracted in all regions up to 1993, and stagnated thereafter. The exception is Bratislava which, because of substantial commuting from the neighbouring region of Western Slovakia, has artificially high participation rates. In Western Slovakia, therefore, participation, though clearly understated, is the lowest in the country. Rates in Middle and Eastern Slovakia are only slightly lower than the national average.

In Poland and Romania, by contrast, labour force participation remains high in predominantly rural areas, while many industrial regions have experienced a significant reduction as large enterprises have contracted or have closed down. In Poland, this has resulted in marked differences in participation rates between the two types of region, while in Romania, participation rates in Bucharest and the South-East, have fallen to well below that in other, more rural, parts of the country where employment in agriculture has expanded.

### 4.3 Economy

#### GDP

The change in GDP in CEE countries since the transition began is difficult to assess for two reasons. First, there is a lack of reliable figures, especially for the earlier years of the transition, which partly stems from the change in accounting conventions from the concept of net material product, which tends to underestimate the output of services, to the valuation method used in market economies. Secondly, and more importantly, even if reliable estimates of the change in the volume of output produced did exist, these would be impossible to interpret meaningfully because of the fundamental change in the nature of production, from a system where this was determined by central planners to one where it is determined largely by consumer demand. Whereas under the previous regime, choice of what to buy was restricted to a limited number of products, the development of a market economy has seen the range of goods and services on sale widen considerably, with a consequent immeasurable increase in consumer satisfaction. As a result, present figures for GDP are not comparable with

those before, or even immediately after, the transition began.

Nonetheless, there is little doubt that the CEE countries have experienced a significant reduction in economic output. Best estimates put the contraction at between 20% and 30% in GDP with an even sharper decrease in the Baltic States.<sup>4</sup> In 1995, total CEE output was estimated to be equivalent to 11% of total EU GDP in terms of purchasing power standards.

With transition, the national authorities, with varying speed, shifted economic policy towards macroeconomic stabilisation and the introduction of market mechanisms. Tight monetary and fiscal policies were aimed at curbing inflation and creating favourable prospects for long-term growth. Subsidies were gradually reduced and loan facilities for less efficient state-run companies diminished to promote industrial restructuring and to expose enterprises to market forces. Moreover, the reforms coincided with the disintegration of the former trading system (CMEA) and the collapse of trade with the former Soviet Union as well as within the region itself, which ceased to be on preferential terms supported by subsidised energy and other inputs. Demand from Russia and the CIS states which had been the main export market declined dramatically, while global recession reduced the beneficial impact of the re-opening of Western markets.

The scale and timing of the contraction in GDP varies between the CEE countries. Between 1990 and 1993, nearly all of them experienced a significant fall in production. In terms of the volume of goods and services produced, estimates put the reduction at around 50% in Lithuania, over 40% in Latvia and around 30% or more in Estonia, Bulgaria and Romania. Although the fall in production in Poland, the Czech Republic, Hungary, Slovenia and Slovakia was less, it was still around 20%.

From 1993 on — and from 1991, in the case of Poland — many economies began the process of recovery. This resulted in growth in 1993 in the region as a whole of some 1%. While GDP continued to fall in Bulgaria (-1.5%), Hungary (-0.6%) and Slovakia (-3.7%), it increased in Poland (3.8%), Romania (1.5%) and Slovenia (2.8%). Although output grew in Romania, this was caused by a rise in domestic consumption mainly fuelled by government subsidies to industry. By contrast, there was a significant fall in GDP in the

Baltic States because of the late start of transition. In 1993, GDP in Estonia declined by 9%, in Latvia by 15% and in Lithuania by 16% (Graph 38).

Economic recovery gathered pace in 1994 and 1995, with growth overall of almost 4% in the first year and around 5½% in the second. Over these two years, GDP increased in all of the countries, apart from Latvia, which was severely affected by financial crisis, and Lithuania, where output fell by almost 10% in 1994. The highest growth rates were in Poland, Slovakia and Romania, where output increased by some 7% in 1995.

Since then, most economies have continued to grow. In 1996, GDP in the region increased by 4%, though growth slowed down in 1997 to 3½%. Growth was highest once again in Poland and the Slovakia, at around 6–7%. By 1997, recovery was established in the Baltic States, with GDP increasing by 11% in Estonia and 6% in Latvia and Lithuania. In Hungary and Slovenia, growth was lower at around 4%. In the Czech Republic, however, economic and political crisis resulted in GDP growth declining to 1% in 1997.

By contrast, in Bulgaria and Romania, political and economic problems remain which could threaten further progress. In 1996 and 1997, GDP in Bulgaria fell by 10% and 7%, respectively, while in Romania, it declined by over 6% in 1997.

Notwithstanding recovery in recent years, the level of output in most CEE countries remains well below pre-

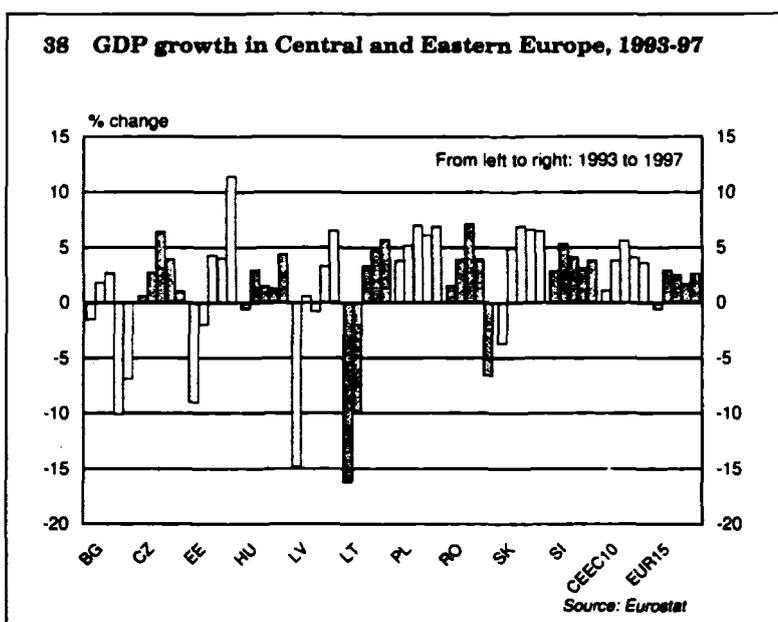
transition levels. By 1997, only in Poland (12% higher) was GDP above its 1989 level, though in both Slovenia (only 1% lower) and Slovakia (5% lower), it is expected to be so in 1998. The Czech Republic and Hungary are unlikely to be far behind. The largest reductions have occurred in Lithuania and Latvia, with GDP in 1997 only some 61%, in the first case and 56%, in the second, of the estimated level in 1989. In Estonia, GDP had, by 1997, recovered somewhat to around 73% of its 1989 level, but in Bulgaria, it was down to only 63%.<sup>5</sup>

In general, the countries which started to implement economic reforms earliest have tended to experience less of a reduction in GDP (Poland and the Czech Republic). Where economic restructuring was delayed, either for internal reasons, as in Romania and Bulgaria, or for external reasons, as in the Baltic States (which did not become independent before 1991), the fall in GDP has been more severe.

#### A catching-up process?

As a result of the fall in output, real income in CEE countries, measured in terms of GDP per head, has declined. As reliable GDP per head figures, in terms of purchasing power standards (PPS) to take account of differences in price levels between countries, are not available prior to 1993, the magnitude of this decline is difficult to assess. In 1995, GDP per head, in PPS terms, in the CEE countries was only 38% of the EU average, a major difference not only compared with the average of EU Member States but also in relation to the Cohesion countries (Ireland, Spain, Portugal and Greece), whose average GDP per head was 76% of the EU average in 1995.

As might be expected, variations in GDP per head between countries are significant.<sup>6</sup> Slovenia had the highest level of GDP per head in 1995, at 65% of the EU average, closely followed by the Czech Republic at 62%. In Slovakia and Hungary, GDP per head was also above the average in the region at 43–45% of the EU average, while in Poland, it was slightly below at 36%. The lowest levels were in Romania and Estonia (32% of the EU average), Bulgaria (28%) and the Baltic States, of Estonia (32%) and Lithua-



nia (28%), with Latvia having the lowest level of all the countries with GDP per head of only 25% of the EU average.

The recovery in most CEE countries has seen GDP growth exceeding that in the EU in every year since 1993 and has led to some narrowing of the gap in GDP per head. Between 1995 and 1997, growth averaged just under 4% a year in the 10 countries taken together, almost twice the rate in the Union, with the result that the gap closed over these two years from 38% of the EU to 40%.

The gap has not, however, narrowed in all the countries and, where it has, the extent has varied. Since 1995, GDP growth was substantially higher than the EU average in Poland, the Slovak Republic, Slovenia and the Baltic States and slightly higher in Hungary. Between 1995 and 1997, the catching-up process was most marked in Estonia, where GDP per head increased from 32% of the EU average to 37%, in Poland, where it rose from 36% to 40% and Slovakia, where it rose from 43% to 47%. In Slovenia, the increase was from 65% to 68% — to much the same level in 1997, therefore, as in Greece. Growth in the Czech Republic was a little below that in the EU, so that its relative level of GDP per head has remained much the same, while in Romania and Bulgaria, GDP fell so that the gap with the EU widened.

If growth continues at this rate, GDP per head in some regions, especially in Slovenia and in the Czech Republic will over the next few years exceed 75% of the EU average. These regions may therefore not qualify for Objective 1 of the Structural Funds. In the short-term to medium-term, however, this catching-up process is unlikely to have major implications for EU structural policy.

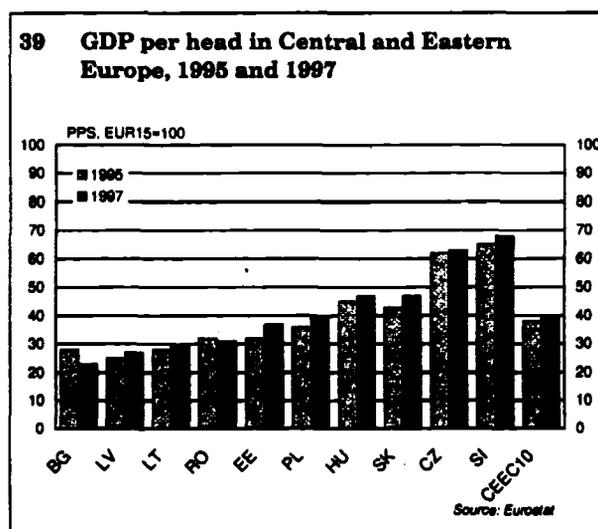
### Shifts in the sectoral structure of GDP

The CEE countries have experienced a significant shift in the sectoral composition of production during the transition, with, in general, a decline in industrial output and an expansion of services. This reflects, in part, the underdeveloped nature of the latter and the inability of many enterprises in the industrial sector to compete with imports from market economies as trade barriers were reduced and subsidies withdrawn. The fall in industrial production was markedly greater than of GDP as a whole throughout the region, particularly in the early years of the transition. How-

ever, since 1993 or so, output has risen again in most countries, but with a significant shift in the composition from heavy industry to consumer goods. Despite the substantial fall in output in the early 1990s, industrial production still accounts for between 30 and 40% of GDP in most CEE countries, more than in most Union Member States.<sup>7</sup>

In contrast to industry, the underdeveloped nature of services before the reforms and the pent-up demand which transition has released have led to a significant rise in the output of the sector. This has been most pronounced in retailing, hotels and restaurants, financial services and activities connected with tourism. By 1995, the share of services in GDP ranged from some 35% in Romania to close to 65% in Estonia and Hungary, with the Baltic States, the Czech Republic and Slovakia experiencing the highest increase.

The development of agriculture has been more diverse. In most countries, production declined sharply in the early years of transition as farms were privatised and collectivisation was abandoned, leading to an increase in the number of separate units, a reduction in average size and reduced efficiency. The fall in output was reinforced by the withdrawal of subsidies and by 1995, agricultural production accounted for less than 10% of GDP in most CEE countries. The decline was especially marked in Poland, the Baltic States and Hungary, in all of which agriculture had been a major source of output. It was also significant in the Czech Republic, Slovakia and Slovenia, where the sector was less important. By contrast, in Bulgaria and Romania, agricultural production has remained



at much the same level in relation to GDP as before the transition began.

### Regional Aspects

Reliable data for GDP per head by region are not yet available for the CEE countries, but preliminary estimates suggest the following (Map 47). In all regions apart from Prague and Bratislava, GDP per head was below 75% of the EU average in 1995. Regional imbalances are characterised by the relative prosperity of the larger urban centres. The regions of Budapest, Warsaw and the Czech and Slovak capitals are, together with Slovenia, the only ones in which GDP per head was over half the EU average. Additionally, Western regions also tend to be more prosperous and these, together with urban regions, typically have a better endowment of infrastructure, much greater inward flows of foreign investment and a higher rate of expansion of services.

Conversely, most other regions have generally been more affected by the decline in industrial and/or agricultural production which has only partially been compensated by expanding services. This is particularly the case for Eastern parts of Poland, North-Eastern Romania and major parts of Bulgaria, Latvia and Lithuania where GDP per head was below 30% of the EU average in 1995.

In the Czech Republic, economic activity is spread relatively evenly across the country and regional disparities are small. Central Bohemia has the lowest GDP per head, but this is probably a reflection of extensive commuting to the capital which largely explains the high GDP per head in Prague. At the same time, Prague has clearly benefited from the expansion of services and international contacts. This is also true of Budapest, which is estimated to account for close to 60% of total FDI going to Hungary and over 50% of foreign trade. As a result, GDP per head in the city of Budapest was over 75% of the EU average in 1995, though the level was below this in the region as a whole. Regional disparities are more pronounced in Hungary, with Eastern parts, notably the North-East, particularly affected by declining industrial and agricultural production.

In Poland, Warsaw and Western regions have tended to benefit from larger inflows of foreign investment, a more rapid growth of trade and a faster expansion of services than other parts of the country. In these re-

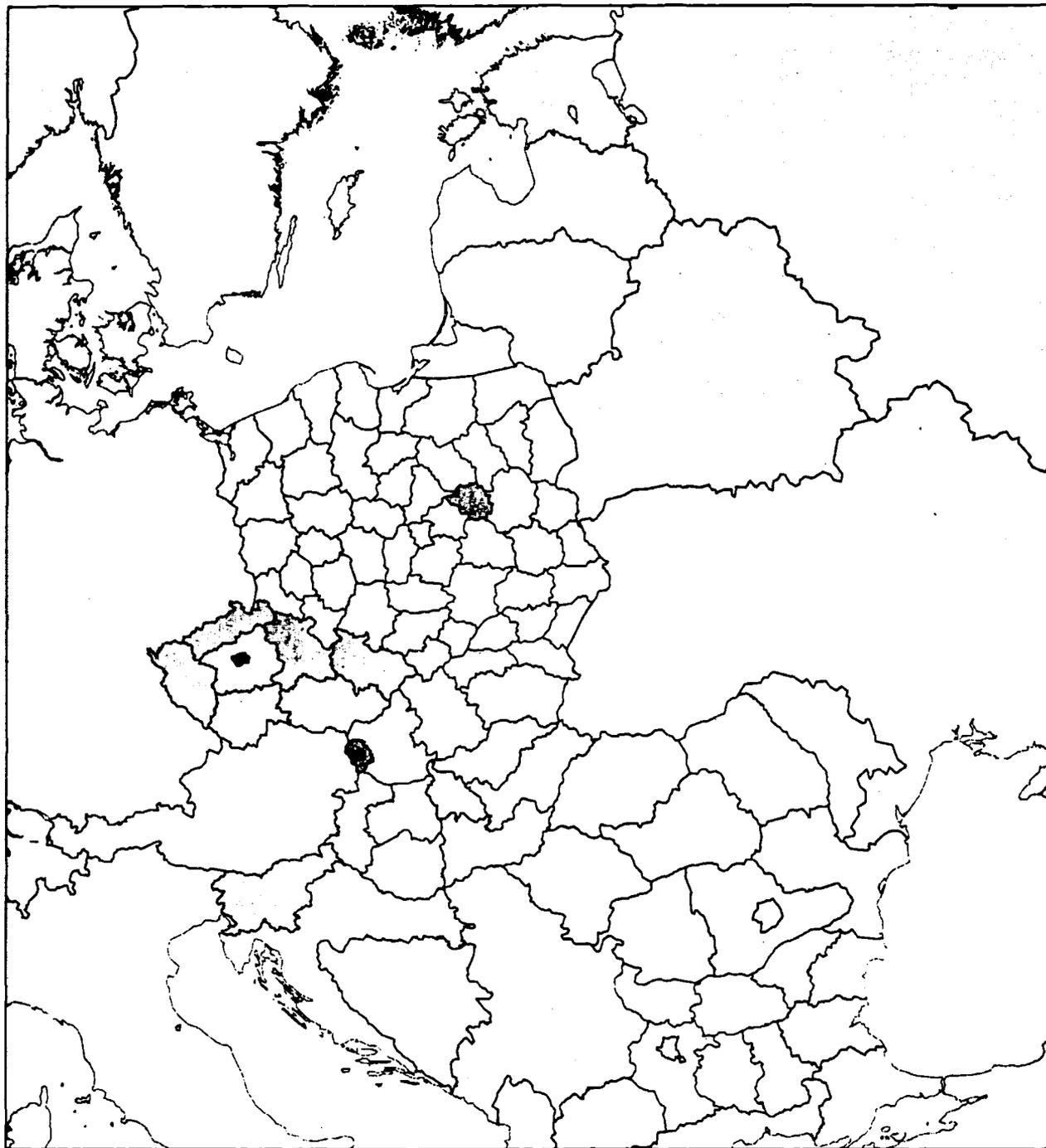
gions, GDP per head was in most cases between 30% and 50% of the EU average. Conversely, many regions in the North-East and South-East have been disproportionately affected by falling agricultural production and, in some cases, the collapse of particular industries. In these, GDP per head was mostly below 30% of the EU average.

In Slovakia, a significant imbalance, accentuated by commuting, exists between Bratislava, which has a rapidly expanding service sector, and the rest of the country. Western areas have benefited from the proximity of the Czech market, the Slovak Republic's main trading partner, while the Eastern areas have suffered a substantial reduction in industrial production, though Kosice seems to have maintained a comparatively high level of GDP per head. In addition, rural areas located mainly in the North-Eastern and South-Central parts of the country, have been depressed by the decline in agricultural production.

Regional disparities in Romania mainly reflect the spatially-differentiated impact of economic and, in particular, industrial decline. The Eastern regions, especially the North-East, have the lowest GDP per head, while the level is highest in Bucharest, though below 50% of the EU average in 1995. In Bulgaria, GDP per head is highest in the capital, Sofia, and the surrounding region as well as in Burgas in the West, whereas in the rest of the country, especially in the North, it was under 30% of the EU average in 1995.

### Employment

The number in employment has declined substantially in CEE countries over the transition period, partly reflecting the large fall in output, partly the process of rationalisation and restructuring to reduce overmanning. Because of data problems in the early transition years — problems which have subsequently been largely resolved through the introduction of household-based labour force surveys in nearly all the countries — it is difficult to be precise about the contraction of employment which occurred in the early 1990s. However, estimates suggest a fall in the number employed in the countries excluding the Baltic States of somewhat over 6 million between 1989 and 1995, a reduction of some 14%.<sup>6</sup> In the Baltic States, employment is estimated to have contracted by ½ million. In general, the largest fall occurred in the early years of transition (1989 to 1993). By 1994 or 1995,



**Map 47 GDP per head by region in Central and Eastern Europe, 1996**

Index, EUR15 = 100



BG, CZ, RO 1995  
Regional figures are approximate  
and provisional

Source: Eurostat

0 50 250 km

employment had stabilised with some countries even registering a small rise.

The extent of the fall in employment varies markedly between countries, in part reflecting the pace at which reforms were introduced. Estimates suggest that between 1989 and 1992, the number in work fell by 25% in Bulgaria, 22% in Hungary and 13% in Slovakia and Poland. In the Czech Republic and Romania, the reduction of employment was more limited amounting to 9% and 5%, respectively. Despite the scale of the fall in employment, in a number of countries (Bulgaria and Romania, in particular), it was markedly less than the reduction in output, suggesting that jobs were still being protected against market forces during the period and that, accordingly, employment was maintained at a higher level than if more far-reaching reforms had been implemented.

The change in employment in the Baltic States over the period is difficult to assess because of the lack of reliable data. The reduction in employment, however, is generally believed to have been smaller since the main reforms were introduced later than in the other countries. Lithuania, for example, had legal limitations on lay-offs until the end of 1992, and employers relied on unpaid leave and shorter working hours to cut labour inputs.

From 1993 on, employment in CEE countries stabilised and even tended to increase after 1995. In the Czech Republic, Hungary, Estonia and Lithuania, employment was lower in 1997 than in 1993 (Graph 40), but the decline was concentrated in the first part of the period and, after 1995, the number employed rose. Over the four years as a whole, employment in Lithuania contracted by 6%, while in Hungary, it fell by 5½% and in Estonia by 9%, in the two Baltic States, the fall reflecting the delayed start of the reform process. Nevertheless, there was a marked rise over the whole period in Slovenia (6.3%) and Slovakia (4.3%).

Most of the countries have, therefore, experienced a significant fall in their employment rates (the total employed in relation to population 15 to 64). In 1989, the employment rate ranged from 70% in Bulgaria to 83% in the Czech Republic. By 1993, rates were below 70% in all countries apart from the Czech Republic (72%) and Romania (72%). The fall was most marked in Hungary and Bulgaria. In the former, employment was only 55% of working-age population, a fall of some 20 percentage points, while it fell by 17 per-

centage points in Bulgaria and 13 percentage points in Slovakia.

Since 1993, however, employment rates have stabilised. While Hungary, Lithuania, Estonia and the Czech Republic have experienced a small additional fall, in Bulgaria and Latvia, the rate has increased. In Romania, the total employed was still around 74% of working-age population in 1997, higher than in most EU Member States. In the Czech Republic, it was some 69%, and in Poland, Slovakia and Latvia, around 60%, while in Slovenia, Estonia and Lithuania, it was in between the two.

Employment of women has been more stable than that of men. Except for the Czech Republic, employment rates of women have contracted less than those of men, which is not too surprising given the sectoral distribution of the fall in employment, which occurred primarily in industry, traditionally a male-dominated sector, while services, in which a disproportionate number of jobs are performed by women, expanded.

At the same time, the recorded figures, including those based on labour force surveys, understate the true level of employment (just as the GDP figures understate the actual level of output and income) because of the significant numbers working in the informal, or black economy. For example, unrecorded employment is thought to represent 15–20% of active population in Latvia and around 25% in Slovenia. According to national sources, in Poland, unrecorded employment is estimated at around 2.2 million.<sup>9</sup> However, employment in the hidden economy can be temporary and less secure, supplementing household income alongside the principal source of earnings in the formal economy.

### **Shifts in the sectoral structure of employment**

Since the transition began, many large state enterprises, particularly in heavy industry, have either closed or been reduced in size, while the number of private firms, predominantly very small ones in services and light industry, have increased significantly. Comparisons with the pre-transition period are even more difficult to make for changes in the sectoral distribution of employment than for changes in the total, because of revisions to the system and method of classification, which has meant that many jobs previously allocated to agriculture or industry have been reassigned to services. This, therefore, tends to ex-

aggerate the shifts between broad sectors which have occurred and to overstate the relative growth of services. Nevertheless, it is indisputable that such a growth has occurred, even though the precise extent is uncertain.

Agricultural employment has fallen in most CEE countries but generally remains well above the level of most EU Member States. In 1997, agricultural employment represented 6% of total employment in the Czech Republic, 8% in Hungary (after a significant fall from 16% in 1990), 9% in Slovakia (from 15% in 1990) and 10% in Slovenia, Estonia and Bulgaria (Graph 41). In other CEE countries, the share of primary sector employment remains high (20% in Poland and 21% in Latvia and Lithuania), though in Poland, it has fallen since the transition began and has continued to decline in recent years (from 23% in 1994). In Romania, the figure was as high as 39%. Agricultural employment, however, has not declined everywhere. In Romania, in particular, it has increased both in absolute and relative terms, largely due to the economic reforms, especially the privatisation of land but also the decline in industry. In Bulgaria and Latvia, the share has risen since 1994, while in Slovenia, it was much the same in 1997 as three years earlier.

The decline of industrial employment has particularly affected traditional industries such as electrical and mechanical engineering, steel, chemicals and mining. Prior to transition, the share of employment in industry was around 40–50% in most countries. By 1997, the share had fallen to between 25% and 33% in Estonia, Latvia, Poland, Hungary and Romania. In other countries, the share remains significantly higher than in the EU at 37% in Bulgaria, 39% in Slovakia, 42% in the Czech Republic and 43% in Slovenia. In Lithuania, however, only some 20½% of total employment was in industry, less than in any EU Member State.

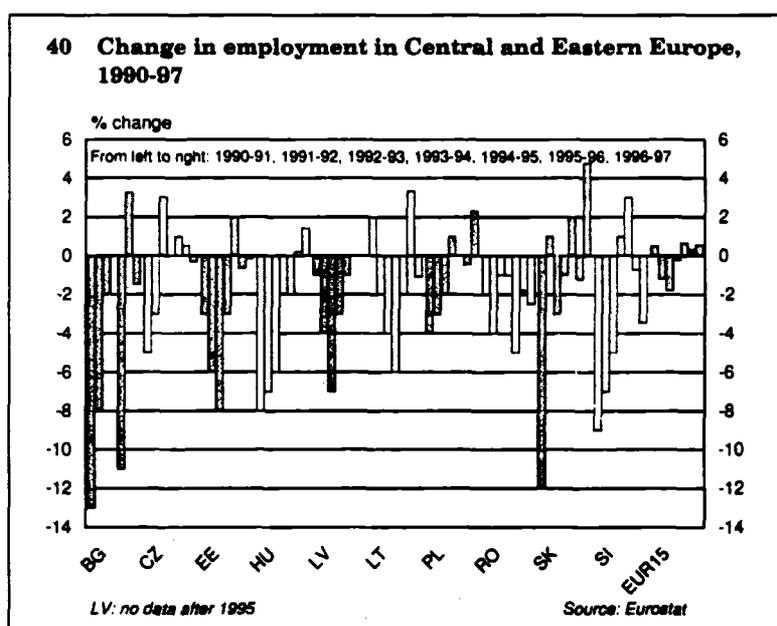
While the growth in service employment has been widespread across the region, the share is still well below the EU average (65½%). The growth of service sector employment is particularly marked within areas such as finance, retailing, and hotels and restaurants. The increase, while common to all CEE countries, seems to

have been more pronounced in countries (such as Hungary and the Czech Republic) where service employment was already high by CEE standards. By 1997, service sector employment accounted for 59% of total employment in Hungary, 58% in Lithuania, 57% in Estonia, 53% in Latvia and the Czech Republic and 52% in Slovakia. In Romania, however, the share of employment in services was just 31%, well below that in any EU Member State (in Greece and Portugal, the countries with the lowest shares, it was 58% and 56%, respectively).

### Regional Aspects

The fall in employment in CEE countries has affected some regions much more than others, largely according to the sectoral pattern of activity. Regions with concentrations of heavy industry have been particularly hard hit. While many rural regions with high employment in agriculture have also suffered a disproportionate loss of jobs, the tendency has been less widespread and in Romania, in particular, rural areas have experienced much less of a decline in employment. At the same time, the growth of employment in services has been concentrated in the large urban areas, especially the capital cities, and this has tended to offset the decline in industry.

In the Czech Republic, employment has declined in all regions but North Bohemia and both Moravian regions have been particularly affected. These regions have, because of their high degree of industrialisation, suffered from the decline of heavy industry.



This is also the case in Northern Hungary, while the decline of employment in South-Transdanubia and the Northern Great Plain is largely due to falling numbers working in agriculture. The more stable development of employment in other Czech regions is due to the growth of services (accounting in Prague for some 75% of the total). Similarly, in Western and Central Transdanubia, as well as in Budapest, the decline of employment has been smaller as service sector employment increased.

In Poland, the fall in employment has been larger in *voivodships* with high shares of employment in industry. Conversely, many *voivodships* with high employment in agriculture have fared better. However, this is not a uniform pattern. In general, Western parts of the country have been more affected by declining employment than Eastern regions, while, in Slovakia, employment has fallen by more in Eastern parts. The only region which is an exception to this in Poland is Warsaw where employment rose between 1990 and 1995. Similarly, employment increased in Bratislava over the same period, while in all other Slovak regions it fell. Both capitals have benefited from a significant rise in service sector employment. In Romania, the reduction of employment has been relatively evenly balanced between regions. All have experienced a fall but it has been particularly marked in Bucharest, largely due to the fact that in other regions agriculture has cushioned the decline.

Accordingly, employment rates also display marked regional variations. In Hungary, the rate is signifi-

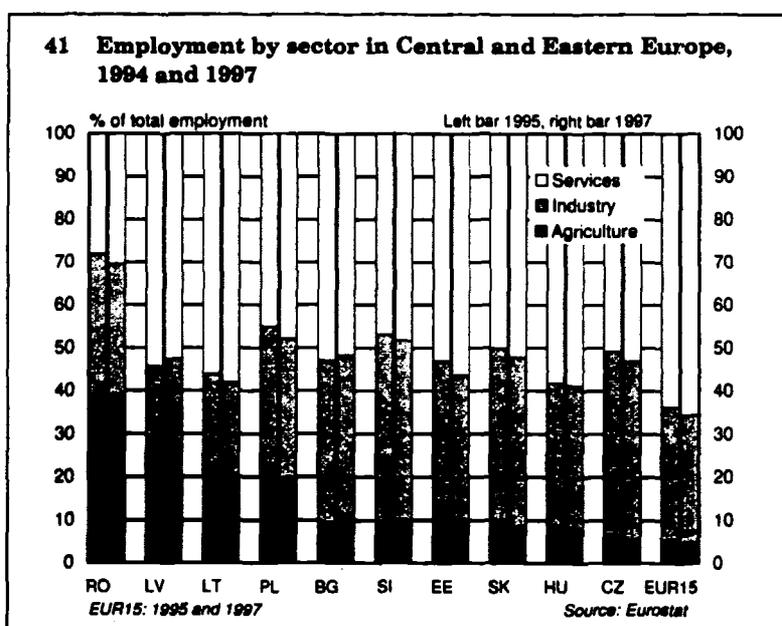
cantly higher in Budapest than in the North. This is also the case in Poland. In Slovakia, the employment rate in Bratislava is artificially high as a result of large-scale commuting, though even adjusting for this, it is significantly above rates in the East of the country, while in the Czech Republic, there is less of a difference between regions. In Romania, there is also only a relatively small variation in rates between regions despite the disproportionate fall in employment in and around Bucharest.

## Unemployment

The large state-run enterprises that characterised the period before transition were heavily subsidised in a number of ways, which had the effect of encouraging high levels of employment and labour hoarding. This masked the relatively unproductive nature of much employment which, under market conditions, would have tended to result in unemployment. Some sources suggest that 'true' unemployment may have been as high as 20 to 30% in the CEE countries in the 1980s.

With the start of transition, unemployment became a reality. In general, unemployment rose sharply during the early years of transition and by early 1994, 7.5 million Central and Eastern Europeans were unemployed according to official estimates.<sup>10</sup>

CEE unemployment generally peaked in 1993 or so but subsequently stabilised and, especially from 1995 on, has tended to fall. This is the case in Latvia, Hungary, Poland, Lithuania, Slovakia and, to some extent, Bulgaria. The Czech Republic was the principal exception to the general rise of unemployment and the rate is still lower than elsewhere. After a rise at the beginning of the decade, the rate stabilised at 3–4% of the labour force. This was the result of more favourable starting conditions, the rapid growth of private firms and an active labour market policy, but also withdrawals from the labour force into inactivity. Moreover, in some labour-intensive industries, restructuring has been slow and some labour hoarding persists. In recent years, however, Czech unemployment has tended to rise and in 1997 was over 5% (Graph 42).



In the Baltic States, extensive labour hoarding largely restrained the rise of unemployment in the early years of transition. However, surveys suggest that real unemployment was already high by 1993 and by 1995, it had risen to 10% or above in all three countries. Similarly, unemployment in Romania was contained in the early years of transition as economic restructuring was postponed and here it has been kept well below 10% throughout the transition.

In 1995, unemployment rates ranged from 4% in the Czech Republic to some 17% in Lithuania and 19% in Latvia. In relation to the EU average (10.7%), unemployment rates were substantially higher in Lithuania, Latvia, Bulgaria (14%), Poland (13%) and Slovakia (13%). By contrast, the Czech Republic, Romania (7%) and Slovenia (7%) had unemployment rates well below the EU average while they were broadly in line with the EU average in Hungary (10%) and Estonia (10%).

From 1995 to 1997, unemployment fell in all the countries except Bulgaria, the Czech Republic and Estonia where it increased. However, even where it has fallen, the rate in most cases remains relatively high and comparable to levels in the EU. In 1997, unemployment stood at 14% in Latvia, Lithuania and Bulgaria, 12% in Slovakia, 10% in Poland and Estonia, 9% in Hungary, 7% in Slovenia and just over 5% in Romania and the Czech Republic.

The emergence and rise in unemployment has undoubtedly given rise to increased poverty and significant social problems. Moreover, with the passage of time, there has been an increase in the duration of unemployment, as noted below, and a growing threat to social cohesion with more of the unemployed exhausting their entitlement to benefit. According to a study, only 28% of unemployed in Bulgaria in 1994 were entitled to benefits and only 22% of those ceasing to draw benefits in Hungary did so because they had found a job.

### Female unemployment

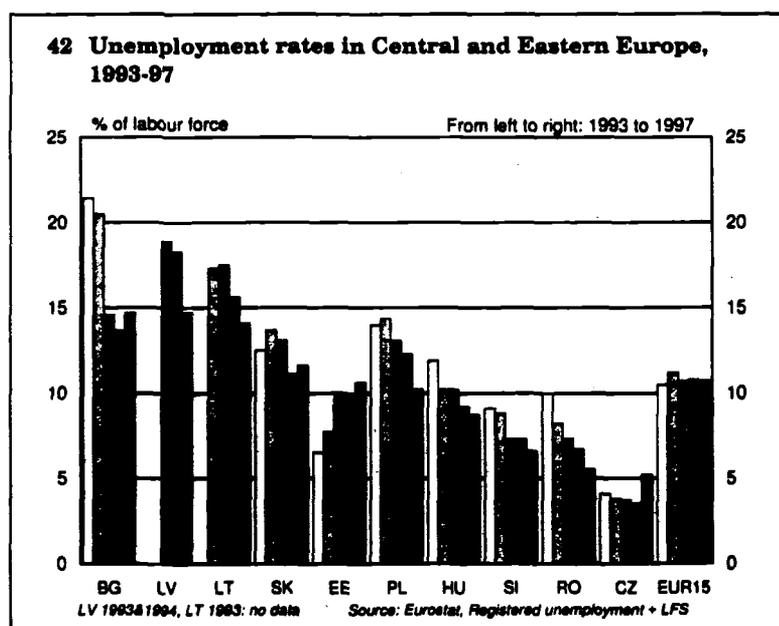
As in the EU, unemployment of women is higher than that of men in most CEE countries, though the difference tends to be less than in the Union. In two

countries, Hungary and Estonia, unemployment of women is less than for men, the difference in 1997 being almost 2 percentage points, while in Bulgaria, Romania, Slovenia and Latvia (there are no figures available for Lithuania), the average rate for women is only slightly above that for men. In Poland, by contrast, the rate of female unemployment was over 3 percentage points higher than for men (similar to the difference which exists in the Union), in the Czech Republic, over 2½ percentage points higher and in Slovakia, over 1½ points higher.

### Youth unemployment

Unemployment among young people increased faster during the initial years of transition than among the rest of the work force, reflecting the relatively low rate of new job creation. By 1995, 38% of the Bulgarian labour force under 25 was unemployed, the highest rate in the region. In Poland, Latvia and Lithuania, rates were somewhat lower at 31–32%. Only the Czech Republic had a single-digit youth unemployment rate at some 8%.

In a number of countries, however, youth unemployment has come down in recent years as employment opportunities in the private sector have expanded. From 1995 to 1997, youth unemployment declined in all CEE countries with the exception of the Czech Republic and Estonia. Nevertheless, youth unemployment has remained clearly higher, in general twice as high, than the overall rate in all CEE countries except the Baltic States. In 1997, it was still higher than else-



where in Bulgaria (36%), followed by Lithuania (26%), Latvia (25%), Poland (23%) and Slovakia (22%). Some studies, however, suggest that economic recovery has benefited the young more than older members of the work force. This would imply that further growth might serve to reduce youth unemployment by more than the overall rate because of the greater capacity of young people to adapt to changing economic conditions.

#### **Long-term unemployment**

The increase in unemployment has also given rise to more long-term unemployment. Job-shedding, specially within industry, particularly affected those with largely redundant skills and with low capacity to adapt to the new demands. By 1995, slightly more than half of the total unemployed had been out of work for a year or more in most CEE countries. Only the Czech Republic (34%), Estonia (37%) and Poland (44%) had significantly lower shares of long-term unemployment. The highest levels were in Bulgaria (65%), Latvia (63%) and Slovakia (61%). In nearly all CEE countries, long-term unemployment was directly proportional to the level of education, though Romania and, to a lesser extent, Poland are exceptions as high levels of rural employment have provided the low-skilled with jobs. In Romania, those most affected were people with vocational and secondary education rather than those with lower levels.<sup>11</sup>

The rise in employment which most CEE countries have experienced since 1993 or 1994 has had some effect on the incidence of long-term unemployment. Between 1995 and 1997, the proportion of the unemployed out of work for a year or more fell in all the countries except Romania, where it was unchanged, and Estonia where it increased significantly. The fall in long-term unemployment was most marked in Bulgaria and Poland. Nonetheless, in most countries it remains higher than the EU rate, at between 50% and 60%. Only in the Czech Republic (29%) and Poland (38%) was the proportion significantly less than in the EU. This suggests that the problem of long-term unemployment may not be resolved simply by economic growth.

#### **Regional Aspects**

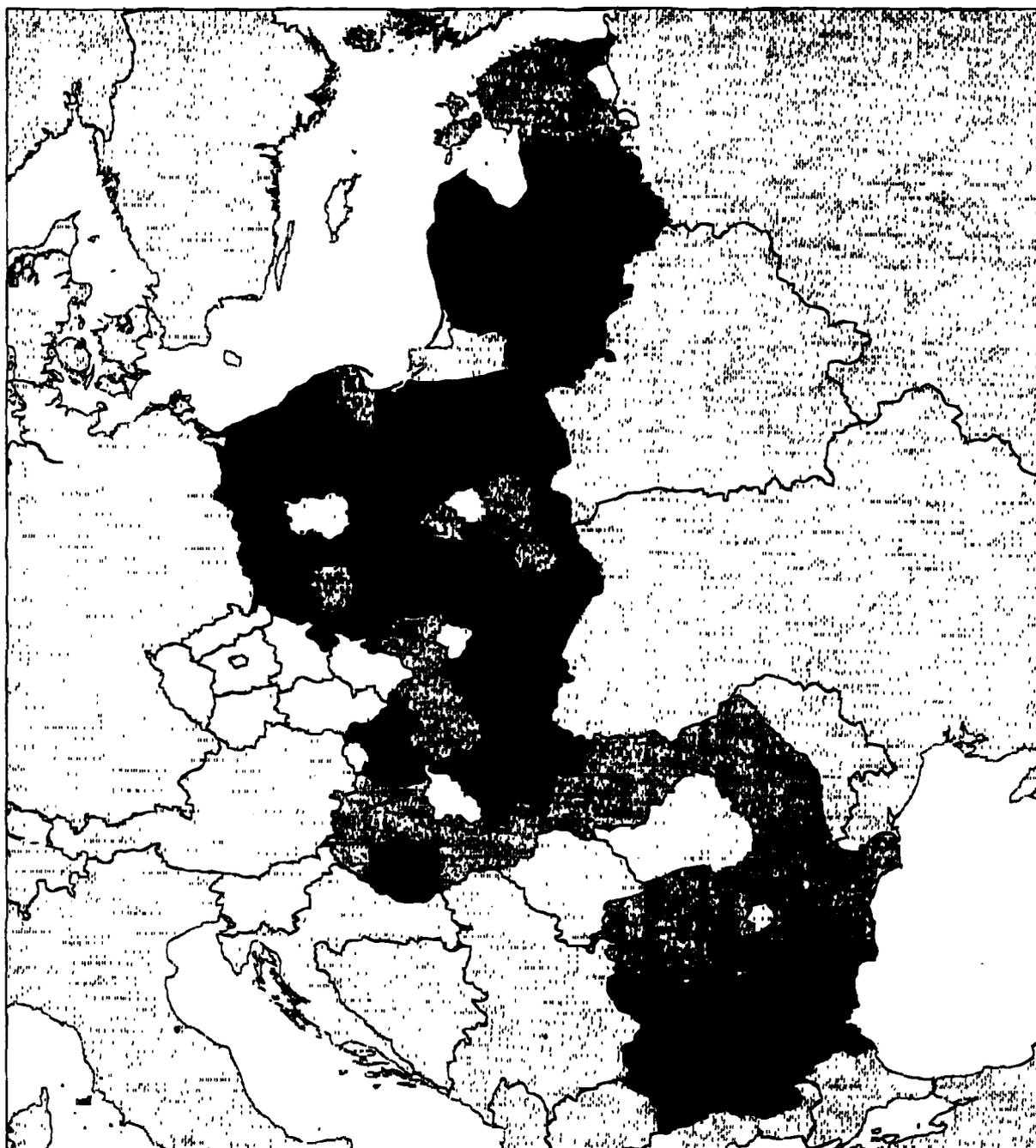
There are significant regional disparities in unemployment. These result from inherited regional imbalances as well as from new regional differences

caused by varying conditions in the market economy. On the whole, capital city regions, large urban centres and Western regions tend to have lower unemployment than the rest of the country. These generally benefit, as noted above, from favourable geographical positions, better infrastructure endowment and a higher growth of the private sector, particularly in services. Conversely, many industrial regions have suffered a large rise in unemployment as they have experienced difficulties in creating new employment opportunities and attracting new private business, as well as foreign investment. In rural areas, developments are more diverse. Where agriculture has been restructured, unemployment has increased. Where this is not the case, agriculture has, as noted above, become an employment reserve absorbing those who would otherwise be unemployed.

In Hungary, regional unemployment is lowest in Central Hungary (comprising Budapest) and highest in Northern Hungary and the Northern Great Plain. In comparison, Czech regions all have relatively low unemployment rates, but with some regional variation — very low rates in Prague and Southern Bohemia but higher rates in Northern Bohemia and Moravia, largely due to the decline of coal mining and heavy industry. In general, the Eastern regions in Hungary seem to have been more affected by rising unemployment than Western parts with the exception of Southern Transdanubia (Map 48).

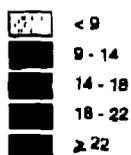
In Poland, regional disparities are wider, with the highest rates in the North and West, where there has been large-scale industrial decline, and the lowest rates in the South and parts of the East, where a high proportion of the work force is still employed in agriculture. In general, urban centres such as Warsaw, Poznan, and Katowice present the lowest unemployment levels. However, in some of them, significant restructuring still lies ahead.

In Romania, unemployment is highest in the North-East and lowest in the West. Bucharest has experienced the largest fall in employment, indicating that it is primarily the reduction in participation and the exodus to rural areas which has kept the rate low. In Slovakia, the lowest rate of unemployment is also in the capital, though here the low rate in Bratislava primarily reflects job growth rather than declining participation. Unemployment is substantially higher in the Eastern region, which has been hit especially hard by the collapse in trade with the former Soviet Union.



**Map 48 Unemployment rates in Central and Eastern Europe, 1995**

% of labour force



BG: national level  
 HU, PL, RO: registered unemployment  
 Others: LFS  
 Regional figures are approximate

Source: Eurostat



## Trade

Under the former (CMEA) trading system, the CEE countries developed highly specialised and mutually complementary structures of production. Trade with the rest of the world was extremely limited, though over the 1970s and 1980s, it was expanded as a deliberate part of policy and largely to service growing foreign debt. Nevertheless, in 1985, under 20% of CEE exports went to present EU Member States. The low figure was partly because of the difficulty of reaching an agreement between the EU and the CEE countries to reduce restrictions on trade. The preference in the EU was for an approach based on bilateral trade agreements with each of the countries concerned rather than with the CMEA as a group for fear of Soviet domination. In 1988, however, an EU-CMEA joint declaration led to a first generation of bilateral agreements between the two sides, giving 'most-favoured nation' status to all countries in the region, except Romania which already had a more far-reaching trade agreement, and, as a result, there was some increase in trade.

Since the transition began, the EU has concluded a new generation of agreements with the candidate CEE countries, the Europe Agreements. These remove EU tariffs on industrial goods and progressively reduce quantitative restrictions (the agreements are asymmetrical, dismantling trade restrictions at the EU end first), though some trade quotas remain on agricultural products. As a result of this and the opening up of the CEE market, trade between the CEE countries and the EU has increased dramatically. Between 1990 and 1996, EU exports to CEE countries in-

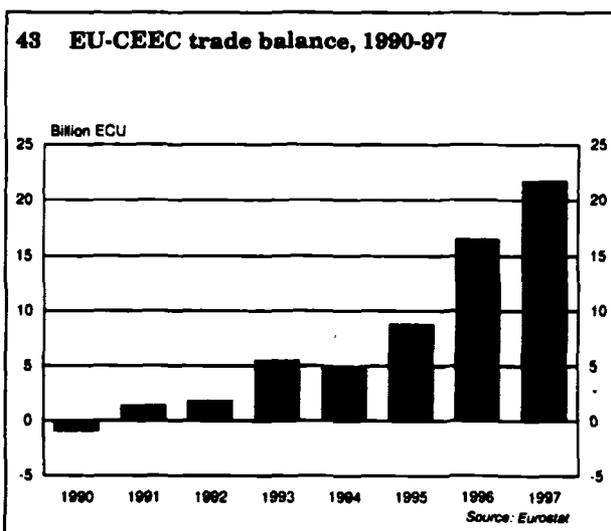
creased by 429% (over 5 times), while imports from them rose by 263%, so giving rise to a substantial trade surplus for EU Member States (Graph 43). By 1996, some 59% of CEE exports went to the Union and around 58% of their imports came from the Union. Both figures were over 60% in the case of Poland, Estonia, Slovenia and Hungary, though only around 35% in the case of Slovakia (for which trade with the Czech Republic is important) and Lithuania (for which trade with former Soviet Union countries remains substantial).

For most countries in the region, therefore, the scale of trade with the Union in relative terms has, in a very short space of time, reached a similar level to that of trade between EU Member States. By contrast, trade between themselves has fallen to relatively low levels (12½% of imports, 20% of exports). In 1996, EU exports to CEE countries amounted to around 10% of total Union exports to third countries, or only around 1% of Union GDP, which may seem small but it is larger than Union exports to Japan and almost as much as those to East Asia. Moreover, between 1990 and 1996, the growth of exports to the region was only slightly smaller than the growth of those to the rapidly expanding East Asian market.

EU exports to the region, however, go predominantly to three countries. In 1996, some 30% went to Poland, 25% to the Czech Republic and 15% to Hungary. Equally, these three countries accounted for a similar proportion of EU imports from CEE countries (Graphs 45 and 46)

During the Cold War, the EU generally ran a small trade deficit with the CEE countries estimated at 0.9 billion ECU in 1990. By 1993, the position had been firmly reversed with a trade surplus in favour of the EU of 5.5 billion ECU. Despite the asymmetrical nature of the trade agreements, the EU has continued to accumulate a substantial trade surplus with CEE countries, which in 1996 had risen to 16.5 billion ECU, well over 25% of the value of exports to the region. By 1997, the EU's trade surplus had further increased to over 20 billion ECU (Graph 43).

In 1996, Latvia and Bulgaria were the only CEE countries with a trade surplus with the EU. In the case of Bulgaria, this was mainly caused by a substantial devaluation (Table 38). The trade deficit of CEE countries amounted in aggregate to 7% of their total GDP but was substantially higher in some standing at 23% of



GDP in Estonia, 15% in Latvia, 11% in Lithuania 12% in Slovakia and 10% in the Czech Republic. While in many CEE countries, these deficits are financed by net capital inflows, all countries in the region had growing debts with the rest of the world, reflecting their relative lack of competitiveness as well as their expanding markets and, for a number of countries, special programmes of repayment with the IMF.

Trade with CEE countries has had a differential effect on EU Member States. In 1990, only Germany had a trade surplus with these countries. In 1996, all EU Member States had trade surpluses, except Greece and Portugal which had very small deficits. Germany is by far the biggest exporter and importer, accounting for around 45% of EU exports to the region and almost 50% of Union imports from it (though the Nordic countries are more important trade partners for the Baltic States). This is a result partly of its geographical proximity, partly of its historical and cultural ties. It also reflects, however, the extensive commercial relations and sub-contracting arrangements which have been developed between Germany and a number of the CEE countries since the transition began. The next largest exporters and importers are Italy (accounting for around 12% of both) and Austria (just under 10% — implying that in relation to GDP, trade with CEE countries is even larger than for Germany).

#### Composition of trade

In the early years of transition, exports of CEE countries were largely resource based and labour intensive, while imports consisted to a much greater extent of more advanced products. The main exports comprised raw materials and highly standardised basic products, while imports were made up more of machinery, transport equipment and high-tech manufactures, which partly fed into the production process but which were largely for final consumers, deprived for decades of the more sophisticated products which people in the EU take for granted.

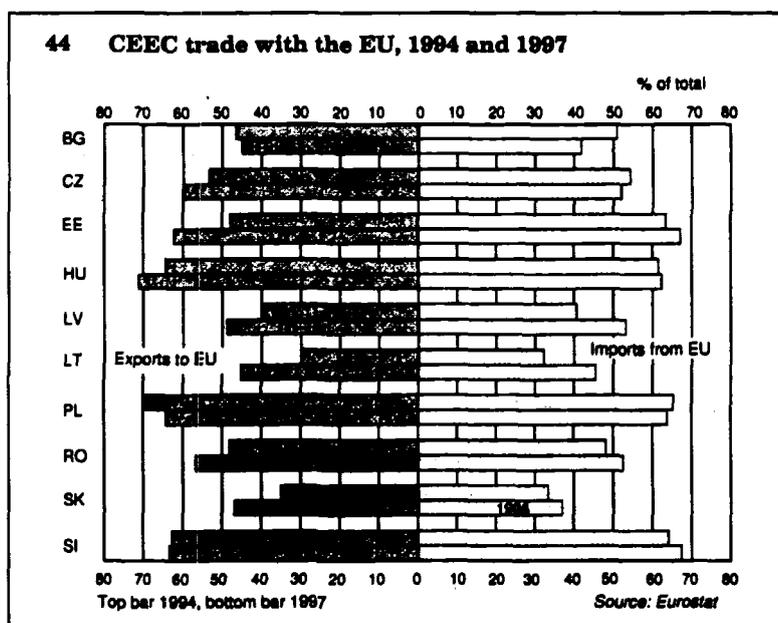
In some countries, however (primarily the Czech Republic, Hungary and Slovenia but also Poland and Slovakia), the structure of exports has progressively shifted towards more advanced manufactures, stimulated in part by in-

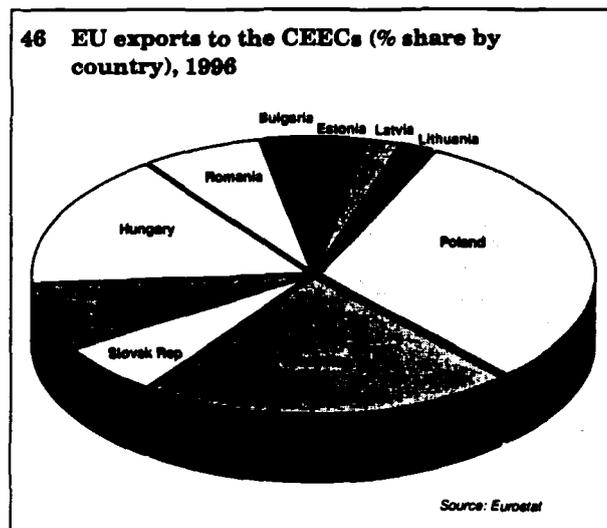
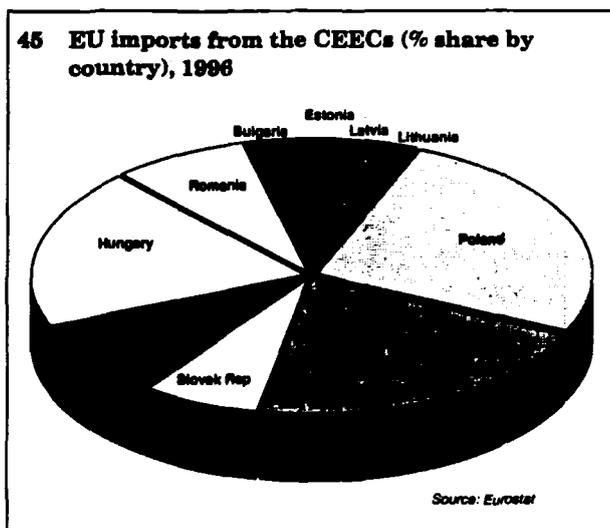
ward investment, especially from EU Member States. In 1996, well over 70% of exports of goods from CEE countries consisted of manufactures and almost 80% of those to the EU. Moreover, whereas in 1990, machinery, transport equipment and electrical and electronic goods accounted for only 15% of CEE exports to the EU, by 1996, the figure had increased to 30%.

Nevertheless, there are significant differences in the composition of exports between countries in the region. In Bulgaria and Romania, exports still consist to a major extent of intermediate products and chemicals and in Lithuania and Latvia, of raw materials and fuels, which is also true in Estonia, though here manufactures represent a growing share of total exports.

Before transition, imports from the West had been dominated by capital and intermediate goods. With transition, imports have shifted massively towards consumer goods. Moreover, contrary perhaps to expectations, most CEE countries are net importers of food and agricultural products. Increasingly, a large proportion of both exports and imports of CEE countries consists of manufactures, particularly, as regards their trade with the EU. This is a typical feature of trade between industrialised countries, which tend to export and import the same kinds of product, reflecting consumer demand for choice as well as the growth of trade between subsidiaries of the same firm or between firms and their subcontractors.

The present pattern of trade, however, may not be a good guide to the future division of labour between





EU Member States and CEE countries. There is undoubtedly an element of pent-up demand behind the increase in imports of consumer goods resulting from the restrictions imposed before the reforms. The composition of trade may well continue to shift towards engineering and higher technology sectors as new investment takes place, reflecting the comparative advantage which stems from the existence of a highly qualified labour force in all CEE countries.

## FDI

Despite the reduction of purchasing power in the early transition years, the reforms in CEE countries have opened up a new market of over 100 million inhabitants for EU producers with considerable growth potential. As generally happens, foreign investment in CEE countries has increased as trade has grown, reflecting their attraction for companies in the EU as a result of their proximity, availability of skilled labour and access to EU markets through the Europe Agreements. The inflow of investment has served to transfer technology, introduce new management techniques and add to jobs.

The dismantling of barriers to foreign ownership led to a significant increase in inward investment, especially from 1991 onwards as legal and other reforms gathered pace. The cumulative stock of foreign investment over the period 1991 to 1996 amounted to some \$30 billion, the flows increasing from \$2.1 billion in 1991 to \$4.1 billion in 1993 and, after remaining unchanged in 1994, to \$9.5 billion in 1995, stimulated by economic recovery and the more firmly established transition pro-

cess in most CEE countries. In 1996, FDI to the region fell somewhat to \$7.1 billion. Nevertheless, the total stock of foreign capital in the region remains modest and could increase markedly in the years to come.

The countries vary considerably in their success in attracting FDI, which seems to be related mainly to the perceived progress of transition. Those with more advanced reform programmes — particularly as regards the establishment of a suitable legal framework and property rights, market discipline and macroeconomic stability — have received larger inflows. Equally, however, geographical location, the image projected by government and its perceived commitment to economic reform and, perhaps, the prospects for early EU membership seem also to have been factors.

FDI, in practice, has been concentrated on a small number of countries, specifically, Hungary, the Czech Republic and Poland, which together account for 85–87% of total inward FDI over the period 1991 to 1996. Hungary is by far the biggest recipient, cumulative inflows into the country over the period amounting to \$12.7 billion or some 42% of total FDI to the CEE countries, a position partly explained by the fact that it was first country to begin economic deregulation and introduce privatisation (Graph 47). Many Western companies seeking to establish in the CEE market, therefore, chose Hungary as their regional base.

The Czech Republic is the second largest recipient, cumulative inflows amounting to \$7 billion over the period. In Poland, the third largest, they amounted to \$5.4 billion, with significant increases in the later part

of the period so that in 1996, Poland overtook Hungary as the main destination of FDI in the region. Inward investment has been far lower in all the other countries in region. Romania (\$1.1 billion) was the only one where the stock of FDI in 1996 exceeded \$1 billion, though it is worth noting that in Estonia, it totalled \$739 million, similar to that in Slovakia and more than in Bulgaria and, in relation to its GDP, on a par with the level in the Czech Republic.

Indeed, in relation to population, Estonia is the third biggest recipient of FDI in the region, with cumulative inflows at \$501 per head, after the Czech Republic (\$680) and Hungary (\$1250). In these terms, Slovenia is the fourth largest recipient (\$375 per head), followed by Latvia (\$257). Despite the rise in 1995 and 1996, cumulative FDI in Poland was only \$140 per head and it was much the same in Slovakia. This, however, was still much higher than in Bulgaria, Lithuania and Romania where it was under \$100 per head (only \$50 in Romania).

### Regional aspects

The regional distribution of FDI in the CEE countries is difficult to assess because of a lack of reliable data. It is evident, however, that the major part of inflows went to capital cities, large urban centres and Western regions bordering the EU, with, in most cases, better transport links with EU markets and a more skilled labour force. In Hungary, for example, Budapest and Western areas are estimated to account for 80–90% of total FDI, while in Bulgaria, 70% of inflows went to Sofia. Similarly, in the Czech Republic and Slovakia, most of FDI went to Prague and Bratislava, though in

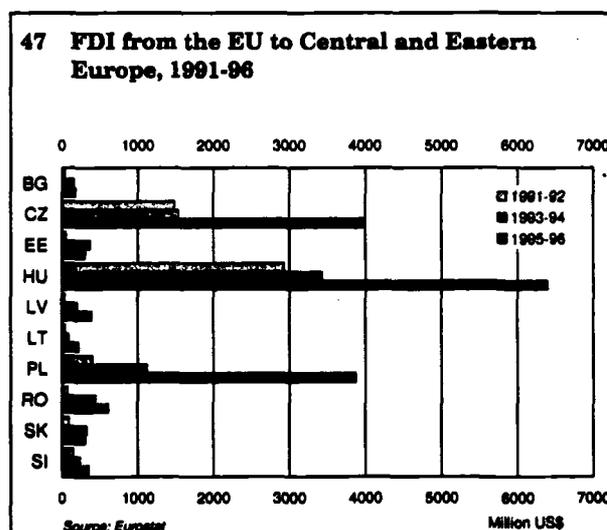
Poland, where there are more large cities, inflows were more evenly spread. (It should be noted, however, that these figures may overstate the extent of regional imbalance, insofar as FDI inflows are commonly registered in the place where investing company has its main office whereas the actual investment may well take place elsewhere.)

### The EU as a source of FDI

EU Member States are by far the largest source of FDI to CEE countries. In 1995, EU companies invested 5.6 billion ECU in the region (\$7.1 billion), their share of the total stock of FDI ranging from 45% in Poland to some 73–75% in Hungary and Slovenia. In line with FDI as a whole, investment is concentrated in Hungary, Poland and the Czech Republic, these countries accounting for 91% of total EU investment in the region in 1995. Among EU countries, Germany, Austria, France and Italy are the main sources of investment, though there are strong links between certain Member States and individual CEE countries, such as between the Nordic countries and the Baltic States, especially Estonia and Latvia.

Over the period, 1992 to 1995, investment in the CEE countries amounted to some 13% of total EU FDI to third countries, which represents a significant share of that going outside the US (which accounted for 40% of the total) and was more than to East Asia, including China (10%). The other main investors in CEE countries are the US, Japan and East Asia, US companies being important in Poland (accounting for 32% total inflows over the period) and South Korean firms in Romania.

	1991-92	1993-94	1995-96	Cumulative inflow 1991-96	Cumulative FDI/cap (\$) 1991-96
BG	42	160	182	384	46
CZ	1494	1541	3984	7019	680
EE	58	372	309	739	501
HU	2930	3436	6396	12762	1250
LV	43	206	395	644	257
LT	52	92	224	368	99
PL	401	1122	3875	5398	140
RO	77	441	614	1132	50
SK	100	334	311	745	139
SI	154	243	350	747	375
CEEC	3198	7947	16640	29938	284



The potential effect of EU membership on FDI in the countries is difficult to predict. The accession of Portugal and Spain coincided with a large rise in net inflows of investment from other Member States and they remain among the largest recipients in terms of their GDP. Greece, on the other hand, has been much less successful in attracting inflows, suggesting that membership alone is not a sufficient condition and, for CEE countries, progress in implementing economic reforms is likely to be equally if not more important.

### 4.4 Competitiveness

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The lack of competitiveness of CEE economies reflects the long period before transition when they were protected from market forces. State planning led to a distorted allocation of resources and insufficient investment in sectors with the highest return in the long-term and key aspects of competitiveness were often neglected. However, because of the lack of reliable data on the different aspects which determine overall trade performance, any analysis of competitiveness can only be partial. The focus here is on research and technological development, physical infrastructure, the environment and human resources. Nevertheless, even in these areas, it is questionable whether data are comparable, so that the results are purely indicative.

#### Research and Technological Development

Under the previous regime, research and technological development (RTD) was accorded high political priority, particularly in scientific areas and certain special industrial sectors. Consumer goods sectors and social sciences, however, were generally neglected. Accordingly, basic research in science tends to be of high quality in CEE countries as does applied research in some industries, and RTD was also well developed in military technology and other areas relating to national security (nuclear energy, for example), despite the restrictions imposed on technological transfers from the West.

During transition, RTD in CEE countries has diminished significantly because of lower State funding and the exodus of researchers. In 1990, RTD expenditure in the Czech Republic, Hungary, Poland,

Slovakia and Slovenia taken together amounted to 1.8% of their combined GDP, slightly below the level in the EU (2.0%). By 1995, expenditure had fallen to 0.9% of GDP, less than half the EU level (1.9%), with public spending accounting for around 50% of the total.

Although the CEE countries often remain strong in basic research, their capacity for applied research is generally more limited, not least because of cuts in public funding, but also because of the low level of private sector investment in RTD, except in a few countries such as the Czech Republic. There also tends to be a lack of interaction between business enterprises and the research base. Moreover, in the early years of transition, there was a large-scale 'brain drain' of scientists and technicians to the West (mainly to the US), though this has since declined. The main challenge facing CEE countries in this area now is an 'internal' brain drain, of scientists leaving RTD to work in private sector jobs where they do not apply their skills, and, because of the low salaries on offer, few new science and technology graduates choose to work in RTD.<sup>12</sup>

#### Physical Infrastructure

The density of road and rail networks in CEE countries is comparable to, and sometimes even above, the level in the EU. However, these networks were largely constructed in the immediate post-war years and were inadequately maintained in more recent times when new investment was limited. Accordingly, they are of poor quality. Moreover, the design of the transport system reflects the pattern of trade under the previous regime, the prime purpose being to convey goods between CEE countries and the former Soviet Union. The inadequacy of the system has become increasingly evident during the transition period.

#### Road networks

The density of the road network in most of the region is similar to that in the EU, with Hungary and Poland having the highest levels (1.7 km and 1.2 km per square km, respectively, in 1995), much the same as in Germany, France or Austria and much higher than in the Cohesion countries, Ireland apart. In most other CEE countries, the density was comparable to that in the Cohesion countries (0.7–0.9 km per square km), with

only Bulgaria, Estonia and the Slovakia having much lower levels (around 0.3 km per square km).

However, the quality of the network is clearly inferior to that in the EU. A great many roads are single lane and there are only a few motorways and dual-carriage ways. Motorways make up some 16% of the network in the EU but only 3% in Central and Eastern Europe. Only in Slovenia, where 15% of roads are motorways, is the figure close to that in the EU, mainly due to its small size and the transit routes which go through it. In Hungary, the Czech Republic and Slovakia, where motorways are more important than elsewhere in the region, motorways comprise only 5–6% of the network. The position is similar for dual carriage ways, which constitute 10% of the road network in the EU but only 3% in CEE countries, the main exception being Latvia, where the figure is 13%.

Problems of the road network also have a regional dimension. The best roads are typically in and around the large cities, while the more remote rural and, in some cases, industrial areas are badly connected. Moreover, urban centres are seldom linked to each other but rather to the neighbouring hinterland and there is no effective international road network.<sup>13</sup> This is a problem which is compounded by inadequacies at border crossings, which impedes trade between countries in the region as well as with the EU, and which urgently needs to be addressed.

### Rail transport

The railway network in CEE countries (5.6 km per square km) is slightly denser than in the EU (5.2 km). Density is highest in the Czech Republic (10.7 km per square km), followed by Hungary (8.3 km) and Slovakia (6.9 km) and is lowest in Estonia (2.2 km) and Latvia (3.2 km).

Like roads, however, the network is of much lower quality than in the EU. Lines are in most cases single track, which causes delays and reduces efficiency. Only 26% of the CEE rail network is double track as against 44% in the EU, though under 20% in Greece and Portugal (as well as Finland and Sweden). In Poland, the figure is the same as in the Union and in Lithuania, 37%, while in Bulgaria and Romania, by contrast, only 2 to 4% of the network is double track.

Moreover, only 23% of the network is electrified as compared with 40% in the EU, though again the figure

is well above that in Greece and Portugal. Electrification, like double track lines, is most prevalent in Poland (38%) and Lithuania (29%) as well as in Slovakia (29%), while in Bulgaria, Romania and Latvia, less than 10% of the network is electrified. In addition, safety standards are low with tracks often worn out, rolling stock is outdated and the lack of servicing causes frequent breakdowns. As with roads, there are inadequate rail links between the main urban centres in the region as well as with the EU and border crossings can be lengthy. New investment is, therefore, required to improve the standard of the system.

### Environment

All the CEE countries have suffered severe environmental degradation. Their development under the former regime took no account of the effect on the environment and there was no system of regulation. Industries consumed excessive amounts of energy, generated largely by cheap but dirty sources such as brown coal, and production processes were characterised by obsolete technology with little or no effort to reduce the pollution caused. Mining and quarrying were intensive and mostly inefficient and have left many sites derelict and unusable.

With transition, political awareness of environmental problems has increased significantly and measures have been taken in all countries to combat environmental problems. Legislation against pollution has been introduced progressively, partly driven by the need to conform to the EU *acquis*, modern technology has altered methods of production and traditional heavy industry has declined, all serving to alleviate environmental problems in the region.

Nevertheless, considerable problems remain. CEE countries need to go further in establishing regulations and changing production techniques. Because of the cost involved, large sections of agriculture and industry do not apply effective environmental protection measures. Although legislation is being introduced, the requirements it imposes are less than in the EU and there are problems with implementation. Moreover, as well as reducing present pollution, there is the legacy of the past to tackle, which means cleaning up sites made unusable by the dumping of waste or the extraction of minerals. The costs of doing so, however, are considerable and the CEE countries are unlikely to be able to bear them alone.

### **Air pollution**

Air pollution is a major threat to health. In CEE countries, the main cause is the heavy reliance on coal as a source of energy. Coal accounts for 75% of total energy produced in Poland and 24% in Hungary, as against an average of 19% in OECD countries<sup>14</sup> and the problem is compounded by the use of low quality coal producing a high level of emissions.

Although motor vehicles are not yet a serious environmental problem, except in some inner city areas, such as in Budapest, this is mainly because of low car ownership compared to the EU. However, car ownership has risen strongly in the 1990s and mobile sources of air pollution are likely to increase as real income rises.

During the transition, air pollution has diminished. In 1996, emissions of carbon dioxide (CO<sub>2</sub> — the main source of the greenhouse gases responsible for global warming) were some 20% lower than in 1990 and those of sulphur dioxide (SO<sub>2</sub> — a major cause of acid rain) over 30% lower. However, in most CEE countries, oil and brown coal remain the main energy sources and air pollution, despite declining, is still high.

Carbon dioxide emissions are over 10% higher than in the EU (9.2 tonnes per head of population per year as against 8.2) and in Estonia (19 tonnes per head) and the Czech Republic (15 tonnes per head) much higher still. On the other hand, in Hungary, Slovenia and Romania (all around 6–7 tonnes per head), emissions are below EU levels.

Emissions of sulphur dioxide are generally far higher than in the EU, notably in the Czech Republic (125 kg per head), Estonia (96 kg) and Hungary (73 kg). (For comparison, the corresponding figure in Austria is 9 kg.) Emissions of nitrogen oxide (NO<sub>2</sub> — another cause of plant damage as well as of smog), however, are similar to, and in some cases below, EU levels. In Poland (29 kg per head), the level is much the same as in Austria and less than in Italy, while in the Czech Republic (36 kg), it is similar to that in the Netherlands.

Annual emission levels, on the other hand, conceal substantial variations over the year. In Katowice, for example, levels of black smoke in the Winter can be six times higher than in the EU, and regions where

heavy industry and coal mining co-exist, such as Northern Bohemia, are also particularly affected. Despite the extent of air pollution, governments in CEE countries have tended to give more emphasis to tackling other environmental problems and its further reduction will probably depend on shifting to less polluting energy sources.

### **Waste disposal**

Environmental problems in the region also stem from large-scale, and often unsafe, disposal of waste. The extent of the problem, however, is difficult to assess, once again because of the lack of data. While domestic waste has clearly increased since transition (though remaining below EU levels) and will continue to rise with rising real income levels, especially in large cities like Prague, Budapest, Warsaw and Bratislava, the change in industrial waste is unknown, partly because of the probable dumping of some of the hazardous waste produced in municipal landfill sites<sup>15</sup>. The waste that has been disposed of at industrial sites has led, in many cases, to degradation of groundwater, and a particular problem is the dumping of ash from thermal power stations and military equipment which sometimes has high levels of radioactivity.

The environmental damage caused by waste is increased by the lack of appropriate management programmes. In many countries, nearly 80% of waste is disposed of in landfill sites, much higher than in the EU, where the highest figure is 60%. Hazardous and municipal waste are often disposed of at the same site with no separation and with only limited protection against seepage into groundwater. Landfill sites, moreover, are in short supply and disposal costs are rising, so increasing the amount of illegal dumping. As a result, groundwater and soil pollution has risen and deposits of other toxic wastes, such as mercury, and CO<sub>2</sub> from waste deposits, have increased. The need is, therefore, for improved management of waste disposal and more recycling.

### **Water pollution**

Water supplies in the region are also affected by pollution, notably rivers close to urban or industrial areas which are often contaminated by waste water from industry and households as well as by agriculture. Again, the extent of the problem is difficult to assess, though estimates suggest that there is significantly

higher water abstraction in CEE countries in relation to availability than in the EU, reflecting more intensive use of water and resulting in a shortage of clean water in some regions. In addition, a smaller proportion of the population is connected to public waste water treatment facilities than in the EU and, while water supply and sewage collection is generally satisfactory, such facilities need to be extended.<sup>16</sup>

Moreover, there is a clear difference between urban and rural areas. In rural areas, a significantly smaller proportion of the population is connected to the public water supply and wastewater disposal systems.<sup>17</sup> These areas are also heavily affected by nitrate pollution, caused partly by the fertilisers and pesticides used in agriculture. In Hungary, estimates suggest that agriculture is the second biggest cause of water pollution, though overall, agriculture is a less important source than in the EU.<sup>18</sup>

## Human resources

The labour force in CEE countries is generally highly qualified, but mainly in areas which reflect the priorities of the education system under the former regime, such as in science and technology rather than in economics, law or management, all areas which need to be strengthened in the new market environment.

Overall participation in education and training among 15 to 24 year olds is similar to that in the Union, with higher rates among both men and women than in the EU in Hungary and Poland, similar rates in the Czech Republic and Slovakia and lower ones in Romania and Bulgaria (though the data available relate to 1993 and do not cover the Baltic States or Slovenia).<sup>19</sup> The change in participation rates, however, has differed between the CEE countries. While participation in education in the early transition years rose significantly in Hungary, it fell in Bulgaria and, to a lesser extent, in the Czech Republic, while in Romania, there was a marked increase among women.

Primary education is generally of high standard, which is reflected in low rates of illiteracy, though compared to the EU, the total number of hours of teaching tends to be smaller. At secondary levels, a higher proportion of students than in the EU, especially of men, undertake specialised or vocational training courses (except in Bulgaria). There are cur-

rently moves to prolong secondary education in a number of the countries.

Universities are generally of high standard, particularly in technical areas. Nevertheless, university attendance is lower than in the EU. Whereas in the Union, university students accounted for 14% of all those at school or college in 1995, the proportion was smaller throughout the region, with only Bulgaria (13%) having a similar level. In Poland, Hungary, Romania, the Czech Republic and Slovakia, the figure was only 6 to 8%. While almost 25% of 20 year olds in the EU are enrolled in universities, only around 10% are in Poland, the Czech Republic and Romania. Participation, however, has increased during the transition, partly because of a lack of job opportunities, though also because of the new demands of the labour market.

In most countries, there is a growing demand among students to study social sciences, especially economics and law, but teaching in these areas is less developed. There is a need for investment in better facilities, improved teaching material and the retraining of academic staff.

Although vocational training systems are sometimes well developed, there is a need to improve the quality of general secondary vocational education. In particular, vocational courses tend to be narrowly specialised and do not provide students with the skills necessary in a market economy. In some countries, there is also a need to improve general standards and to increase flexibility, so that students in vocational training are able to go on to higher education.

Education systems in CEE countries, however, vary markedly between regions. There are significantly fewer primary and secondary schools, and fewer facilities, in rural than in urban areas, while universities are predominantly located in the capital cities and regional centres. Moreover, with transition, there has been an increasing concentration of students in the main university centres, often located in the capital cities (except in Poland).

The above analysis has indicated major shortcomings in key aspects of competitiveness in CEE countries, particularly in transport and the environment. Substantial investment in these areas is necessary to improve their prospects for long-term growth and to facilitate their full integration into the EU economy.

## 4.5 Administrative structure

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### CEEC regional policies

Before the transition, imbalances between regions were addressed through the allocation of state-controlled investment. This sometimes meant that new industries were located in regions which were not necessarily the best so far as their long-term development was concerned.

With transition, the role of the state in the economy has been significantly reduced. In the face of high inflation and debt problems in the initial years, newly-elected governments granted priority to macroeconomic stability, and tighter fiscal and monetary policies reduced the scope for regional policy. Available financial resources were concentrated in growth centres and expanding sectors. Moreover, the view was that market forces would help to achieve an acceptable balance of economic activity between regions. Consequently, the re-organisation of administrations in the late 1980s (Poland and Hungary), the early 1990s (the Baltic States and Slovenia) and 1993 (the Czech Republic and Slovakia) gave only limited consideration to regional policy.

Most CEE countries, however, have increasingly recognised the importance of regional policy. As economic stability has been achieved, development policies, mainly at national but also at regional level, have been accorded higher priority and the need to address growing regional disparities has been acknowledged. There has also been some decentralisation of government and a strengthening of the role of regional bodies, which has encouraged governments in some degree to add a regional dimension to their national development policies. In addition, the prospect of EU membership and of eligibility for assistance from the Structural Funds is a strong incentive for the countries to develop the institutional capacity needed in this regard.

Accordingly, regional development measures have begun to be implemented, though they are generally confined to one-off projects targeted on specific regions or municipalities, and in most countries there is no comprehensive regional development strategy. Assistance to regions is provided through sectoral policies, with little coordination and without clear development objectives. Elements of a more compre-

hensive regional policy, however, have been gradually introduced in some countries and there are plans in most to establish a specific regional development policy, but this has proved to be a lengthy process. At present, only Hungary, Romania and Latvia have a specific legal basis for regional policy. In Slovenia and Bulgaria, a draft law is being discussed in Parliament, but elsewhere, legislation is still at a conceptual stage.

The situation in each country is set out in more detail below.

In *Bulgaria*, a regional policy is being established in line with its constitution stipulating the need to ensure balanced development between regions. At present, regional measures are formulated as part of national development policy and implemented on a sectoral basis. Regions with structural problems are targeted through special programmes mainly aimed at improving infrastructure and the environment. Municipalities with high unemployment can also be eligible for assistance. A draft Bill on Regional Development, which will form the legal basis for policy, setting out the guidelines for a comprehensive regional policy targeting backward, industrial and rural areas, is in preparation.

In the *Czech Republic*, the Government has, in the past, given short-term assistance to regions with high unemployment. Recently, it has adopted a more active approach to regional development. Following political debate, the *Principles of Regional Economic Policy* was introduced defining the aims and procedures concerning policy in this area. An act of parliament is being prepared on these lines and will form the legal basis for regional policy. In addition, a Ministry of Regional Development has recently been established and is preparing the policy measures and instruments to be used. After accession, the Ministry will be responsible for coordinating structural support from the EU.

In *Estonia*, regional development policy consists of measures formulated as part of national development policy. In accordance with the Government's *Regional Policy Guidelines*, regional development initiatives are implemented on a sectoral basis and the Government considers that all regions outside Tallinn should be entitled to support. A *Strategy for Regional Policy* is currently under preparation which will deter-

mine the main guidelines and priorities and which will be the basis for a national development programme.

*Hungary* was the first CEE country to have a specific regional policy. This is based on the *Act on Regional Development and Physical Planning*, which determines the guiding principles of policy, such as programming and the regional allocation of resources. Following this, the *National Concept on Regional Development* has been adopted setting out the aims and priorities of policy, and the authorities are preparing a National Development Programme. Support is mainly targeted on less developed areas, industrial and rural regions and those with high long-term unemployment.

In *Latvia*, the government has recently adopted a *Concept for Regional Policy* which sets out the aims and priorities. The *Law on Development Planning* and the *Law on Assisted Areas* form the legal basis, in the first case, for spatial planning and regional policy and, in the second, for state support to less-developed regions. While regional development measures have so far mainly been designed on a sectoral basis, more comprehensive regional development programmes are under preparation targeting backward areas. The financial means of support will also be strengthened by the creation of a regional development fund.

*Lithuania* has no specific regional policy but *Regional Policy Guidelines* were introduced in July 1998, setting out the main principles of policy and forming the basis for prospective legislation. Regional development initiatives are implemented at a sectoral level and the increasing number of development programmes being introduced (such as the draft programme for Eastern Lithuania and coastal regions) are mainly sectoral in nature.

In *Poland*, the Government has accepted the recommendations of the *Task Force for Structural Policy*, including the proposal to establish a regional policy, but as yet no specific policy exists. Regional assistance is provided on the basis of the *Principles of State Regional Policy*, adopted in 1995, which sets out the guidelines for regional development initiatives, which are primarily sectoral in nature. Regions targeted for assistance include old industrial areas and urban and rural areas threatened by the decline of agriculture or particular industries. The drafting of a strategy for regional development setting out the

aims and priorities has been initiated and this will form the basis of integrated programmes.

In *Romania*, regional policy up until 1998 was implemented within a spatial planning framework targeting public investment on backward areas. A *Law on Regional Development* was then introduced, based on the *Green Book on Regional Development Policy and Analysis*, which was produced with EU support. This is aimed at establishing a coherent legal and institutional framework for regional programmes. It also envisages the creation of 8 macro-regions and of a *National Agency for Regional Development* which will be responsible for managing assistance from EU Structural Funds after accession.

In *Slovakia*, regional development initiatives have been implemented through sectoral policies on the basis of the *Principles for Economic Policy*. However, the Government has recently approved the *Concept on State Regional Policy*, setting out the general principles of policy and the format of regional programmes and, following this, plans to introduce a *Regional Development Act*. Regional assistance is mainly targeted at regions with high unemployment and takes the form of state subsidies and credit facilities, though a regional development fund is planned.

In *Slovenia*, regional policy is primarily aimed at arresting population decline in mountainous areas. Support for rural restructuring, the promotion of SMEs, investment in infrastructure and integrated development programmes comes from a *Regional Development Fund*, financed partly by the receipts from privatisation. A *Law on Regional Development Promotion* is being finalised, under which assistance will be targeted on less developed areas, areas in industrial decline and border regions. A *Strategy for Regional Development Promotion* is being prepared in parallel which will set out the guidelines for national development programmes and the coordination of sectoral policies.

### **Institutional structure of regional policy**

In most CEE countries, regional policy is the responsibility of a Ministry with horizontal functions and limited operational capacity. These ministries are primarily concerned with the development of policy, though in some cases, they have a coordinating role. Their main function is to prepare draft legislation and re-

forms of existing policy. Although they are responsible for designing regional development initiatives in some countries, responsibility for implementation resides mainly with the relevant sectoral Ministry or with government representatives in the regions concerned. In some countries, the Ministry or agency which will be responsible for managing support from the EU Structural Funds after accession has already been nominated, specifically in Romania (National Agency for Regional Development), the Czech Republic (Ministry of Regional Development) and Latvia (Ministry of Finance).

Inter-Ministerial councils (the National Council for Regional Policy in Hungary and the National Regional Policy Council in Estonia, for example) have been established in most countries to coordinate sectoral policy, usually comprising representatives from the relevant Ministries. In some countries, these also have a policy role in putting forward proposals for regional support schemes. However, sectoral policies tend to be only very loosely coordinated and regional development measures generally lack common objectives.

The CEE countries retain a centralised administrative structure. Regional authorities are an integral part of the state administration. Local self-government, however, which was introduced with the reforms is already well established. The typical situation, therefore, is one of a two-tier structure of government consisting of the centre and self-administered municipalities. Regional development initiatives, introduced by sectoral Ministries, are formulated at the centre with municipalities being responsible in the main for implementation. Hungary, Latvia and Romania are exceptions since regional bodies can formulate development plans.

In many countries, a process of decentralisation has begun with the aim of strengthening the regional level of administration by establishing self-governing regional bodies. This is the case in the Czech Republic, Hungary, Romania and Bulgaria, in particular, while in Poland, legislation on a new territorial structure has recently been adopted, under which 16 macro-regions will be created in place of the present 49 *voivodships*, which will be responsible, among other things, for social and economic development in their area. Since delegation of powers to a regional tier of administration, however, is always a politically-

sensitive issue, decentralisation in CEE countries may be a lengthy process.

## 4.6 Conclusions

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The concern above has been to analyse the demographic and economic situation in CEE countries and regions, the changes which have occurred since the transition began and to assess the development of policies for regional cohesion, which will be a central issue at accession. Overall, the findings confirm the profound economic and social transformation which has taken place over this period. While there have been adverse effects on standards of living and employment as well as some net outward migration, much of these might well have occurred anyway given the pressures which were emerging under the former regimes.

There are now clear signs that the position has stabilised and that many of the elements have been put in place for sustained growth in the future. The evidence is that, in general, the countries that have done most to implement economic reforms have been more successful in achieving macroeconomic stability and securing recovery, whereas in those where reforms have been delayed, often in an attempt to mitigate the social costs, recovery has been slower.

A major feature of the adjustment process has been a significant fall in output, the scale of which has varied across the region, the largest falls occurring in the Baltic States, Bulgaria and Romania with more modest reductions in Poland, the Czech Republic and Slovenia. As a result, GDP per head has declined since the start of transition, the fall being concentrated in the early years, and since 1993 or 1994, recovery has begun in most countries with some catching up in relation to the EU. This is most clearly the case in Estonia, Poland, Slovakia and Slovenia. Accordingly, it is no longer certain that all of the regions will be eligible for Objective 1 status when the time comes for them to join the EU.

The fall in production has had adverse consequences on the labour market. Employment plummeted in most countries in the early 1990s and the composition has shifted towards services. Unemployment has become a reality, though the rate varies significantly between countries, from over 14%

in 1997 in Bulgaria, Latvia and Lithuania to just over 5% in the Czech Republic and Romania. The decline in job opportunities has particularly affected the young and the older members of the work force. On the whole, large urban centres, especially capital cities, as well as Western regions bordering the EU, which profit from better location and infrastructure, have lower rates of unemployment.

Trade and direct investment developments confirm that there has been increasing economic integration between the EU and CEE countries. The EU is now the predominant trading partner for all countries in the region except Lithuania and Slovakia. Exports to the EU have been stimulated by initially asymmetrical trade agreements, though the EU has a substantial surplus on trade with the region as a whole, partly reflecting the considerable demand for Western consumer goods which were not previously available, as well as for capital goods for the modernisation of industry. The opening of the CEE countries is also reflected in growing FDI, most of this coming from the EU and Hungary being the main recipient, followed by (in relation to population) the Czech Republic and Estonia.

Despite significant structural problems, most CEE countries have yet to develop coherent regional policies. After reform, priority was given to reducing state intervention and securing macroeconomic stability

with inevitable constraints on public budgets. Increasingly, however, Governments are adopting a more positive approach to regional policy in view of the need to address emerging spatial disparities as well as the structural development of the economy as a whole. Nevertheless, the decentralisation of responsibilities necessary for an effective regional policy is likely to be a lengthy process and the countries need to continue their efforts to establish the structures and procedures necessary for them to receive support from the EU Structural Funds.

The economic impact of enlargement is likely to be generally positive. So far, there have been mutual benefits for both sides. For producers in regions in both CEE countries and EU Member States, major new market opportunities have opened up and accession will intensify trade. In addition, there have also been significant flows of direct investment into CEE countries. With accession, the regions of CEE countries can expect to benefit from the EU Structural Funds, aimed at promoting economic convergence and cohesion. Membership will imply full harmonisation with the EU *acquis* with consequences for social and environmental standards. In the longer-term, a new division of labour is likely to emerge based on comparative advantage leading to general increases in economic efficiency for the enlarged Union as a whole.

## 4.7 Cyprus

Cyprus is different from the other candidate countries in a number of ways. In the first place, its GDP per head<sup>20</sup> is significantly higher than the level in Central and Eastern European countries, and broadly comparable to Greece and Portugal. Although harmonised PPS figures do not exist yet, the GDP per head of Cyprus in these terms may be close or even above 75% of the EU average, with potential implications for eligibility for Objective 1 at accession. Secondly, the Cyprus economy is not in transition, the progress of which is the main preoccupation in the other candidate countries. By contrast, Cyprus is a market economy dominated by services. Finally, the *de facto* partition following the events of 1974 colour any analysis of the island's economy and a distinction should be drawn between the northern and southern parts of the island. Sometimes data are only available for the latter.

### Demography

Analysis of demography is complicated by the existence of two categories of population: the official population comprises members of the two communities and legal immigrants, while the actual population in the northern part, also includes settlers from Turkey. These two have changed in different ways. Total actual population increased by just under 1½% a year between 1974 and 1996, largely because of a high natural growth, especially the population of the southern part of the island, even though their fertility rate (2.1), which is falling, is in fact close to that which is consistent with an unchanged population (Table 39).

The population of the northern part of the island has been greatly affected by emigration which has led to a loss of 30,000 people since 1974. In addition, the

fertility rate is declining rapidly and has resulted in a fall in the legal population estimated by the Government of the Republic of Cyprus at just over 1% a year since 1974. The actual population in the northern part of the island, however, is increasing rapidly (by an estimated 2½% a year) because of settlement from Turkey. There has also been a net inflow of migrants into the southern part of the island, averaging just over 1% a year between 1974 and 1996.

### Labour market

The Cypriot economy has been close to full employment for some time (no figures are available for the northern part of the island). Between 1990 and 1993, except briefly in 1991 during the Gulf crisis, both labour supply and demand increased significantly, the latter by more than the former, causing serious labour shortages. As a result, the Government introduced a policy of encouraging inflows of labour from abroad. In 1994, these constituted 6% of the total number employed. The labour supply has also been increased by the return of expatriates.

In 1995, over 73% of the Cypriots of working age were economically active, which is well above the EU average and that in most CEE countries. Declining growth from 1996 might result in higher unemployment and, in turn, somewhat lower activity rates. However, the decline in employment may not be very much, because activity in Cyprus is concentrated in services, particularly in those sectors such as tourism or financial services where labour demand is on a long-term upward trend. The growth of the labour force and the maintenance of near full employment suggest that the labour market is reasonably flexible.

### Economy

Since 1974, economic developments in the two parts of the island have differed. After a significant downturn following the events of 1974, GDP in the southern part of the island had increased by 1978 to the 1973 level for the island as a whole. Since then, it has grown strongly, if at varying rates, and in the past few years, growth has exceeded that in the EU, though there was a slowdown in 1996 (to 2%) (Table 40).

Despite several periods of high growth — such as between 1985 and 1990 when there was an influx of foreign direct investment — GDP in the northern part of the island has remained lower than in the southern part of the island. Since 1991, following the Gulf war and the failure of the Polly Peck group, growth has been slow, averaging only just over ½% a year between 1990 and 1996.

More generally, the northern economy has been adversely affected by several problems, notably the use of the Turkish lira, which has led to the import of high rates of inflation, and the weakness of investment (Table 41). In addition, income from tourism has not compensated for the very large visible trade deficit (exports amounting to only 20% of imports) and, despite large inward transfers, there was a substantial balance of payments deficit on current account (20% of GDP).

### GDP per head

At current exchange rates, GDP per head in the southern part of the island amounted to 60% of the EU average in 1997. However, adjusting for differences in purchasing power, it may possibly be the case that the level exceeds 75% of the EU average, which would mean the country not being eligible for Objective 1 assistance, though it should be emphasised that no official estimates are as yet available.

Since 1974, GDP per head has diverged between the northern and southern parts of the island; at present GDP per head in the former is only around 30% of that in the latter (3,240 ECU as against 10,900 ECU at current exchange rates). This disparity is reflected in differences in almost all parts of the economy, though a number of social indicators are similar in value (such as the number of people per hospital bed and the number of pupils per teacher).

### Employment

Since 1990, employment has grown markedly in the southern part of the island. In 1995, the number in work rose by some 3% and, though growth slowed in 1996, new job opportunities are still being created. As a result, the employment rate remains high at around 70% of working-age population, well above the EU average. Accordingly, labour shortages have materialised, especially in some activities demanding high

skills, and may constrain economic growth in the next few years.

Growth of services is reflected in the sectoral composition of employment. In 1995, jobs in services accounted for over 63% of the total following a significant shift out of agriculture and, to a lesser extent, industry into tourism and other services. Tourism, in particular, is estimated directly to employ 10% of those in work and to be responsible indirectly for 20% of jobs in the economy.

### Unemployment

Unemployment is significantly lower in the southern part of the island than in the EU. In 1995, it was only 2.6% of the labour force and, though it rose in 1996 as a result of a downturn in economic activity, it was still only 3.1%, close to the rate estimated to be equivalent to full employment. Unemployment, moreover, remains low even among young people and women and the only group for whom the rate is relatively high are those over 50.

While reliable figures are not available, unemployment seems to be higher in the northern part of the island.

### Trade

Cyprus has strong trade links with the EU, reflecting the close economic ties with the Union. Some 55% of exports of goods go to the EU and over 50% of imports originate from the Union. In addition, the EU accounts for over 60% of income from tourism.<sup>21</sup>

The composition of trade reflects the structure of economic activity. The main products exported are clothing, footwear, potatoes and citrus fruits. Services, however, account for almost 75% of total export earnings and offshore activities for 7.5%. Accordingly, the economy is significantly exposed to the volatility of tourism, and the balance of payments tends to go into deficit when the number of visitors declines, as happened in 1995 and 1996.

### Competitiveness

The Cypriot economy is characterised by low levels of productivity. According to official estimates, GDP per person employed amounts to only some 55% of

the EU average. The difference is even wider in manufacturing, where productivity is just 30-40% of the level in Spain, reflecting serious deficiencies in advanced technology, modern management systems and vocational training. As a result, unit labour costs are higher than in the EU. Government policy is aimed at raising productivity, which is projected to increase relative to the EU level in the coming years.

### Regional policy

Because of its size, a genuine regional policy has never been established in Cyprus. There are specialised government services for town and country planning as well as the supervision of municipalities, but no specific measures for tackling regional disparities. Preparations for the implementation of EU structural policies are being made by the Planning Bureau, which is responsible for the State investment budget. The possible unification of the island, with the major disparities which exist between the two parts, would result in significant internal pressure for the development of a regional policy.

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- [1] European Commission, *European Economy B*, July 1997.
- [2] Official retirement age in most countries is 55 for women and 60 for men, though in Poland, it is 60 for women and 65 for men.
- [3] A comparative analysis of CEEC labour markets is complicated by the lack of reliable data. Labour Force Surveys (LFS) for employment and unemployment have been introduced only in recent years and still not in all countries. Moreover, CEE countries have lower retirement ages and shorter working ages than in most EU Member States, which implies that official activity rates — ie those calculated in terms of population below the official retirement age and above school-leaving age — are higher than those calculated here which are in terms of population aged 15 to 64. The latter is used for comparability, of a kind, between the CEE countries themselves and also with the EU. In consequence, there is certain to be a divergence from official government figures, to the extent that these are published. For these reasons, the results presented here should be interpreted with caution and, especially for changes over time, should be regarded as indicative only.
- [4] EBRD, *Transition Report*, 1997.
- [5] *ibid.*
- [6] All figures in purchasing power standards.
- [7] European Commission (1997), *Opinions on Membership*, Statistical Annex.
- [8] European Commission, *Employment Observatory — Central and Eastern Europe*.
- [9] Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI), European Policy Research Centre (EPRC) — University of Strathclyde (1996), *The impact on cohesion of EU enlargement*, unpublished study for the European Commission.
- [10] European Commission, *Employment Observatory — Central and Eastern Europe*.
- [11] *ibid.*
- [12] European Commission (1998), *The Impact of the enlargement of the European Union towards the Associated Central and Eastern European Countries on RTD/innovation and structural policies*.
- [13] RWI, EPRC (1996), *op. cit.*
- [14] OECD (1996), *Environmental indicators: a review of selected Central and Eastern European Countries*.
- [15] *ibid.*
- [16] *ibid.*
- [17] *ibid.*
- [18] RWI, EPRC (1996), *op. cit.*
- [19] Euridice (1997), *Complément à l'étude sur les structures des systèmes d'enseignement et de formation initiale dans l'Union européenne*.
- [20] At current prices. Eurostat and the Government of the Republic of Cyprus are currently collaborating to produce a PPS series.
- [21] RWI, EPRC (1996), *op. cit.*
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# Methodology

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## Time periods

The baseline period used in the report is the latest decade available, since a ten-year period is long enough to minimise variations due to the business cycle. For output and GDP data at the regional level, 1996 is the latest year available, so the decade used is 1986–96. For labour market data, such as employment and unemployment, 1997 data are already published, so the baseline period is 1987–97. As well as fitting statistical availability, there is some economic rationale for this, since changes in the labour market generally lag those in output by up to a year or more.

For some indicators, the historical data series is relatively short (eg Labour Force Survey data for urban and rural areas) and so only the latest data are given.

## Regions

The regional classification used in the report is the "Nomenclature of territorial units for statistics", commonly known by its French acronym, NUTS. This is defined by Eurostat on the basis of existing institutional arrangements in the Member State concerned and by agreement with the national authorities. Unless otherwise specified, 'regions' in this report refer to NUTS-2 regions, of which there are 206 in the Union as a whole.

NUTS-2 is the smallest level of geographical disaggregation for which a full range of statistical data are available. It is also the level at which eligibility for Objectives 1 and 6 is determined (for other regional Objectives, the smaller, NUTS-3 regions are used). Though most NUTS-2 regions are broadly comparable in size, there are some extreme variations, most notably Ile de France and Lombardia at

the top end of the scale with populations of 9–10 million and Corse, Burgenland and Highlands and Islands at the bottom end with populations of 2–300 thousand, while Valle d'Aosta is even smaller.

For more information, see Eurostat, *Regions, nomenclature of territorial units for statistics*, March 1995.

## Urban and rural areas

The Eurostat classification of areas of dense, intermediate and sparse population is based on the following principles:

- densely populated areas are defined as groups of contiguous municipalities, each with a population density greater than 500 inhabitants per square km, and a total population for the area of more than 50,000;
- intermediate areas are defined as groups of municipalities, each with a population density greater than 100 inhabitants per square km, but not belonging to a densely populated area. The area's total population must be at least 50,000 or the area must be adjacent to a densely populated one. (A municipality or a contiguous group of municipalities with an area of less than 100 square kms, not reaching the required density but fully contained in a dense or intermediate area, is considered to be part of that area. If contained by a mixture of dense and intermediate areas, it is considered intermediate.)
- All the remaining areas are classified as sparsely populated.

In this report, densely populated areas are identified as urban, while sparsely populated ones are generally considered rural. However, there is an alternative classification of rural areas, proposed by the OECD, which defines rural regions as those with less than 150 inhabitants per square km and this too is referred to in the text.

### **PPS measures of GDP**

Throughout the report, comparisons between Member States or regions are made in terms of PPS (purchasing power standards). These adjust for differences in price levels between countries (there are no regional estimates of PPS) which are not necessarily reflected in the prevailing exchange rate.

### **Employment data**

There are two sources of regional employment data used in the report:

- data on numbers employed derived from the annual Union Labour Force Survey, which relate to those resident in the region who are in employment, wherever they work;
- data on employment based on regional (or national) accounts, which relate to those employed in the region, wherever they are resident.

The first measure is used to estimate employment rates and participation rates (the data on unemployment also relate to residence) where the denominator is working-age population resident in the region (or country). The second measure is used in the estimation of GDP per person employed, where the numerator is also based on the regional (or national) accounts.

The two measures will differ according to the scale of commuting, either in or out of a region. Although this is generally very small for most regions of the size of NUTS-2, there are a few regions where it is important — eg Luxembourg, where there is significant inward commuting, and Flevoland in the Netherlands, where there is equally large outward commuting.

## Statistical annex

		EL	E	IRL	P	EUR4	EUR11 <sup>(a)</sup>	EUR15 <sup>(a)</sup>
Annual average % change in GDP	1986-96	1.6	2.8	6.2	3.5	2.9	2.0	2.1
	1986-91	2.2	4.3	5.3	5.1	4.1	2.8	3.0
	1991-96	1.0	1.3	7.1	1.8	1.7	1.5	1.5
	<i>projections</i> 1996-99	<i>3.8</i>	<i>3.6</i>	<i>9.2</i>	<i>3.8</i>	<i>4.1</i>	<i>2.6</i>	<i>2.8</i>
Annual average % change in population	1986-96	0.5	0.3	0.3	-0.1	0.3	0.4	0.4
	1986-91	0.5	0.2	-0.1	-0.3	0.2	0.4	0.4
	1991-96	0.4	0.4	0.6	0.1	0.4	0.4	0.4
	<i>projections</i> 1996-99	<i>0.5</i>	<i>0.1</i>	<i>0.9</i>	<i>0.1</i>	<i>0.2</i>	<i>0.3</i>	<i>0.3</i>
GDP per head (PPS), EUR15=100	1986	59.2	69.8	60.8	55.1	65.2	107.7	100.0
	1987	57.4	71.5	62.5	56.7	66.3	107.4	100.0
	1988	58.3	72.5	63.8	59.2	67.6	107.1	100.0
	1989	59.1	73.1	66.3	59.4	68.3	106.9	100.0
	1990	57.4	74.1	71.1	58.5	68.8	106.8	100.0
	1991	60.1	78.7	74.7	63.8	73.1	105.5	100.0
	1992	61.9	77.0	78.4	64.8	72.7	105.6	100.0
	1993	64.2	78.1	82.5	67.7	74.5	105.2	100.0
	1994	65.2	78.1	90.7	69.5	75.3	105.0	100.0
	1995	66.4	78.6	96.8	70.1	76.3	104.8	100.0
	1996	67.5	78.7	96.5	70.5	76.6	104.8	100.0
	<i>projections</i> 1997	<i>69.2</i>	<i>77.8</i>	<i>96.4</i>	<i>70.7</i>	<i>76.3</i>	<i>104.8</i>	<i>100.0</i>
<i>projections</i> 1998	<i>68.6</i>	<i>78.6</i>	<i>102.1</i>	<i>71.1</i>	<i>77.1</i>	<i>104.7</i>	<i>100.0</i>	
<i>projections</i> 1999	<i>69.3</i>	<i>79.6</i>	<i>105.1</i>	<i>71.8</i>	<i>78.2</i>	<i>104.5</i>	<i>100.0</i>	

<sup>(a)</sup>Growth rates 86-96 and 86-91: excluding new German Länder  
Source: Eurostat; DGXVI calculations

**Table 2 GDP per head in richest and poorest regions in the Union, 1986 and 1996**

(GDP per head in PPS, EUR15=100)

1986			1996		
Regions	GDP	Rank	Regions	GDP	Rank
Hamburg (D)	185	1	Hamburg (D)	192	1
Reg. Bruxelles-Cap. / Brussels Hfdst. Gew. (B)	163	2	Reg. Bruxelles-Cap. / Brussels Hfdst. Gew. (B)	173	2
Île de France (F)	162	3	Darmstadt (D)	171	3
Darmstadt (D)	152	4	Luxembourg (Grand-Duché) (L)	169	4
Wien (A)	148	5	Wien (A)	167	5
Greater London (UK)	148	6	Île de France (F)	160	6
Bremen (D)	144	7	Oberbayern (D)	156	7
Stuttgart (D)	143	8	Bremen (D)	149	8
Oberbayern (D)	141	9	Greater London (UK)	140	9
Luxembourg (Grand-Duché) (L)	137	10	Antwerpen (B)	137	10
<b>Highest 10</b>	<b>153</b>		<b>Highest 10</b>	<b>158</b>	
Stockholm (S)	133	11	Stuttgart (D)	135	11
Ahvenanmaa/Åland (FIN)	132	12	Groningen (NL)	134	12
Lombardia (I)	132	13	Emilia-Romagna (I)	133	13
Uusimaa (FIN)	129	14	Lombardia (I)	132	14
Valle d'Aosta (I)	129	15	Valle d'Aosta (I)	131	15
Berlin (D)	128	16	Uusimaa (FIN)	129	16
Emilia-Romagna (I)	125	17	Trentino-Alto Adige (I)	128	17
Mittelfranken (D)	124	18	Grampian (UK)	126	18
Antwerpen (B)	124	19	Friuli-Venezia Giulia (I)	126	19
Karlsruhe (D)	123	20	Karlsruhe (D)	126	20
Düsseldorf (D)	122	21	Veneto (I)	124	21
Grampian (UK)	122	22	Berkshire, Buckinghamshire, Oxfordshire (UK)	124	22
Noord-Holland (NL)	117	23	Mittelfranken (D)	123	23
Köln (D)	117	24	Stockholm (S)	123	24
Piemonte (I)	117	25	Salzburg (A)	121	25
<b>Highest 25</b>	<b>138</b>		<b>Highest 25</b>	<b>143</b>	
Guyane (F)	37	1	Guadeloupe (F)	40	1
Guadeloupe (F)	37	2	Ipeiros (EL)	44	2
Alentejo (P)	37	3	Réunion (F)	46	3
Acores (P)	40	4	Guyane (F)	48	4
Madeira (P)	40	5	Acores (P)	50	5
Réunion (F)	40	6	Voreio Aigaio (EL)	52	6
Centro	42	7	Martinique (F)	54	7
Voreio Aigaio (EL)	44	8	Madeira (P)	54	8
Extremadura (E)	44	9	Extremadura (E)	55	9
Algarve (P)	44	10	Dessau (D)	55	10
<b>Lowest 10</b>	<b>41</b>		<b>Lowest 10</b>	<b>50</b>	
Ipeiros (EL)	47	11	Andalucía (E)	57	11
Martinique (F)	49	12	Dytiki Ellada (EL)	58	12
Dytiki Ellada (EL)	49	13	Magdeburg (D)	58	13
Norte (P)	51	14	Peloponnisos (EL)	58	14
Ionia Nisia (EL)	52	15	Calabria (I)	59	15
Andalucía (E)	53	16	Alentejo (P)	60	16
Castilla-La Mancha (E)	54	17	Centro	61	17
Galicia (E)	55	18	Anatoliki Makedonia, Thraki (EL)	61	18
Thessalia (EL)	55	19	Thuringen (D)	61	19
Anatoliki Makedonia, Thraki (EL)	56	20	Mecklenburg-Vorpommern (D)	61	20
Kriti (EL)	57	21	Dytiki Makedonia (EL)	62	21
Dytiki Makedonia (EL)	58	22	Ionia Nisia (EL)	62	22
Kentriki Makedonia (EL)	58	23	Norte (P)	62	23
Calabria (I)	59	24	Thessalia (EL)	63	24
Peloponnisos (EL)	61	25	Galicia (E)	63	25
<b>Lowest 25</b>	<b>52</b>		<b>Lowest 25</b>	<b>59</b>	

New German Länder, Groningen (NL): no data for 1986; France (DOM) 1996. 1994 data  
Source: Eurostat; DGXVI calculations

**Table 3 Regional disparities in GDP per head and unemployment by Member State, 1987 and 1997**

	GDP per head				Unemployment				Employment (average annual % change) 1987-97
	PPS (EUR15=100)		Regional disparity (standard deviation)		% labour force		Regional disparity (standard deviation)		
	1986	1996	1986	1996	1987	1997	1987	1997	
B	102.8	112.1	25.0	26.0	11.0	8.9	3.0	3.7	0.3
DK	112.1	119.3	-	-	5.8	5.7	-	-	-0.1
D	-	108.3	-	30.2	-	9.8	-	4.4	-
D90 <sup>(c)</sup>	116.1	118.5	22.0	23.7	6.3	7.9	2.2	2.0	0.3
EL	59.2	67.5	6.0	8.6	7.4	9.6	2.1	2.4	0.9
E	69.8	78.7	13.7	16.8	20.8	21.1	5.7	5.6	1.2
F	109.8	103.9	27.8	29.0	10.3	12.0	1.8	2.4	0.3
IRL	60.8	96.5	-	-	18.1	10.1	-	-	2.3
I	100.4	102.7	25.2	27.2	10.2	12.3	5.2	7.5	-0.3
L	137.3	168.5	-	-	2.5	2.5	-	-	2.8
NL <sup>(d)</sup>	101.8	106.8	12.2	12.3	9.9	5.2	1.4	0.8	1.3
A	103.2	112.3	24.7	28.6	3.8 <sup>(e)</sup>	4.4	1.0 <sup>(e)</sup>	1.1	0.6
P <sup>(e)</sup>	55.1	70.5	16.2	13.1	7.0	6.7	2.4	1.8	-0.4
FIN	99.7	96.9	17.4	20.0	5.2	14.8	2.6 <sup>(e)</sup>	2.7	-1.5
S	111.5	101.2	10.7	11.1	2.5	10.4	1.0 <sup>(e)</sup>	1.7	-0.9
UK	98.6	99.8	19.6	18.5	11.0	7.1	3.6	2.3	0.4
<b>EUR15</b>	<b>100.0</b>	<b>100.0</b>	<b>27.1</b>	<b>26.9</b>	<b>10.5<sup>(e)</sup></b>	<b>10.7</b>	<b>5.6</b>	<b>5.9</b>	<b>0.3</b>

<sup>(a)</sup>National data<sup>(b)</sup>EUR12<sup>(c)</sup>D90: excluding new German Länder<sup>(d)</sup>GDP disparity 1986: excluding Groningen<sup>(e)</sup>Employment growth: excluding Açores and Madeira

Source: Eurostat; DGXVI calculations

NUTS-2 region	Population ('000s) 1996	Population density (no./km <sup>2</sup> ) 1996	Unemployment rates, 1997			GDP/head in PPS (EUR15=100) 1996
			Total	% Female	Youth	
Rég. Bruxelles-Cap./ Brussels Hfdst. Gew. (B)	949.4	5882	13.5	14.2	31.8	173
Greater London (UK)	7074.3	4483	9.7	8.7	16.6	140
Ceuta y Melilla (E)	133.2	4297	26.4	36.2	58.4	72
Berlin (D)	3465.1	3897	13.4	13.0	14.7	102
Wien (A)	1595.4	3844	5.9	6.2	8.3	167
West Midlands (County) (UK)	2642.5	2939	9.4	7.8	17.9	93
Hamburg (D)	1707.9	2261	8.8	7.5	12.3	192
Merseyside (UK)	1420.4	2169	12.1	9.1	24.7	73
Greater Manchester (UK)	2575.5	2003	7.4	5.6	15.2	91
Bremen (D)	678.8	1679	12.3	11.2	18.0	149
West Yorkshire (UK)	2109.4	1037	7.4	5.7	15.3	93
Düsseldorf (D)	5290.8	1000	9.6	9.0	12.5	119
Zuid-Holland (NL)	3338.8	969	5.3	7.0	9.0	111
Ile de France (F)	11044.3	919	10.7	11.2	18.7	160
Attiki (EL)	3448.5	906	11.6	16.9	34.5	77
South Yorkshire (UK)	1304.7	837	10.0	7.6	19.6	74
Utrecht (NL)	1075.0	750	4.1	5.4	6.8	120
Comunidad de Madrid (E)	5016.0	627	18.4	22.6	36.8	101
Noord-Holland (NL)	2471.6	609	5.3	7.0	9.6	121
Köln (D)	4202.4	571	8.3	8.1	11.6	113
Antwerpen (B)	1633.4	570	7.2	10.1	17.0	137
Bedfordshire, Hertfordshire (UK)	1564.6	544	4.1	3.6	7.6	102
Limburg (NL)	1134.9	514	5.4	7.2	7.5	98
<b>Total &gt; 500 per km<sup>2</sup></b>	<b>65876.9</b>	<b>1029</b>	<b>9.8</b>	<b>10.1</b>	<b>17.6</b>	<b>122</b>
<b>EUR15</b>	<b>373242.7</b>	<b>117</b>	<b>10.7</b>	<b>12.2</b>	<b>20.9</b>	<b>100</b>

*Source: Eurostat*

**Table 5 Sparsely-populated NUTS-2 regions, 1996/1997**

NUTS-2 region	Population ('000s)	Population density (no./km <sup>2</sup> )	Unemployment rates, 1997			GDP/head in PPS (EUR15=100) 1996
			Total	% Female	Youth	
Guyane (F)	159.7	2	22.4			48
Övre Norrland (S)	525.4	3	13.3	10.3	32.2	97
Pohjois-Suomi (FIN)	558.6	4	18.6	15.9	38.4	83
Mellersta Norrland (S)	392.5	6	13.0	10.1	31.1	99
Itä-Suomi (FIN)	703.2	8	18.7	15.7	38.4	74
Highlands, Islands (UK)	280.4	9	8.4	7.4	13.4	80
Norra Mellansverige (S)	859.8	13	12.3	11.0	28.1	97
Väli-Suomi (FIN)	705.9	15	14.9	14.7	36.1	83
Ahvenanmaa/Åland (FIN)	25.2	16	4.6	4.1	15.8	119
Alentejo (P)	521.5	19	10.4	15.9	22.5	60
Castilla-La Mancha (E)	1694.0	21	19.1	28.1	37.8	66
Småland Med Öarna (S)	792.9	24	8.6	9.1	17.6	99
Aragón (E)	1180.2	25	14.4	24.4	30.0	89
Extremadura (E)	1075.3	26	29.5	41.4	43.9	55
Castilla y León (E)	2509.8	27	19.9	30.3	43.8	76
Corse (F)	261.3	30	15.2	19.7	30.6	82
Etelä-Suomi (FIN)	1796.9	31	15.1	14.4	32.4	92
Dytiki Makedonia (EL)	301.9	32	13.8	22.6	45.7	62
Valle d'Aosta (I)	119.2	37	4.1	5.3	11.2	131
Östra Mellansverige (S)	1499.6	39	10.2	9.7	22.8	92
Anatolíki Makedonia, Thraki (EL)	560.6	40	8.3	12.5	27.8	61
Ipeiros (EL)	368.2	40	10.5	17.6	43.4	44
Limousin (F)	718.1	42	9.2	11.1	23.6	81
Stereia Ellada (EL)	662.7	43	12.0	22.6	42.6	65
Peloponnisos (EL)	671.4	43	7.5	13.2	27.9	58
Voreio Aigaio (EL)	184.3	48	7.1	12.9	23.5	52
Comunidad Foral de Navarra (E)	526.6	51	10.0	15.0	29.9	98
Auvergne (F)	1314.9	51	11.0	14.0	33.8	84
Notio Aigaio (EL)	267.9	51	4.3	7.2	15.5	75
Bourgogne (F)	1625.1	51	11.0	13.5	27.9	90
Ireland (IRL)	3626.1	52	10.1	10.1	15.8	97
La Rioja (E)	260.5	52	11.8	17.6	26.5	89
Tirol (O)	660.2	52	5.4	7.4	9.7	108
Champagne-Ardenne (F)	1352.1	53	13.3	16.0	34.1	94
Thessalia (EL)	741.8	53	7.5	12.8	27.1	63
Luxembourg (B)	241.9	54	6.8	9.3	18.6	96
Midi-Pyrénées (F)	2512.7	55	11.2	13.5	23.1	87
Kärnten (A)	562.8	59	5.8	8.4	10.2	90
Västsverige (S)	1770.4	59	10.4	10.2	20.7	98
Basilicata (I)	607.9	61	20.6	30.1	50.7	69
Grampian (UK)	531.2	61	4.8	4.4	9.6	126

NUTS-2 region	Population ('000s)	Population density (no./km <sup>2</sup> )	Unemployment rates, 1997			GDP/head in PPS (EUR15=100) 1996
			Total	Female	Youth	
Centre (F)	2437.5	62	10.9	13.4	26.3	92
Poitou-Charentes (F)	1625.3	63	11.4	13.8	30.9	83
Dytiki Ellada (EL)	733.0	65	7.9	11.6	28.5	58
Clwyd, Dyfed, Gwynedd, Powys (UK)	1134.3	66	7.2	5.8	13.9	81
Kriti (E)	559.3	67	4.3	6.9	19.8	72
Trentino-Alto Adige (I)	918.7	68	3.8	5.7	10.0	128
Franche-Comté (F)	1117.1	69	9.1	11.5	20.7	93
Sardegna (I)	1663.0	69	20.5	29.3	51.0	73
Algarve (P)	345.7	69	8.2	9.9	17.1	71
Burgenland (A)	275.3	69	3.8	5.2	5.7	71
Aquitaine (F)	2895.4	70	11.9	14.8	27.9	92
Salzburg (A)	509.4	71	3.9	4.9	7.5	121
Cumbria (UK)	490.6	72	6.9	5.5	13.7	101
Centro (P)	1710.7	72	3.4	3.9	12.2	61
Steiermark (A)	1207.2	74	4.8	6.6	7.6	90
Molise (I)	330.7	75	17.2	23.7	49.9	79
Mecklenburg-Vorpommern (D)	1820.1	79	18.8	22.4	10.9	61
Niederösterreich (A)	1524.3	80	3.4	4.4	5.0	96
Basse-Normandie (F)	1418.9	81	13.2	15.1	32.8	89
Andalucía (E)	7128.2	82	32.0	41.8	50.8	57
Languedoc-Roussillon (F)	2254.5	82	17.8	20.8	32.0	78
Ionia Nisia (EL)	199.4	86	6.2	7.6	23.4	62
Brandenburg (D)	2548.2	86	17.2	21.1	11.6	67
North Yorkshire (UK)	734.7	88	4.8	4.4	9.4	101
Sydsverige (S)	1265.4	91	11.9	11.8	23.2	93
Galicia (E)	2723.8	93	19.2	24.8	37.1	63
Kentriki Makedonia (EL)	1776.9	94	9.2	14.5	28.2	67
Región de Murcia (E)	1084.4	96	18.3	26.9	28.6	67
Picardie (F)	1866.4	96	14.2	16.9	37.9	85
Umbria (I)	829.9	98	8.2	13.9	27.1	98
Lorraine (F)	2311.5	98	11.3	13.6	29.3	89
Pays de la Loire (F)	3166.5	99	11.0	13.6	25.4	91
Cantabria (E)	526.6	99	21.1	28.9	45.1	77
<b>Bottom 25</b>	<b>18944.3</b>	<b>16</b>	<b>14.8</b>	<b>17.5</b>	<b>33.2</b>	<b>79</b>
<b>Bottom 50</b>	<b>48260.7</b>	<b>29</b>	<b>12.1</b>	<b>14.5</b>	<b>27.2</b>	<b>81</b>
<b>Total &lt; 100 Inh./Km<sup>2</sup></b>	<b>88859.7</b>	<b>42</b>	<b>13.6</b>	<b>16.5</b>	<b>27.9</b>	<b>79</b>
<b>EUR15</b>	<b>373242.7</b>	<b>117</b>	<b>10.7</b>	<b>12.2</b>	<b>20.9</b>	<b>100</b>

Source: Eurostat; DGXVI calculations

**Table 6 Labour Force Survey data for areas of different population density, 1997**

Characteristic	Population density areas		
	Dense	Intermediate	Sparse
Share of EU population (%)	49.1	27.5	23.5
Unemployment (% labour force)	11.5	9.1	11.3
Youth unemployment (% labour force)	23.0	18.3	21.1
Female unemployment (% labour force)	12.4	11.1	13.8
Long-term unemployment (% unemployed)	52.2	48.0	40.8
Long-term unemployment (% labour force)	6.0	4.4	4.6
<i>Sectoral employment (% employed)</i>			
Agriculture and fishing	1.1	5.1	12.9
Manufacturing (incl. mining and electricity)	20.0	24.6	21.2
Construction	6.6	8.4	9.6
Transport and communication	6.7	5.4	4.9
Finance and business services	14.0	9.6	6.4
Trade, hotels, restaurants and other personal services	20.8	20.0	18.6
Communal services	30.3	26.5	26.1
<i>Population by age group (% total)</i>			
<15	16.6	17.5	17.0
15-64	68.4	67.4	65.5
≥ 65	15.0	15.0	17.4
Employed part-time (% employed)	17.1	17.5	15.9
Part-time employed preferring to work full time (% part-timers)	19.0	15.7	26.2
Self-employed (% employed)	12.7	15.5	19.1
Family workers (% employed)	1.1	2.0	3.7
Employed in more qualified occupations <sup>(1)</sup> (% employed)	39.5	33.1	26.7
Temporary employees (% employees)	11.7	11.0	15.1
<i>Population aged 25-64 by educational level (% total)</i>			
Low (lower secondary)	40.5	43.6	46.5
Medium (upper secondary)	37.5	39.6	39.4
High (tertiary level)	22.1	16.8	14.0
<sup>(1)</sup> Managers, professionals and technicians			
Source: Eurostat, LFS			

**Table 7 Regions with a high share of employment in services, 1996/1997**

NUTS-2 regions	Population	Employed in services	Unemployment rate	GDP/head in PPS
	('000s)	(%)	(%)	(EUR15=100)
	1996	1997	1997	1996
Ceuta y Melilla (E)	133.2	92.6	26.4	72
Reg. Bruxelles-Cap. / Brussels Hfdst. Gew. (B)	949.4	83.8	13.5	173
Greater London (UK)	7074.3	83.7	9.7	140
Stockholm (S)	1735.0	82.9	7.9	123
Brabant Wallon (B)	340.3	79.8	7.9	89
Île de France (F)	11044.3	79.3	10.7	160
Corse (F)	261.3	78.9	15.2	82
Surrey, East + West Sussex (UK)	2519.2	77.6	4.1	104
Provence-Alpes-Côte d'Azur (F)	4465.2	77.5	16.5	92
Wien (A)	1595.4	77.4	5.9	167
Namur (B)	436.6	76.7	11.4	86
Uusimaa (FIN)	1334.8	76.7	11.4	129
Vlaams Brabant (B)	1001.9	76.4	4.5	96
Hamburg (D)	1707.9	76.4	8.8	192
Berlin (D)	3465.1	75.9	13.4	102
Lazio (I)	5217.2	75.6	13.3	114
Utrecht (NL)	1075.0	75.6	4.1	120
Noord-Holland (NL)	2471.6	74.6	5.3	121
Zuid-Holland (NL)	3338.8	74.3	5.3	111
Luxembourg (Grand-Duché) (L)	415.5	74.2	2.5	169
Merseyside (UK)	1420.4	74.2	12.1	73
Liguria (I)	1650.7	74.0	10.2	119
Berkshire, Buckinghamshire, Oxfordshire (UK)	2065.9	73.9	3.2	124
Övre Norrland (S)	525.4	73.8	13.3	97
Bedfordshire, Hertfordshire (UK)	1564.6	73.8	4.1	102
<b>Top 10</b>	<b>30117.5</b>	<b>80.3</b>	<b>10.3</b>	<b>137</b>
<b>Top 25</b>	<b>57809.0</b>	<b>77.8</b>	<b>9.5</b>	<b>127</b>
<b>EUR15</b>	<b>373242.7</b>	<b>65.3</b>	<b>10.7</b>	<b>100</b>

*Employment based on place of residence*  
Source: Eurostat, LFS

**Table 8 Regions with a high share of industrial employment, 1996/1997**

NUTS-2 regions	Population	Employed in industry	Unemployment rate	GDP/head in PPS (EUR15=100)
	('000s) 1996	(%) 1997	(%) 1997	1996
Stuttgart (D)	3872.1	43.8	6.1	135
Tübingen (D)	1730.8	42.9	5.7	114
Detmold (D)	2019.8	42.5	8.3	105
Oberfranken (D)	1112.0	41.8	7.4	107
Veneto (I)	4452.8	41.1	4.8	124
Lombardia (I)	8958.7	40.7	6.2	132
Niederbayern (D)	1147.7	40.2	5.5	97
Comunidad Foral de Navarra (E)	526.6	40.0	10.0	98
Vorarlberg (A)	344.0	40.0	4.1	112
Norte (P)	3537.8	39.9	6.9	62
Piemonte (I)	4294.1	39.6	8.7	118
Unterfranken (D)	1320.4	39.5	6.4	104
Arnsberg (D)	3827.4	39.1	9.7	104
La Rioja (E)	260.5	39.0	11.8	89
Marche (I)	1447.6	38.7	7.1	106
Karlsruhe (D)	2650.6	38.5	6.6	126
Schwaben (D)	1725.7	38.4	5.8	110
Cataluña (E)	6065.5	38.4	17.4	99
Freiburg (D)	2093.4	38.3	6.2	109
Limburg (B)	777.6	37.8	8.3	110
Mittelfranken (D)	1670.8	37.7	7.1	123
Franche-Comté (F)	1117.1	37.4	9.1	93
Oberpfalz (D)	1057.2	37.2	6.5	100
Pais Vasco (E)	2069.2	36.9	18.8	92
Sachsen (D)	4556.2	36.8	17.2	64
<b>Top 10</b>	<b>27702.4</b>	<b>41.4</b>	<b>6.2</b>	<b>116</b>
<b>Top 25</b>	<b>62635.6</b>	<b>39.7</b>	<b>9.0</b>	<b>108</b>
<b>EUR15</b>	<b>373242.7</b>	<b>29.4</b>	<b>10.7</b>	<b>100</b>

*Employment based on place of residence*  
Source: Eurostat, LFS

**Table 9 Regions with a high share of agricultural employment, 1996/1997**

NUTS-2 regions	Population	Employed in agriculture	Unemployment rate	GDP/head in PPS
	('000s) 1996	(%) 1997	(%) 1997	(EUR15=100) 1996
Peloponnisos (EL)	671.4	43.4	7.5	58
Dytiki Ellada (EL)	733.0	41.5	7.9	58
Anatoliki Makedonia, Thraki (EL)	560.6	40.0	8.3	61
Thessalia (EL)	741.8	38.6	7.5	63
Kriti (EL)	559.3	37.8	4.3	72
Centro (P)	1710.7	31.9	3.4	61
Stereia Ellada (EL)	662.7	31.8	12.0	65
Ipeiros (EL)	368.2	30.3	10.5	44
Ionia Nisia (EL)	199.4	26.7	6.2	62
Voreio Aigaio (EL)	184.3	24.2	7.1	52
Dytiki Makedonia (EL)	301.9	23.4	13.8	62
Galicia (E)	2723.8	22.2	19.2	63
Ahvenanmaa/Åland (FIN)	25.2	20.7	4.6	119
Kentriki Makedonia (EL)	1776.9	19.5	9.2	67
Väli-Suomi (FIN)	705.9	16.4	14.9	83
Extremadura (E)	1075.3	16.3	29.5	55
Açores (P)	242.1	16.0	5.4	50
Molise (I)	330.7	15.5	17.2	79
Alentejo (P)	521.5	14.2	10.4	60
Castilla y León (E)	2509.8	14.0	19.9	76
Basilicata (I)	607.9	13.7	20.6	69
Calabria (I)	2074.2	13.1	24.9	59
Itä-Suomi (FIN)	703.2	12.5	18.7	74
Sardegna (I)	1663.0	12.5	20.5	73
Madeira (P)	257.7	12.5	5.4	54
<b>Top 10</b>	<b>6391.4</b>	<b>35.4</b>	<b>6.3</b>	<b>61</b>
<b>Top 25</b>	<b>21910.5</b>	<b>22.7</b>	<b>14.7</b>	<b>65</b>
<b>EUR15</b>	<b>373242.7</b>	<b>5.0</b>	<b>10.7</b>	<b>100</b>

*Employment based on place of residence*  
Source: Eurostat, LFS

**Table 10 Imports by Member State, 1997**

(million ECU)

	B/L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EUR15
Agriculture	6,584	2,497	17,628	1,097	6,751	9,064	767	10,375	8,444	1,842	2,371	1,178	2,131	10,554	81,283
Mining and quarrying	1,092	27	1,725	67	591	1,743	161	848	985	297	216	382	317	1,386	9,834
Petrol and gas extraction, refining	6,812	1,430	19,972	1,626	7,183	14,477	936	12,939	10,163	1,907	1,919	1,759	3,523	7,386	92,031
Electricity, gas and water supply	2,289	74	9,098	66	1,702	4,190	105	1,027	1,780	982	264	630	241	1,327	23,774
Basic metal products	8,542	1,995	22,411	1,322	5,909	13,671	929	16,900	9,202	3,552	1,450	2,155	3,593	13,684	105,314
Mineral products	2,733	721	6,636	493	1,656	4,387	480	3,095	2,441	1,498	493	616	914	4,110	30,275
Chemicals and pharmaceuticals	21,224	4,133	34,506	2,981	12,296	29,693	4,297	25,711	17,579	6,135	3,131	3,180	5,647	26,070	196,583
Fabricated metal products	4,069	1,447	11,557	658	2,805	6,690	827	3,522	3,914	2,857	945	717	1,664	6,258	47,930
Machinery and equipment	9,366	3,593	23,297	1,931	8,272	21,159	2,035	12,975	7,882	6,490	2,308	2,925	6,413	20,739	129,388
Office machinery and computers	3,283	1,893	17,077	367	3,009	11,567	5,182	5,828	17,739	1,689	678	1,342	2,801	19,352	91,808
Electrical and telecoms equipment	10,592	4,656	41,905	1,712	9,609	27,396	4,541	17,474	16,353	6,963	3,149	4,459	9,248	34,935	192,992
Transport equipment	17,745	3,304	37,354	2,487	16,058	22,685	1,789	20,589	11,973	6,690	4,293	2,142	5,343	32,334	184,787
Aviation and space	1,100	395	8,512	138	1,171	20,528	659	1,682	1,362	932	196	710	812	3,651	41,849
Instrument engineering	2,184	759	8,070	475	2,158	5,541	722	3,828	4,016	1,214	512	542	1,337	5,492	36,849
Food, drink and tobacco	9,357	3,148	21,005	2,505	6,576	16,779	2,153	13,331	9,465	2,647	1,969	1,161	2,481	16,841	109,418
Clothing and textiles	9,014	3,342	34,077	2,243	5,529	18,198	1,758	13,881	8,223	5,057	2,997	1,525	3,261	19,868	128,973
Wood	2,452	1,368	8,070	417	1,304	3,730	438	2,853	2,880	1,746	349	303	877	4,875	31,663
Paper and printing	4,153	1,618	9,739	742	2,829	8,194	1,038	4,775	4,509	2,187	793	624	1,243	9,456	51,899
Rubber and plastics	4,406	1,408	10,537	626	3,092	7,778	1,015	4,217	4,288	2,283	1,066	785	1,886	7,084	50,472
Other	12,664	1,744	41,316	402	1,614	3,376	2,643	7,200	22,601	921	405	686	3,736	24,659	123,967
<b>Total</b>	<b>139,662</b>	<b>39,552</b>	<b>384,493</b>	<b>22,353</b>	<b>100,115</b>	<b>250,845</b>	<b>32,477</b>	<b>183,050</b>	<b>165,800</b>	<b>57,890</b>	<b>29,505</b>	<b>27,818</b>	<b>57,471</b>	<b>270,059</b>	<b>1,761,090</b>

Source: Eurostat

**Table 11 Exports by Member State, 1997**

	(million ECU)														
	B/L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EUR15
Agriculture	4,038	2,827	3,925	1,621	8,288	13,113	499	5,692	9,562	482	472	448	592	2,689	54,248
Mining and quarrying	195	5	492	4	62	1,014	2	42	424	1	5	5	88	643	2,982
Petrol and gas extraction, refining	3,724	1,359	2,775	879	2,162	2,832	153	3,388	7,350	286	412	779	1,472	13,846	41,418
Electricity, gas and water supply	391	267	668	21	119	3,226	5	72	4,397	317	26	48	541	975	11,074
Basic metal products	11,560	911	22,567	827	4,885	12,144	380	8,608	8,940	3,322	396	2,805	5,429	10,179	92,953
Mineral products	3,405	622	7,028	528	3,559	4,967	364	8,174	1,690	1,631	845	527	725	4,087	38,151
Chemicals and pharmaceuticals	25,851	4,116	48,855	582	7,468	32,848	12,468	16,244	23,767	3,370	997	2,193	4,884	28,800	212,443
Fabricated metal products	3,931	1,617	15,117	181	2,915	7,877	435	10,922	3,481	3,131	777	923	2,318	6,222	59,848
Machinery and equipment	8,899	5,051	69,082	258	5,681	23,122	1,261	38,765	8,612	7,316	714	4,258	8,182	26,075	207,277
Office machinery and computers	2,360	782	10,115	29	1,102	8,649	10,753	3,226	16,198	598	73	1,023	830	18,446	74,183
Electrical and telecoms equipment	9,063	4,712	55,472	440	6,666	30,871	8,082	19,021	17,088	5,915	2,461	7,174	14,497	32,906	214,368
Transport equipment	20,988	1,590	71,428	117	21,903	31,946	187	18,525	8,216	6,242	3,149	1,937	8,594	24,341	219,163
Aviation and space	824	282	9,381	30	867	25,692	294	1,845	823	598	82	156	1,075	4,566	46,515
Instrument engineering	1,594	857	10,008	23	748	4,547	1,380	3,413	5,035	799	149	390	1,351	4,966	35,260
Food, drink and tobacco	12,701	8,689	18,741	1,235	6,438	21,841	5,496	8,486	22,094	2,101	1,095	915	1,565	13,996	125,392
Clothing and textiles	10,586	2,389	18,522	1,862	6,084	13,059	896	35,317	6,116	3,710	6,075	716	1,318	10,480	117,130
Wood	2,483	2,301	4,679	64	1,370	2,496	277	6,837	1,090	2,265	1,069	2,606	3,858	1,256	32,651
Paper and printing	3,668	812	12,564	381	2,413	6,653	289	4,596	3,880	3,086	978	8,499	7,660	6,090	61,570
Rubber and plastics	5,590	1,411	14,967	188	3,008	8,097	641	8,484	4,143	1,845	428	704	2,025	6,378	57,907
Other	19,098	2,813	46,678	338	2,198	9,767	2,977	8,282	27,290	5,187	144	325	6,394	28,121	159,612
<b>Total</b>	<b>150,951</b>	<b>43,412</b>	<b>443,062</b>	<b>9,606</b>	<b>87,935</b>	<b>264,761</b>	<b>46,839</b>	<b>209,939</b>	<b>180,195</b>	<b>52,203</b>	<b>20,349</b>	<b>36,431</b>	<b>73,400</b>	<b>245,062</b>	<b>1,864,145</b>

Source: Eurostat

**Table 12 Revealed comparative advantage by sector, 1997<sup>(a)</sup>**

	(million ECU)															
	B/L	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EUR15	EU with RoW
Agriculture	-0.24	0.06	-0.64	0.19	0.10	0.18	-0.21	-0.29	0.06	-0.59	-0.67	-0.45	-0.57	-0.59	-0.20	-0.52
Mining and quarrying	-0.70	-0.70	-0.56	-0.88	-0.81	-0.26	-0.97	-0.91	-0.40	-0.99	-0.95	-0.98	-0.56	-0.37	-0.53	-0.78
Petrol and gas extraction, refining	-0.29	-0.03	-0.76	-0.30	-0.54	-0.67	-0.72	-0.58	-0.16	-0.74	-0.65	-0.39	-0.41	0.30	-0.38	-0.63
Electricity, gas and water supply	-0.71	0.57	-0.86	-0.52	-0.87	-0.13	-0.90	-0.87	0.42	-0.51	-0.82	-0.86	0.38	-0.15	-0.36	-0.79
Basic metal products	0.15	-0.37	0.00	-0.23	-0.09	-0.06	-0.42	-0.33	-0.01	-0.03	-0.57	0.13	0.20	-0.15	-0.06	-0.19
Mineral products	0.11	-0.07	0.03	0.04	0.36	0.06	-0.14	0.45	-0.18	0.04	0.26	-0.08	-0.12	0.00	0.12	0.24
Chemicals and pharmaceuticals	0.10	0.00	0.17	-0.67	-0.24	0.05	0.49	-0.23	0.15	-0.29	-0.52	-0.18	-0.07	0.05	0.04	0.22
Fabricated metal products	-0.02	0.06	0.13	-0.57	0.02	0.08	-0.31	0.51	-0.06	0.05	-0.10	0.13	0.16	0.00	0.11	0.23
Machinery and equipment	-0.03	0.17	0.50	-0.76	-0.19	0.04	-0.23	0.50	0.04	0.06	-0.53	0.19	0.12	0.11	0.23	0.45
Office machinery and computers	-0.16	-0.42	-0.26	-0.85	-0.46	-0.14	0.35	-0.29	-0.05	-0.48	-0.81	-0.14	-0.54	-0.02	-0.11	-0.40
Electrical and telecoms equipment	-0.08	0.01	0.14	-0.59	-0.18	0.06	0.28	0.04	0.02	-0.06	-0.12	0.23	0.22	-0.03	0.05	0.05
Transport equipment	0.08	-0.35	0.31	-0.91	0.15	0.17	-0.81	-0.05	-0.19	-0.03	-0.15	-0.05	0.23	-0.14	0.09	0.32
Aviation and space	-0.14	-0.17	0.05	-0.65	-0.15	0.11	-0.38	0.05	-0.25	-0.22	-0.41	-0.64	0.14	0.11	0.05	0.08
Instrument engineering	-0.16	0.06	0.11	-0.91	-0.49	-0.10	0.31	-0.06	0.11	-0.21	-0.55	-0.16	0.01	-0.05	-0.02	-0.08
Food, drink and tobacco	0.15	0.47	-0.06	-0.34	-0.01	0.13	0.44	-0.22	0.40	-0.11	-0.29	-0.12	-0.23	-0.09	0.07	0.21
Clothing and textiles	0.08	-0.17	-0.30	-0.09	0.05	-0.16	-0.32	0.44	-0.15	-0.15	0.34	-0.36	-0.42	-0.31	-0.05	-0.19
Wood	0.01	0.25	-0.27	-0.74	0.02	-0.20	-0.23	0.41	-0.45	0.13	0.51	0.79	0.63	-0.59	0.02	-0.11
Paper and printing	-0.06	-0.33	0.13	-0.32	-0.08	-0.10	-0.56	-0.02	-0.07	0.17	0.10	0.86	0.72	-0.22	0.09	0.24
Rubber and plastics	0.12	0.00	0.17	-0.54	-0.01	0.02	-0.23	0.34	-0.02	-0.11	-0.43	-0.05	0.04	-0.05	0.07	0.15
Other	0.20	0.23	0.06	-0.09	0.15	0.49	0.06	0.07	0.09	0.70	-0.48	-0.36	0.26	0.07	0.13	0.14
Total	0.04	0.05	0.07	-0.40	-0.06	0.03	0.18	0.07	0.04	-0.05	-0.18	0.13	0.12	-0.05	0.03	0.03

<sup>(a)</sup>  $(X-M)/(X+M)$ , where  $X$  = exports,  $M$  = imports  
Source: Eurostat

**Table 13 Unemployment rates in worst and least affected regions in the Union, 1987 and 1997**

1987			1997		
Regions	Rate	Rank	Regions	Rate	Rank
Ceuta y Melilla (E)	37.9	1	Réunion (F)	36.8	1
Andaluca (E)	31.1	2	Andaluca (E)	32.0	2
Extremadura (E)	25.9	3	Extremadura (E)	29.5	3
Canarias (E)	25.5	4	Guadeloupe (F)	29.3	4
Pais Vasco (E)	23.2	5	Martinique (F)	27.2	5
Cataluña (E)	21.8	6	Ceuta y Melilla (E)	26.4	6
Campania (I)	21.5	7	Campania (I)	26.1	7
Región de Murcia (E)	21.4	8	Calabria (I)	24.9	8
Comunidad Valenciana (E)	20.1	9	Sicilia (I)	24.0	9
Principado de Asturias (E)	19.7	10	Guyane (F)	22.4	10
<b>Highest 10</b>	<b>23.9</b>		<b>Highest 10</b>	<b>28.1</b>	
Cantabria (E)	18.8	11	Dessau (D)	21.5	11
Northern Ireland (UK)	18.6	12	Comunidad Valenciana (E)	21.4	12
Merseyside (UK)	18.2	13	Principado de Asturias (E)	21.2	13
Ireland (IRL)	18.1	14	Cantabria (E)	21.1	14
Calabria (I)	17.8	15	Canarias (E)	20.9	15
Castilla y León (E)	17.6	16	Magdeburg (D)	20.7	16
Dumfries and Galloway, Strathclyde (UK)	16.8	17	Basilicata (I)	20.6	17
Hainaut (B)	16.4	18	Sardegna (I)	20.5	18
Comunidad de Madrid (E)	16.3	19	Castilla y León (E)	19.9	19
Sardegna (I)	16.2	20	Halle (D)	19.9	20
Sicilia (I)	16.0	21	Galicia (E)	19.2	21
Basilicata (I)	15.9	22	Castilla-La Mancha (E)	19.1	22
Northumberland, Tyne and Wear (UK)	15.7	23	Mecklenburg-Vorpommern (D)	18.8	23
South Yorkshire (UK)	15.7	24	Pais Vasco (E)	18.8	24
Cleveland, Durham (UK)	15.3	25	Itä-Suomi (FIN)	18.7	25
<b>Highest 25</b>	<b>20.1</b>		<b>Highest 25</b>	<b>23.7</b>	
Ahvenanmaa/Åland (FIN)	1.0	1	Luxembourg (Grand-Duché) (L)	2.5	1
Stockholm (S)	1.3	2	Oberösterreich (A)	3.0	2
Uusimaa (FIN)	1.6	3	Berkshire, Buckinghamshire, Oxfordshire (UK)	3.2	3
Vorarlberg (A)	1.7	4	Centro (P)	3.4	4
Småland Med Öarna (S)	2.2	5	Niederösterreich (A)	3.4	5
Västsvrige (S)	2.4	6	Trentino-Alto Adige (I)	3.8	6
Luxembourg (Grand-Duché) (L)	2.5	7	Burgenland (A)	3.8	7
Kriti (EL)	2.7	8	Salzburg (A)	3.9	8
Östra Mellansverige (S)	2.8	9	Surrey, East-West Sussex (UK)	4.1	9
Oberösterreich (A)	2.8	10	Bedfordshire, Hertfordshire (UK)	4.1	10
<b>Lowest 10</b>	<b>2.2</b>		<b>Lowest 10</b>	<b>3.6</b>	
Stuttgart (D)	3.1	11	Utrecht (NL)	4.1	11
Sydsverige (S)	3.1	12	Vorarlberg (A)	4.1	12
Tübingen (D)	3.2	13	Valle d'Aosta (I)	4.1	13
Tirol (A)	3.2	14	Kriti (EL)	4.3	14
Salzburg (A)	3.2	15	Notio Aigaio (EL)	4.3	15
Ionia Nisia (EL)	3.3	16	Vlaams Brabant (B)	4.5	16
Niederösterreich (A)	3.4	17	Noord-Brabant (NL)	4.6	17
Mellersta Norrland (S)	3.5	18	Gelderland (NL)	4.6	18
Açores (P)	3.7	19	Hereford & Worcester, Warwickshire (UK)	4.6	19
Freiburg (D)	3.8	20	Zeeland (NL)	4.6	20
Schwaben (D)	3.9	21	Ahvenanmaa/Åland (FIN)	4.6	21
Norra Mellansverige (S)	4.0	22	Hampshire, Isle of Wight (UK)	4.7	22
Oberbayern (D)	4.1	23	Oberbayern (D)	4.8	23
Steiermark (A)	4.1	24	Veneto (I)	4.8	24
Kärnten (A)	4.1	25	Leicestershire, Northamptonshire (UK)	4.8	25
<b>Lowest 25</b>	<b>3.1</b>		<b>Lowest 25</b>	<b>4.2</b>	
<b>Other regions (except extreme 20)</b>	<b>9.2</b>		<b>Other regions (except extreme 20)</b>	<b>10.0</b>	
<b>Other regions (except extreme 50)</b>	<b>8.8</b>		<b>Other regions (except extreme 50)</b>	<b>9.7</b>	

\* 1987: no data for new German Länder and DOM (F); national figures for A, S, FIN  
Source: Eurostat; DGXVI calculations

**Table 14 Regions with highest unemployment, 1997**

NUTS-2 regions	Unemployment rates (%)						Employment rates (%)		
	Total	Female	Male	Youth	25+	Long-term	Total	Female	Male
Réunion (F)	36.8	41.0	33.7	57.8	33.1	-	-	-	-
Andalucía (E)	32.0	41.8	26.0	50.8	27.5	47.3	39.5	25.2	54.3
Extremadura (E)	29.5	41.4	23.1	43.9	26.6	41.9	41.8	24.9	58.2
Guadeloupe (F)	29.3	33.4	25.7	54.1	26.4	-	-	-	-
Martinique (F)	27.2	32.0	22.9	52.4	25.0	-	-	-	-
Ceuta y Melilla (E)	26.4	36.2	20.5	58.4	19.7	71.6	42.2	26.7	58.7
Campania (I)	26.1	34.1	21.9	64.9	19.2	79.3	38.8	23.5	54.3
Calabria (I)	24.9	34.3	20.0	62.6	19.5	67.6	38.2	22.8	53.9
Sicilia (I)	24.0	33.1	20.2	60.4	17.8	73.7	38.1	19.4	57.6
Guyane (F)	22.4	26.5	19.7	36.5	20.5	-	-	-	-
Dessau (D)	21.5	26.2	17.1	13.6	22.6	51.4	58.8	52.2	65.2
Comunidad Valenciana (E)	21.4	29.1	16.5	40.4	17.2	44.1	49.4	34.3	65.2
Principado de Asturias (E)	21.2	27.5	17.3	50.3	17.1	65.6	43.2	29.8	57.4
Cantabria (E)	21.1	28.9	16.1	45.1	17.0	64.3	45.9	32.0	60.0
Canarias (E)	20.9	26.3	17.4	39.0	17.2	48.9	47.6	34.5	61.1
Magdeburg (D)	20.7	24.3	17.5	12.6	21.9	52.2	59.3	54.6	63.8
Basilicata (I)	20.6	30.1	15.2	50.7	16.2	62.5	42.1	26.6	57.7
Sardegna (I)	20.5	29.3	15.9	51.0	15.3	68.4	43.1	26.0	60.5
Castilla y León (E)	19.9	30.3	14.1	43.8	16.3	52.5	47.7	30.1	65.0
Halle (D)	19.9	23.1	17.0	13.9	20.8	50.0	60.5	55.7	65.2
Galicia (E)	19.2	24.8	15.1	37.1	16.4	58.7	49.9	38.3	61.8
Castilla-La Mancha (E)	19.1	28.1	14.6	37.8	15.1	40.9	47.8	28.7	66.9
Mecklenburg-Vorpommern (D)	18.8	22.4	15.7	10.9	20.1	47.8	61.3	55.7	66.8
Pais Vasco (E)	18.8	26.0	14.0	39.4	15.8	61.2	49.7	36.5	62.9
Itä-Suomi (FIN)	18.7	15.7	21.3	38.4	15.9	24.5	54.7	53.5	55.8
<b>Highest 10</b>	<b>28.1</b>	<b>37.2</b>	<b>23.1</b>	<b>56.5</b>	<b>22.7</b>	<b>56.4</b>	<b>39.0</b>	<b>23.1</b>	<b>55.3</b>
<b>Highest 25</b>	<b>23.7</b>	<b>30.8</b>	<b>19.3</b>	<b>45.4</b>	<b>19.8</b>	<b>54.4</b>	<b>45.0</b>	<b>30.7</b>	<b>59.5</b>
<b>EUR15</b>	<b>10.7</b>	<b>12.2</b>	<b>9.5</b>	<b>20.9</b>	<b>9.1</b>	<b>49.0</b>	<b>60.9</b>	<b>50.9</b>	<b>70.9</b>

Unemployment as % labour force; employment as % population 15-64

F (DOM): 1996

Source: Eurostat; DGXVI calculations

**Table 15 Regions with lowest unemployment, 1997**

NUTS-2 regions	Unemployment rates (%)						Employment rates (%)		
	Total	Female	Male	Youth	25+	Long-term	Total	Female	Male
Luxembourg (Grand-Duché) (L)	2.5	3.6	1.8	7.2	2.0	34.6	60.3	45.6	74.8
Oberösterreich (A)	3.0	4.0	2.3	5.0	2.7	24.9	69.8	60.8	78.7
Berkshire, Buckinghamshire, Oxfordshire (UK)	3.2	2.7	3.6	5.7	2.7	31.8	80.0	71.7	87.7
Centro (P)	3.4	3.9	2.9	12.2	2.2	46.6	81.4	73.5	90.0
Niederösterreich (A)	3.4	4.4	2.7	5.0	3.1	36.0	69.6	61.1	77.8
Trentino-Alto Adige (I)	3.8	5.7	2.6	10.0	2.7	30.0	62.3	48.3	76.2
Burgenland (A)	3.8	5.2	2.7	5.7	3.5	26.9	66.2	56.9	75.2
Salzburg (A)	3.9	4.9	3.0	7.5	3.3	4.3	69.5	61.6	77.7
Surrey, East + West Sussex (UK)	4.1	3.5	4.6	7.1	3.6	38.4	77.3	71.0	83.8
Bedfordshire, Hertfordshire (UK)	4.1	3.6	4.4	7.6	3.5	35.1	77.2	69.8	84.4
Utrecht (NL)	4.1	5.4	3.1	6.8	3.7	29.2	72.2	61.2	83.4
Vorarlberg (A)	4.1	5.7	3.0	6.7	3.6	16.6	68.9	56.4	81.1
Valle d'Aosta (I)	4.1	5.3	3.3	11.2	3.2	37.0	61.9	51.5	71.9
Kriti (EL)	4.3	6.9	2.5	19.8	2.4	48.8	70.1	55.3	85.6
Notio Aigaio (EL)	4.3	7.2	2.7	15.5	2.5	43.0	61.7	41.3	82.8
Vlaams Brabant (B)	4.5	5.8	3.5	11.9	3.9	50.1	63.5	55.4	71.6
Noord-Brabant (NL)	4.6	6.1	3.5	7.4	4.0	49.7	68.3	56.0	80.0
Gelderland (NL)	4.6	6.1	3.5	7.4	4.1	44.1	68.0	55.8	80.0
Hereford, Worcester, Warwickshire (UK)	4.6	4.2	4.9	9.4	3.8	31.0	78.1	69.2	86.4
Zeeland (NL)	4.6	6.1	3.5	6.2	4.3	53.0	67.1	54.2	79.7
Ahvenanmaa/Åland (FIN)	4.6	4.1	4.9	15.8	2.9	9.7	75.8	63.5	82.6
Hampshire, Isle of Wight (UK)	4.7	3.9	5.4	8.6	4.0	36.4	74.7	67.0	82.5
Oberbayern (D)	4.8	4.6	5.0	5.7	4.7	37.6	71.4	62.9	79.8
Veneto (I)	4.8	7.4	3.1	10.9	3.7	37.7	59.7	46.1	73.4
Leicestershire, Northamptonshire (UK)	4.8	4.1	5.4	9.5	4.0	33.5	76.3	68.7	83.7
<b>Lowest 10</b>	<b>3.6</b>	<b>3.8</b>	<b>3.4</b>	<b>7.3</b>	<b>3.0</b>	<b>34.4</b>	<b>74.3</b>	<b>65.8</b>	<b>82.7</b>
<b>Lowest 25</b>	<b>4.2</b>	<b>4.8</b>	<b>3.8</b>	<b>8.1</b>	<b>3.6</b>	<b>37.5</b>	<b>70.7</b>	<b>60.7</b>	<b>80.5</b>
<b>EUR15</b>	<b>10.7</b>	<b>12.2</b>	<b>9.5</b>	<b>20.9</b>	<b>9.1</b>	<b>49.0</b>	<b>60.9</b>	<b>50.9</b>	<b>70.9</b>

Notes and source: see Table 14

**Table 16 Unemployment rates in Member States, 1987-97  
(ranked by 1997 unemployment)**

	E	FIN	I	F	EUR15	S	IRL	D	EL	B	UK	P	DK	NL	A	L
1985	22.2	6.3	9.5	9.8	-	3.1	18.0	7.2	7.8	11.3	11.5	8.9	7.9	10.2	-	3.0
1986	21.4	7.0	10.5	10.0	-	2.8	18.1	6.6	7.4	11.2	11.5	8.6	5.5	10.0	-	2.7
1987	20.8	5.2	10.2	10.3	-	2.5	18.1	6.3	7.4	11.0	11	7.0	5.8	9.9	-	2.5
1988	20.1	4.8	11.0	9.6	-	1.9	16.3	6.3	7.7	10.1	8.9	6.0	6.1	9.2	-	2.0
1989	17.4	3.8	10.0	9.3	-	1.9	14.9	5.7	6.7	7.2	7.4	4.8	7.6	8.5	-	1.7
1990	16.4	3.7	9.0	8.7	-	1.4	13.1	4.9	6.3	6.3	7.0	4.1	7.8	7.3	-	1.6
1991	16.0	7.0	8.7	9.0	8.2	2.7	14.6	5.3	6.9	6.1	8.6	3.6	8.5	5.7	3.8	1.5
1992	17.8	12.2	8.7	10.0	9.2	4.8	15.3	6.4	7.8	6.7	9.8	3.8	9.2	5.6	3.3	2.1
1993	22.3	17.9	10.3	11.2	10.5	8.6	15.7	7.6	8.8	8.1	10.5	5.3	10.9	6.3	4.0	2.3
1994	24.4	19.4	11.2	12.2	11.2	9.2	14.7	8.7	8.9	9.7	9.8	6.7	8.7	7.0	4.0	3.4
1995	23.1	16.9	11.9	11.3	10.7	8.7	12.2	8.2	9.1	9.4	8.7	7.3	7.4	7.0	3.9	2.8
1996	22.5	15.5	12.1	12.0	10.8	9.5	11.8	8.8	9.7	9.6	8.2	7.4	7.4	6.2	4.5	3.1
1997	21.1	14.8	12.3	12.0	10.7	10.4	10.1	9.8	9.6	8.9	7.1	6.7	5.7	5.2	4.4	2.5

Source: Eurostat, harmonised regional unemployment rates; DGXVI calculations

**Table 17 Employment by sector, 1986 and 1996**

	Share of employment (%)	Million employees		Employment change (%)
	1996	1996	1986	1986-96
Agriculture	5.3	7.6	10.8	-3.3
Manufacturing	27.8	39.6	43.6	-3.9
Market services	45.6	65.0	53.7	+11.4
Non-market services	21.2	30.2	28.9	+1.3
Total	100.0	142.5	137.0	+5.5

Source: Eurostat, National accounts

**Table 18 Demographic and labour force trends in the Union, 1985 to 2025**

	1985-90	1990-95	2000-2005 % point difference from baseline			2005-2025 % point difference from baseline		
			Baseline	Low	High	Baseline	Low	High
<i>Annual average % change in population</i>								
Total	0.3	0.4	0.3	-0.3	0.3	0.1	-0.3	0.3
of which:								
aged 0-14	-1.2	-0.4	-0.2	-0.9	1.1	-0.5	-0.7	0.6
aged 15-64	0.4	0.4	0.1	-0.1	0.1	-0.2	-0.2	0.3
aged 65+	1.7	1.5	1.3	-0.3	0.3	1.4	-0.3	0.2
<i>Annual average % change in labour force</i>								
Total	1.1	0.4	0.5	-1.0	0.8	-0.2	-0.3	0.5
of which:								
men	0.5	-0.1	0.2	-1.1	0.6	-0.2	-0.5	0.6
women	2.0	1.1	0.9	-0.9	0.9	-0.2	-0.4	0.5

*'Baseline', 'Low' and 'High' relate to variant projections (see text, Part I.3)*  
*Source: Eurostat*

**Table 19 Demographic and labour force trends in the Union, 1985 to 2025**

	1985-90	1990-95	2000-2005 Difference from baseline (millions)			2005-2025 Difference from baseline (millions)		
			Baseline	Low	High	Baseline	Low	High
<i>Change in population, millions</i>								
Total	5.3	7.8	4.9	-4.9	5.9	6.4	-16.4	18.6
of which:								
natural increase	3.0	2.6	1.6	-3.6	4.4	-3.0	-14.6	16.7
net inward migration	2.3	5.3	3.3	-1.3	1.5	9.4	-1.8	1.9
<i>Change in labour force, millions</i>								
Total	8.7	3.7	4.8	-8.5	7.5	-1.4	-9.4	16.0
of which:								
demographic change	5.2	4.5	0.9	-0.9	1.1	-6.6	-4.2	5.6
change in male activity	-1.4	-3.7	0.3	-4.6	2.7	0.8	-0.8	4.4
change in female activity	4.4	2.2	3.6	-3.4	4.1	3.9	-3.9	5.3
interaction effect	0.5	0.8	-0.1	0.3	-0.4	0.5	-0.5	0.8

*Note and source: see Table 18*

	B	DK	D	EL	E	F	IRL	I	NL	A	P	FIN	S	UK	EUR15	EUR11	EUR4
GDP per head, 1995 index	112	116	111	66	77	108	93	103	107	108	67	96	101	96	100	105	74
Gross RTD expenditure as % GDP, 1995 <sup>(a)</sup>	1.61	1.79	2.28	0.48	0.80	2.34	1.41	1.04	2.04	1.52	0.59	2.37	3.45	2.06	1.92	2.05	0.82
EUR15=100	84	93	119	25	42	122	73	54	106	79	31	123	180	107	100	107	43
Business RTD expenditure as % GDP, 1995 <sup>(b)</sup>	1.09	1.10	1.51	0.13	0.37	1.44	0.99	0.56	1.09	0.85	0.12	1.50	2.68	1.35	1.22	1.30	0.35
EUR15=100	89	90	124	11	30	118	81	46	89	70	10	123	220	111	100	107	29
BERD as % GERD, 1995	67.7	61.5	66.2	27.1	46.3	61.5	70.2	53.8	53.4	55.9	20.3	63.3	77.7	65.5	63.5	64	45
RTD financing as % total govt. expenditure, 1994 <sup>(c)</sup>	1.85	1.58	3.71	0.57	1.9	4.61	0.86	1.67	2.65	2.52	1.76	2.87	3.15	2.19	2.88	2.93	1.62
Total RTD personnel as % labour force, 1995	1.23	1.71	1.52	0.83	0.73	1.58	1.14	0.86	1.47	1.18	0.53	1.97	1.95	1.22	1.26	1.37	0.73
EUR15=100	98	136	121	66	58	125	90	68	117	94	42	156	155	97	100	109	58
Private RTD personnel as % labour force 1995	0.65	0.92	0.82	0.09	0.21	0.80	0.53	0.33	0.59	0.49	0.16	1.00	1.08	0.68	0.60	0.69	0.20
EUR15=100	108	153	137	15	35	133	88	55	98	82	27	167	180	113	100	115	33
European patent applications per million people, 1995	94	120	173	4	12	96	37	46	117	100	2	175	200	78	93	109	11

*EUR15 excluding Luxemburg. EEA data for total and private RTD personnel*  
<sup>(a)</sup> DK, EL, A 1993; NL 1994  
<sup>(b)</sup> EL, A 1993  
<sup>(c)</sup> EL, P, EUR15 1993  
 Source: Eurostat

**Table 21 RTD basic indicators - regional differences**

	Germany <sup>(a)</sup> 1993		France <sup>(a)</sup> 1994		Italy 1994		Spain 1994		Portugal 1995		Greece 1993		EUR11 1995	EUR4 1995
	Obj1	Other	GERD<	GERD>	Obj1	Other	Obj1	Other	Rest	Lisbon	Rest	Attiki		
<i>Basic data</i>														
GERD (ECU million)														
per head ('000s ECU)	179	548	21	94	67	211	44	151	30	81	26	57	<i>384</i>	<i>83</i>
as % GDP	1.78	2.46	1.25	3.49	0.64	1.20	0.50	1.18	0.46	0.81	0.36	0.67	2.05	0.82
R&D personnel														
as % labour force	-	-	0.65	2.16	0.49	0.97	0.54	1.20	0.38	0.80	0.63	0.96	1.37	0.73
<i>RTD in public sector</i>														
GOVERD														
per head ('000s ECU)	52	78	3	15	12	46	7	34	3	31	8	18	61	16
as % GDP	0.52	0.35	0.20	0.56	0.11	0.26	0.08	0.27	0.05	0.31	0.12	0.21	0.33	0.16
HERD														
as % GDP	0.62	0.41	0.11	0.29	0.33	0.25	0.28	0.24	0.20	0.21	0.17	0.24	0.41	0.24
R&D personnel in GOV and HES														
as % total	-	-	31	30	83	57	86	6	67	72	88	81	49	73
<i>RTD in private sector</i>														
BERD (ECU million)														
as % GDP	0.64	1.70	0.93	2.60	0.19	0.69	0.13	0.66	0.10	0.14	0.07	0.22	<i>1.30</i>	<i>0.35</i>
as % GERD	36	69	75	75	30	57	27	56	23	18	20	33	64	45
R&D personnel in private sector														
as % labour force	-	-	0.46	1.50	0.09	0.42	0.08	0.43	0.13	0.23	0.07	0.18	<i>0.69</i>	<i>0.20</i>
as % total R&D personnel	-	-	71	69	17	43	14	36	33	28	12	19	51	27
No. of European patent applications per million people	23	176	65	172	7	61	5	20	1	2	2	8	108	11

*Figures in italics are estimates*

*ECU: current exchange rates*

*GERD - Gross domestic expenditure on R&D*

*GOVERD - R&D expenditure in the GOV*

*HERD - R&D expenditure in the HES*

*BERD - R&D expenditure in the business enterprise sector*

*GOV - Government sector*

*HES - Higher education sector*

*EUR11 excludes Luxembourg for which data are not available*

<sup>(a)</sup> *Statistics for regional RTD expenditure and personnel in higher education are not available*

<sup>(b)</sup> *The first column shows the averages of French regions where GERD as % of GDP is less than the average for the country (2.38%)*

*Source: Eurostat*

**Table 22 FDI flows between the EU and other major economies, 1987-96**

	Sum			Shares (%)		
	1987-96	1987-91	1992-96	1987-96	1987-91	1992-96
<i>Outward flows</i>						
ACP	-5336	-1607	-3729	1.8	1.1	2.4
ex-Comecon	-21590	-1744	-19846	7.3	1.2	12.8
EFTA7	-31336	-12071	-19265	10.5	8.4	12.5
Japan	-4333	-2169	-2164	1.5	1.5	1.4
OPEC	-9093	-3628	-5465	3.1	2.5	3.5
USA	-152342	-86445	-65897	51.2	60.5	42.7
Non-EU total	-297351	-142891	-154460	100.0	100.0	100.0
<i>Inward flows</i>						
ACP	1304	321	983	0.5	0.3	0.7
ex-Comecon	1781	592	1189	0.7	0.5	0.9
EFTA7	67147	38860	28287	26.0	30.8	21.5
Japan	23004	15598	7406	8.9	12.4	5.6
OPEC	3680	1662	2018	1.4	1.3	1.5
USA	103476	29323	74153	40.1	23.3	56.3
Non-EU total	257827	126109	131718	100.0	100.0	100.0

From 1992 EUR15, before 1992 EUR12 excluding A, FIN, S

From 1994 EFTA 4

ACP = African, Caribbean and Pacific countries

Data on flows with ex-Comecon are available only until 1991. From 1992 onwards the value has been calculated from data for the CIS and the Central and Eastern European countries minus Yugoslavia and Croatia. The figures contain data for Slovenia and Bosnia-Herzegovina which were not part of Comecon.

Source: Eurostat

**Table 23 Cumulative outward flows of foreign direct investment to non-EU countries, 1987-96**

	ECU million			Shares (%)		
	1987-96	1987-91	1992-96	1987-96	1987-91	1992-96
B/L	13,558	5,074	8,484	4.3	3.2	5.4
DK	6,050	2,163	3,887	1.9	1.4	2.5
D	62,631	25,995	36,636	19.9	16.4	23.3
E	11,959	3,043	8,916	3.8	1.9	5.7
F	60,872	28,311	32,561	19.3	17.9	20.7
EL	97	17	80	0.0	0.0	0.1
IRL	9,431	2,538	6,893	3.0	1.6	4.4
I	12,958	6,790	6,168	4.1	4.3	3.9
NL	45,232	19,077	26,155	14.3	12.0	16.7
A	5,863	2,700	3,163	1.9	1.7	2.0
P	790	109	681	0.3	0.1	0.4
FIN	6,974	5,188	1,786	2.2	3.3	1.1
S	12,055	7,555	4,500	3.8	4.8	2.9
UK	66,872	49,779	17,093	21.2	31.4	10.9
<b>EUR12/15</b>	<b>315,342</b>	<b>158,339</b>	<b>157,003</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
USA	94,373	31,107	63,266	-	-	-
Japan	179,463	116,462	63,001	-	-	-

Figures from 1984 to 1991 are for EU12.

Figures from 1992 to 1996 are for EU15.

Figures for all countries except Austria are the sum of equity and other capital (excluding reinvested earnings).

Figures for Austria are equity capital only.

Figures for France include short-term credits from 1994.

Figures for Ireland and Greece are estimates or based on partner-country declarations

Source: Eurostat

**Table 24 Cumulative inward flows of foreign direct investment from non-EU countries, 1987-96**

	ECU million			Shares (%)		
	1987-96	1987-91	1992-96	1987-96	1987-91	1992-96
B/L	18,140	6,972	11,168	7.4	6.0	8.6
DK	5,324	2,417	2,907	2.2	2.1	2.2
D	13,235	4,129	9,106	5.4	3.5	7.0
E	18,521	10,359	8,162	7.5	8.9	6.3
F	36,883	13,621	23,262	15.0	11.7	17.9
EL	804	394	410	0.3	0.3	0.3
IRL	4,908	3,217	1,691	2.0	2.8	1.3
I	13,063	9,407	3,656	5.3	8.0	2.8
NL	25,283	10,135	15,148	10.3	8.7	11.7
A	1,752	416	1,336	0.7	0.4	1.0
P	2,756	1,779	977	1.1	1.5	0.8
FIN	1,321	788	533	0.5	0.7	0.4
S	15,680	2,953	12,727	6.4	2.5	9.8
UK	88,868	50,330	38,538	36.0	43.0	29.7
<b>EUR12/15</b>	<b>246,538</b>	<b>116,917</b>	<b>129,621</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
USA	205,387	114,913	90,474	-	-	-
Japan	2,306	263	2,043	-	-	-

Notes and source: see Table 23

**Table 25 Foreign direct investment, cumulative total, 1987-96**

	Intra-EU (Ecu million)		Extra-EU (Ecu million)		NET			Intra-EU as % GDP		Extra-EU as % GDP	
	in	out	in	out	intra-EU	total	ECU per head	in	out	in	out
B/L	52,601	37,588	18,140	13,558	15,013	19,595	1,850	3.0	2.1	1.0	0.8
DK	8,430	10,696	5,324	6,050	-2,266	-2,992	-569	0.8	1.0	0.5	0.6
D	21,354	90,746	13,235	62,631	-69,392	-118,788	-1,450	0.2	0.6	0.1	0.4
E	46,143	9,284	18,521	11,959	36,859	43,421	1,105	1.2	0.2	0.5	0.3
F	71,347	93,203	36,883	60,872	-21,856	-45,845	-785	0.7	0.9	0.4	0.6
EL	2,623	-25	804	97	2,648	3,355	319	0.4	0.0	0.1	0.0
IRL	16,409	6,489	4,908	9,431	9,920	5,397	1,499	4.2	1.6	1.2	2.4
I	19,337	29,398	13,063	12,958	-10,061	-9,956	-175	0.2	0.4	0.2	0.2
NL	30,661	60,549	25,283	45,232	-29,888	-49,837	-3,208	1.2	2.5	1.0	1.8
A	6,649	4,406	1,752	5,863	2,243	-1,868	-231	0.5	0.3	0.1	0.4
P	8,576	1,837	2,756	790	6,739	8,705	876	1.4	0.3	0.4	0.1
FIN	3,120	11,093	1,321	6,974	-7,973	-13,626	-2,660	0.3	1.2	0.1	0.8
S	12,678	28,072	15,680	12,055	-15,394	-11,769	-1331	0.7	1.6	0.9	0.7
UK	32,964	41,813	88,868	66,872	-8,849	13,147	223	0.4	0.5	1.1	0.8
<b>EUR12/15</b>	<b>332,892</b>	<b>425,149</b>	<b>246,538</b>	<b>315,342</b>	<b>-92,257</b>	<b>-161,061</b>	<b>-432</b>	<b>0.6</b>	<b>0.8</b>	<b>0.4</b>	<b>0.6</b>

*Population data used in calculation are for 1996; GDP data are averages for 1987 to 1996 inclusive.*

**Table 26 Cumulative outward flows of foreign direct investment to EU countries, 1987-96**

	ECU million			Shares (%)		
	1987-96	1987-91	1992-96	1987-96	1987-91	1992-96
B/L	37,588	16,022	21,566	8.8	9.0	8.7
DK	10,696	4,115	6,581	2.5	2.3	2.7
D	90,746	34,360	56,386	21.3	19.4	22.8
E	9,284	5,019	4,265	2.2	2.8	1.7
F	93,203	44,250	48,953	21.9	24.9	19.8
EL	-25	18	-43	0.0	0.0	0.0
IRL	6,489	1,792	4,697	1.5	1.0	1.9
I	29,398	11,668	17,730	6.9	6.6	7.2
NL	60,549	21,147	39,402	14.2	11.9	15.9
A	4,406	1,930	2,476	1.0	1.1	1.0
P	1,837	529	1,308	0.4	0.3	0.5
FIN	11,093	2,962	8,131	2.6	1.7	3.3
S	28,072	21,901	6,171	6.6	12.3	2.5
UK	41,813	11,825	29,988	9.8	6.7	12.1
<b>EUR12/15</b>	<b>425,149</b>	<b>177,538</b>	<b>247,611</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
USA	100,309	24,894	75,415	-	-	-
Japan	43,034	31,956	11,078	-	-	-

Notes and source: see Table 23

**Table 27 Cumulative inward flows of foreign direct investment from EU countries, 1987-96**

	ECU million			Shares (%)		
	1987-96	1987-91	1992-96	1987-96	1987-91	1992-96
B/L	52,601	19,687	32,914	15.8	13.6	17.4
DK	8,430	1,198	7,232	2.5	0.8	3.8
D	21,354	6,913	14,441	6.4	4.8	7.7
E	46,143	24,679	21,464	13.9	17.1	11.4
F	71,347	21,229	50,118	21.4	14.7	26.6
EL	2,623	928	1,695	0.8	0.6	0.9
IRL	16,409	7,850	8,559	4.9	5.4	4.5
I	19,337	9,000	10,337	5.8	6.2	5.5
NL	30,661	12,354	18,307	9.2	8.6	9.7
A	6,649	1,799	4,850	2.0	1.2	2.6
P	8,576	4,650	3,926	2.6	3.2	2.1
FIN	3,120	558	2,562	0.9	0.4	1.4
S	12,678	5,939	6,739	3.8	4.1	3.6
UK	32,964	27,455	5,509	9.9	19.0	2.9
<b>EUR12/15</b>	<b>332,892</b>	<b>144,239</b>	<b>188,653</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
USA	226,543	126,236	100,307	-	-	-
Japan	4,370	1,861	2,509	-	-	-

Notes and source: see Table 23

**Table 28 Economic indicators in assisted regions, 1988-97**

Regional group	Employment change (% pa)		Unemployment rate (%) <sup>(a)</sup>			GDP per head (PPS), EUR15=100					
	1988-93	1993-97	1988 <sup>(b)</sup>	1993	1997	1988	1993	1994	1995	1996	Average 1994-96
Objective 1 (89-99)	0.1	0.4	15.6	16.3	17.2	63	68	69	69	69	69
Objective 1 (94-99)	-	0.3	-	14.9	16.2	-	66	68	68	68	68
Objective 2 (94-99)	0.1	0.4	12.5	12.4	11.9	94	96	96	97	96	97
Objective 5b (94-99)	0.5	-0.2	7.3	7.0	7.8	82	85	86	86	85	85
Objective 6 (95-99)	-	0.7	-	19.9	18.4	87	77	77	81	77	78
Others (94-99)	0.1	0.1	8.5	8.2	8.1	114	116	116	116	116	116
EUR15 excl. new Länder	0.1	0.2	9.0	-	-	100	-	-	-	-	-
EUR15	-	0.2	-	10.7	10.7	-	100	100	100	100	100

<sup>(a)</sup> EUR15: Eurostat, harmonised unemployment rates

<sup>(b)</sup> Figures by Objective are for EUR12

Source: Eurostat; DGXVI estimates

**Table 29 GDP per head (in PPS) in Objective 1 regions, 1988-96**

Region <sup>(a)</sup>	1988	1989	1990	1991	1992	1993	1993	1994	1995	1996
Hainaut	77	76	76	76	78	82	84	82	81	81
Obj. 1 Belgique-België	-	-	-	-	-	-	84	82	81	81
Berlin-Ost, Stadt	-	-	-	47	58	72	73	80	81	81
Brandenburg	-	-	-	39	48	57	59	66	66	67
Mecklenburg-Vorpommern	-	-	-	37	45	52	53	60	61	61
Sachsen	-	-	-	36	44	53	54	61	63	64
Sachsen-Anhalt	-	-	-	36	45	54	55	61	61	61
Thüringen	-	-	-	32	43	52	53	60	60	61
Obj. 1 Deutschland	-	-	-	37	48	58	66	63	64	65
Anatoliki Makedonia, Thraki	52	53	58	53	55	56	57	59	60	61
Kentriki Makedonia	58	58	57	58	61	63	64	65	66	67
Dytiki Makedonia	63	63	61	61	59	58	60	60	61	62
Thessalia	54	57	54	56	56	57	58	60	61	63
Ipeiros	43	42	39	40	41	42	43	43	43	44
Ionia Nisia	55	54	52	53	55	58	59	60	61	62
Dytiki Ellada	48	50	48	50	51	53	55	56	57	58
Stereia Ellada	72	72	68	68	64	64	66	65	65	65
Peloponnisos	58	57	55	56	56	56	57	58	58	58
Attiki	61	62	61	62	66	70	72	73	75	77
Voreio Aigaio	44	41	41	43	45	47	48	49	50	52
Notio Aigaio	68	67	65	66	68	71	73	74	75	75
Kriti	57	64	61	62	64	67	68	71	72	72
Obj. 1 Ellada	58	59	57	58	60	63	64	65	66	68
Galicia	57	57	56	58	57	60	62	61	63	63
Principado de Asturias	70	70	68	70	69	72	74	73	74	74
Cantabria	72	74	73	74	74	75	76	76	77	77
Castilla y León	67	66	65	67	66	72	74	73	75	76
Castilla-La Mancha	60	61	62	63	62	65	67	66	65	66
Extremadura	49	48	48	50	50	55	56	56	54	55
Comunidad Valenciana	72	73	75	77	76	75	76	75	74	74
Andalucía	55	54	57	59	57	57	58	58	57	57
Región de Murcia	66	67	70	71	69	68	70	69	68	67
Ceuta y Melilla (E)	64	63	63	66	63	67	69	68	74	72
Canarias	73	72	71	72	73	74	76	75	75	74
Obj. 1 España	62	62	63	65	63	65	66	66	66	66
Corse	78	76	76	76	76	82	84	82	84	82
Guadeloupe	37	37	37	37	39	40	41	40	-	-
Martinique	51	50	50	52	52	53	54	54	-	-
Guyane	49	51	53	54	52	50	51	48	-	-
Reunion	43	43	45	47	48	46	47	46	-	-
Obj. 1 France	49	49	49	50	51	51	52	52	52	51
Ireland	64	66	71	72	76	81	83	91	97	97
Abruzzo	87	87	89	89	90	87	87	89	90	90
Molise	78	76	76	76	76	74	75	77	77	79
Campania	68	68	69	68	68	66	68	67	66	66
Puglia	73	71	71	72	71	69	70	72	71	71
Basilicata	64	62	63	63	64	64	66	67	68	69
Calabria	57	59	56	59	58	59	60	59	60	59
Sicilia	66	64	67	69	69	68	69	67	66	66
Sardegna	73	72	73	76	77	76	78	76	74	73
Obj. 1 Italia	69	68	69	70	70	68	70	68	67	67
Flevoland	73	75	76	74	72	73	75	78	77	75
Obj. 1 Nederland	-	-	-	-	-	-	75	78	77	75
Burgenland	62	61	64	65	65	70	72	72	70	71
Obj. 1 Österreich	-	-	-	-	-	-	72	72	70	71
Norte	54	57	52	53	56	58	60	62	62	62
Centro	45	45	48	49	52	54	55	58	60	61
Lisboa e Vale do Tejo	84	86	78	82	81	85	87	89	89	89
Alentejo	39	40	54	51	50	53	54	56	58	60
Algarve	56	54	63	65	69	69	71	70	70	71
Açores	43	45	43	44	46	48	49	50	50	50
Madeira	43	45	41	45	47	49	51	52	55	54
Obj. 1 Portugal	61	63	60	62	63	66	68	70	70	70
Merseyside	80	77	74	70	71	74	75	74	71	73
Highlands, Islands	83	77	80	81	80	79	81	81	78	80
Northern Ireland	76	75	74	75	76	78	80	80	79	81
Obj. 1 United Kingdom	76	75	74	75	76	78	80	78	76	78
EUR15	100	100	100	100	100	100	100	100	100	100
Total Objective 1 (89-93) <sup>(b)</sup>	63	64	64	65	65	67	68	69	69	69
Total Objective 1 (1994-99) <sup>(c)</sup>	-	-	-	-	-	-	66	68	68	68

The period is split into two subperiods to correspond with the two programming periods, 1989-93 and 1994 on. In each case, the year immediately before the programming period is shown as the basis for assessing changes over the period. The figures in italics are for regions which did not have Objective 1 status during this period. These are excluded from the total for Objective 1 regions and from the country totals. For the first period, EUR15 excludes the new German Länder throughout.

<sup>(a)</sup> Only regions wholly eligible for Objective 1

<sup>(b)</sup> Only regions with Objective 1 status throughout the period

<sup>(c)</sup> Regions with Objective 1 status during the second programming period

Source: Eurostat

Table 30 Unemployment rates in Objective 1 regions, 1988-97

Region <sup>(a)</sup>	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Change 1988-93	Change 1993-97
Hainaut	15.4	11.9	10.9	10.7	11.8	14.0	15.5	15.9	15.8	15.4	-1.4	1.4
Obj. 1 Belgique-België	-	-	-	-	-	14.0	15.5	15.9	15.8	15.4	-1.4	1.4
Berlin-Ost, Stadt	-	-	-	9.7	14.0	10.9	11.1	9.4	11.2	12.7	-	1.8
Brandenburg	-	-	-	9.1	13.9	14.9	15.2	14.3	15.5	17.2	-	2.3
Mecklenburg-Vorpommern	-	-	-	12.0	17.7	17.6	16.9	15.5	16.8	18.8	-	1.2
Sachsen	-	-	-	8.6	13.9	14.8	15.8	14.1	15.3	17.2	-	2.4
Sachsen-Anhalt	-	-	-	9.9	15.7	17.4	18.2	16.3	18.0	20.6	-	3.2
Thüringen	-	-	-	9.9	15.4	15.9	16.0	15.1	16.0	17.6	-	1.7
Obj. 1 Deutschland	-	-	-	9.8	14.9	15.4	15.9	14.4	15.7	17.6	-	2.2
Anatoliki Makedonia, Thraki	9.0	6.7	5.1	4.8	6.9	6.6	7.4	9.2	9.6	8.3	-2.4	1.7
Kentriki Makedonia	6.8	6.6	5.7	5.5	6.4	7.9	8.2	9.1	8.9	9.2	1.1	1.3
Dytiki Makedonia	6.0	5.7	9.0	7.2	7.4	9.8	9.1	13.2	16.3	13.8	3.8	4.0
Thessalia	6.9	6.5	7.0	6.2	7.3	7.2	6.9	7.6	7.6	7.5	0.3	0.3
Ipeiros	5.0	4.0	2.8	8.8	7.4	7.6	8.0	7.2	11.2	10.5	2.6	2.9
Ionia Nisia	3.4	2.8	3.1	3.5	2.5	3.8	3.4	5.3	5.5	6.2	0.4	2.4
Dytiki Ellada	7.2	7.2	6.9	7.8	8.6	9.4	10.5	8.2	8.6	7.9	2.2	-1.5
Stereia Ellada	6.9	5.9	5.8	6.3	10.8	9.5	10.6	9.2	10.3	12.0	2.6	2.5
Peloponnisos	5.8	4.8	5.2	5.0	7.3	5.8	6.3	6.0	6.4	7.5	0.0	1.7
Attiki	10.0	8.5	7.9	8.9	9.7	11.1	11.1	11.0	11.9	11.6	1.1	0.5
Voreio Aigaio	5.4	5.9	4.2	7.9	4.8	4.3	7.0	4.9	7.1	7.1	-1.1	2.8
Notio Aigaio	5.2	4.4	4.3	3.2	3.5	4.5	3.5	4.8	4.9	4.3	-0.7	-0.2
Kriti	3.5	2.4	2.2	3.6	3.3	3.5	3.8	4.1	3.4	4.3	0.0	0.8
Obj. 1 Ellada	7.7	6.7	6.3	6.9	7.8	8.6	8.8	9.1	9.7	8.6	0.9	1.0
Galicia	13.2	12.5	11.9	12.3	16.2	17.6	19.7	17.4	19.2	19.2	4.4	1.6
Principado de Asturias	20.2	17.4	17.4	16.1	17.7	20.4	22.5	21.2	22.5	21.2	0.2	0.8
Cantabria	21.8	17.6	16.9	15.4	16.3	19.9	24.4	21.7	24.8	21.1	-1.9	1.2
Castilla y León	17.8	17.4	15.5	14.5	17.3	20.0	21.7	20.6	20.5	19.9	2.2	-0.1
Castilla-La Mancha	16.6	14.8	13.3	13.6	15.3	19.5	20.7	20.7	20.2	19.1	2.9	-0.4
Extremadura	27.1	26.8	25.4	24.2	26.3	30.3	32.3	30.9	30.5	29.5	3.2	-0.8
Comunidad Valenciana	18.3	15.3	14.1	15.9	18.7	23.9	24.7	22.6	21.7	21.4	5.6	-2.5
Andalucía	29.2	27.2	25.9	24.7	27.0	32.4	34.7	33.8	32.8	32.0	3.2	-0.4
Región de Murcia	17.6	16.2	15.8	16.5	19.4	24.5	25.1	22.6	24.5	18.3	6.9	-6.2
Ceuta y Melilla	35.4	31.7	29.8	29.7	25.5	22.9	27.9	33.5	27.3	26.4	-12.5	3.5
Canarias	22.5	22.5	23.1	24.4	24.7	27.9	28.3	24.0	22.0	20.9	5.4	-7.0
Obj. 1 España (1989-93)	21.3	19.8	18.7	18.7	21.1	25.2	26.9	25.4	25.1	24.2	3.9	-1.0
Obj. 1 España (1994-99)	-	-	-	-	-	25.1	26.9	25.3	25.1	24.1	-	-1.0
Corse	10.6	9.4	9.7	11.3	10.8	11.9	12.5	11.0	14.7	15.2	1.3	3.3
Guadeloupe	-	-	31.1	-	-	na	24.0	26.1	29.3	-	-	5.3
Martinique	-	-	32.1	-	-	na	26.2	26.0	27.2	-	-	1.0
Guyane	-	-	24.0	-	-	na	18.2	23.0	22.4	-	-	4.2
Réunion	-	-	36.9	-	-	na	31.7	34.3	36.8	-	-	5.1
Obj. 1 France (excl. DOMs)	10.6	9.4	9.7	11.3	10.8	11.9	12.5	11.0	14.7	15.2	1.3	3.3
Obj. 1 FRANCE <sup>(b)</sup>	-	-	-	-	-	25.1	25.2	26.6	29.0	29.1	-	3.9
Ireland	16.3	14.9	13.1	14.8	15.3	15.7	14.7	12.2	11.8	10.1	-0.6	-5.6
Abruzzo	9.3	9.5	9.0	8.0	6.9	9.2	9.4	8.9	9.9	8.8	-0.1	-0.4
Moise	12.4	12.1	10.7	12.8	7.0	13.3	17.2	17.3	17.8	17.2	0.9	3.9
Campania	23.0	20.8	17.7	17.8	16.0	19.5	22.7	25.6	25.5	26.1	-3.5	6.6
Puglia	15.7	13.8	12.9	13.2	12.6	14.1	14.7	15.8	17.9	18.3	-1.6	4.2
Basilicata	21.5	18.9	19.0	17.0	14.7	13.1	16.2	18.9	19.4	20.6	-8.4	7.5
Calabria	22.6	23.2	20.1	18.6	16.8	21.2	21.8	23.7	25.0	24.9	-1.4	3.7
Sicilia	18.6	20.0	19.3	18.7	17.1	18.1	21.6	23.1	24.0	24.0	-0.5	5.9
Sardegna	18.4	17.6	16.8	15.7	15.2	19.6	20.0	20.6	21.8	20.5	1.2	0.9
Obj. 1 Italia	19.1	18.4	16.7	16.3	14.8	17.3	19.4	21.1	21.9	22.0	-1.8	4.7
Fievoland	7.9	8.7	8.2	5.7	6.2	5.9	6.7	8.5	6.2	5.1	-2.0	-0.8
Obj. 1 Nederland	-	-	-	-	-	5.9	6.7	8.5	6.2	5.1	-	-0.8
Burgenland	-	-	-	3.1	2.4	2.8	2.8	2.8	3.7	3.8	-	1.0
Obj. 1 Österreich	-	-	-	-	-	2.8	2.8	2.8	3.7	3.8	-	1.0
Norte	3.6	2.9	2.6	2.7	3.1	4.5	5.8	6.5	7.0	6.9	0.9	2.4
Centro	3.7	2.9	2.0	2.3	2.5	3.6	4.4	4.0	4.1	3.4	-0.1	-0.2
Lisboa e Vale do Tejo	8.8	6.9	5.8	4.4	4.8	6.5	8.3	9.4	8.9	7.9	-2.3	1.4
Alentejo	14.6	11.6	9.8	9.1	7.5	8.8	11.4	11.8	12.3	10.4	-5.8	1.6
Algarve	5.5	3.1	3.8	3.9	2.8	5.1	6.8	6.6	9.1	8.2	-0.4	3.1
Açores	2.2	2.5	3.0	3.7	3.4	5.3	6.6	8.1	7.2	5.4	3.1	0.1
Madeira	4.8	5.5	5.0	3.0	3.0	3.7	4.6	4.8	5.5	5.4	-1.1	1.7
Obj. 1 Portugal	6.0	4.8	4.1	3.6	3.8	5.3	6.7	7.3	7.4	6.7	-0.7	1.4
Merseyside	15.7	15.1	14.4	14.9	15.2	15.0	14.4	13.3	11.6	12.1	-0.7	-2.9
Highlands, Islands	12.8	10.9	9.8	8.3	8.5	12.4	12.1	10.5	8.1	8.4	-0.4	-4.0
Northern Ireland	17.1	17.7	17.3	16.0	15.5	15.1	14.5	12.9	11.4	10.3	-2.0	-4.8
Obj. 1 UK (1989-93)	17.1	17.7	17.3	16.0	15.5	15.1	-	-	-	-	-2.0	-
Obj. 1 UK (1994-99)	-	-	-	-	-	14.8	14.2	12.8	11.2	10.9	-	-3.9
EUR15, excl. new Länder	9.0	8.3	7.7	8.1	-	-	-	-	-	-	1.5	-
EUR15	-	-	-	8.2	9.2	10.7	11.2	10.7	10.8	10.7	-	0.0
Total Obj. 1 (1989-99) <sup>(c)</sup>	15.6	14.5	13.5	13.3	13.9	16.3	17.6	17.5	17.7	17.2	0.7	0.9
Total Obj. 1 (1994-99) <sup>(d)</sup>	-	-	-	-	-	14.9	16.2	15.9	16.3	16.2	-	1.4

See Note to Table 29. Abruzzo, in Italy, became no longer eligible for Objective 1 status from 1997 on. It is included in the total for Italy and the EU for this year for the sake of continuity.

<sup>(a)</sup> Only regions wholly eligible for Objective 1

<sup>(b)</sup> No data for DOMs in 1997; total for 1997 calculated on the basis of 1996 data.

<sup>(c)</sup> Regions with Objective 1 status throughout the period (except Abruzzo).

<sup>(d)</sup> Regions with Objective 1 status during the second programming period.

Source: Eurostat; DGXVI estimates

**Table 31 Employment rates in Objective 1 regions, 1988-97**

Region <sup>(a)</sup>	Employment rate (%) <sup>(b)</sup>		
	1988	1993	1997
Hainaut	48.0	49.2	49.8
Obj. 1 Belgique-België	-	49.2	49.8
Berlin-Ost, Stadt	-	-	-
Brandenburg	-	62.2	62.8
Mecklenburg-Vorpommern	-	62.7	61.3
Sachsen	-	60.9	62.7
Sachsen-Anhalt	-	61.6	59.6
Thüringen	-	61.6	63.0
Obj. 1 Deutschland	-	61.8	62.0
Anatoliki Makedonia, Thraki	62.8	64.9	62.2
Kentriki Makedonia	56.4	53.5	56.0
Dytiki Makedonia	57.6	54.3	53.6
Thessalia	59.1	57.9	60.6
Ipeiros	61.5	56.0	55.7
Ionia Nisia	71.2	64.3	68.5
Dytiki Ellada	65.9	58.9	59.9
Sterea Ellada	59.2	54.9	55.6
Peloponnisos	72.0	66.2	66.2
Attiki	50.1	50.7	52.4
Voreio Aigaio	55.2	52.5	52.5
Notio Aigaio	57.5	56.4	61.7
Kriti	70.9	67.9	70.1
Obj. 1 Ellada	57.1	55.2	56.7
Galicia	56.8	51.9	49.9
Principado de Asturias	47.0	44.5	43.2
Cantabria	45.4	46.9	45.9
Castilla y León	47.7	47.0	47.7
Castilla-La Mancha	47.6	46.2	47.8
Extremadura	41.2	40.1	41.8
Comunidad Valenciana	49.9	46.9	49.4
Andalucia	39.5	37.6	39.5
Región de Murcia	47.8	45.8	48.6
Ceuta y Melilla	36.9	39.8	42.2
Canarias	44.3	41.0	47.6
Obj. 1 España	46.1	43.8	45.2
Corse	44.7	48.5	38.9
Guadeloupe	-	-	-
Martinique	-	-	-
Guyane	-	-	-
Réunion	-	-	-
Obj. 1 France, excl. DOM	44.7	48.5	38.9
Ireland	51.5	52.7	57.7
Abruzzo	56.0	53.7	52.3
Molise	59.3	52.8	49.6
Campania	45.0	42.2	38.8
Puglia	47.1	44.6	41.3
Basilicata	48.8	45.6	42.1
Calabria	44.7	42.9	38.2
Sicilia	44.7	42.2	38.1
Sardegna	46.3	44.3	43.1
Obj. 1 Italia	46.4	43.9	40.5
Flevoland	59.3	66.4	69.0
Obj. 1 Nederland	-	66.4	69.0
Burgenland	-	-	66.2
Obj. 1 Österreich	-	-	66.2
Norte	70.1	67.6	66.7
Centro	70.3	71.0	81.4
Lisboa e Vale do Tejo	64.3	65.9	63.5
Alentejo	60.6	62.0	62.5
Algarve	59.9	66.1	64.7
Açores	60.1	59.6	58.5
Madeira	71.3	67.7	63.3
Obj. 1 Portugal	67.2	67.1	67.5
Merseyside	64.2	60.1	61.7
Highlands, Islands	60.1	66.5	73.9
Northern Ireland	58.3	60.0	64.2
Obj. 1 UNITED KINGDOM	58.3	60.6	64.0
EUR 15 (excluding new Länder)	61.0	60.3	-
EUR 15	-	60.7	60.9
Total Obj. 1 (1988-99) <sup>(c)</sup>	51.4	49.7	49.8
Total Obj. 1 (1994-99) <sup>(d)</sup>	-	51.9	52.1

See the Note to Table 29.

<sup>(a)</sup> Only regions wholly eligible for Objective 1

<sup>(b)</sup> Total employed/population aged 15-64

<sup>(c)</sup> Figures for French DOMs in 1993 are for 1994

<sup>(d)</sup> Regions with Objective 1 status throughout the period (except Abruzzo).

Source: Eurostat, LFS; DGXVI estimates. Because the LFS regional data for the years before 1992 relate to population 14-64, the figures for 15-64 have been estimated on the basis of the data for the respective Member States.

**Table 32 Employment change and productivity in Objective 1 regions, 1988-97**

Region <sup>(a)</sup>	Employment change (% pa)		GDP/employed (EUR15=100)			
	1988-93	1993-97	1988 <sup>(b)</sup>	1993 <sup>(b)</sup>	1993	1996
Hainaut	0.2	-0.4	108	113	115	112
Obj. 1 Belgique-België	0.2	-0.4	-	-	115	112
Berlin-Ost, Stadt	-	-0.2	-	-	71	78
Brandenburg	-	-0.2	-	-	59	66
Mecklenburg-Vorpommern	-	-0.2	-	-	54	61
Sachsen	-	-0.2	-	-	54	62
Sachsen-Anhalt	-	-0.2	-	-	57	60
Thüringen	-	-0.2	-	-	55	62
Obj. 1 Deutschland	-	-0.2	-	-	57	64
Anatoliki Makedonia, Thraki	1.8	-0.6	53	52	53	56
Kentriki Makedonia	1.0	2.8	65	69	70	69
Dytiki Makedonia	2.8	0.2	81	66	68	72
Thessalia	-0.6	3.0	62	68	69	68
Ipeiros	-2.2	0.2	52	60	61	65
Ionia Nisia	-0.5	1.1	54	61	62	63
Dytiki Ellada	-3.0	2.3	54	70	72	73
Sterea Ellada	-0.8	-0.8	91	94	95	101
Peloponnisos	0.0	-0.3	64	67	68	67
Attiki	2.5	1.6	72	72	74	74
Voreio Aigaio	-3.5	0.4	53	64	65	63
Notio Aigaio	4.4	-0.1	83	74	75	81
Kriti	2.4	1.1	64	68	69	72
Obj. 1 Ellada	1.1	1.4	67	69	71	72
Galicia	-1.2	0.1	61	66	68	71
Principado de Asturias	0.1	-0.6	89	85	88	91
Cantabria	0.6	-0.1	94	93	95	98
Castilla y León	-0.5	0.5	83	87	89	91
Castilla-La Mancha	0.3	1.2	84	86	88	88
Extremadura	-0.3	0.3	78	80	82	81
Comunidad Valenciana	0.6	2.3	89	91	93	87
Andalucia	0.6	1.2	88	90	91	90
Región de Murcia	0.5	0.9	88	90	92	90
Ceuta y Melilla	0.2	2.2	92	97	98	99
Canarias	1.3	3.4	105	103	105	97
Obj. 1 España	0.1	1.2	84	87	88	87
Corse	0.3	0.3	93	97	98	98
Guadeloupe <sup>(c)</sup>	-	-	-	-	52	49
Martinique <sup>(c)</sup>	-	-	-	-	67	61
Guyane <sup>(c)</sup>	-	-	-	-	68	58
Réunion <sup>(c)</sup>	-	-	-	-	75	68
Obj. 1 France	0.3	0.3	83	87	71	66
Ireland	1.2	4.1	83	96	100	108
Abruzzo	-1.1	-0.1	89	79	81	77
Molise	-1.6	-1.0	82	83	85	90
Campania	-0.5	-1.0	86	85	87	88
Puglia	-0.1	-1.4	91	87	89	83
Basilicata	-1.7	-0.7	74	80	81	86
Calabria	-0.2	-1.5	74	76	77	79
Sicilia	0.3	-0.7	88	87	88	86
Sardegna	-0.4	-0.5	87	92	94	88
Obj. 1 Italia	-0.3	-0.9	86	86	87	87
Flevoland	3.7	0.3	89	92	94	103
Obj. 1 Nederland	3.7	0.3	89	92	94	103
Burgenland	-	-	-	92	94	93
Obj. 1 Österreich	-	-	-	82	84	83
Nort	-1.4	-0.9	46	52	53	59
CENTRO	-0.8	-0.9	40	48	49	57
Lisboa e Vale do Tejo	0.3	-1.2	72	71	72	77
Alentejo	-0.3	-1.1	44	57	58	66
Algarve	5.1	-1.9	59	57	58	64
Açores	-1.1	-1.1	46	51	52	57
Madeira	-3.8	-0.5	37	50	51	57
Obj. 1 Portugal	-0.5	-1.0	54	59	60	66
Merseyside	-0.7	1.0	87	81	83	77
Highlands, Islands	0.6	1.0	76	71	72	70
Northern Ireland	-0.3	1.0	80	85	86	87
Obj 1 UK	-0.4	1.0	83	82	83	81
EUR15, excl New Länder	0.1	0.2	100	100	100	100
EUR15	-	0.2	-	-	100	100
Total Obj. 1 (1988-99) <sup>(d)</sup>	0.1	0.4	76	79	80	82
Total Obj. 1 (1994-99) <sup>(e)</sup>	-	0.3	-	-	78	79

See Note to Table 29.

<sup>(b)</sup> Relative to EUR15 average excluding the new Länder<sup>(c)</sup> Figures for French DOMs in 1993 are for 1994<sup>(d)</sup> Regions with Objective 1 status throughout the period (except Abruzzo)<sup>(e)</sup> Regions with Objective 1 status during the second programming period

Source: Eurostat; DGXVI estimates

Table 33 Employment in Objective 1 regions, 1997

Region <sup>(a)</sup>	Employment ('000s)				Employment (%)		
	Agriculture	Industry	Services	Total	Agriculture	Industry	Services
Hainaut	11	111	292	414	2.7	26.9	70.5
Obj. 1 Belgique-België	11	111	292	414	2.7	26.9	70.5
Berlin-Ost, Stadt	3	143	459	605	0.6	23.6	75.9
Brandenburg	58	375	670	1103	5.3	34.0	60.7
Mecklenburg-Vorpommern	50	235	482	767	6.5	30.7	62.8
Sachsen	55	695	1137	1887	2.9	36.8	60.3
Sachsen-Anhalt	48	372	673	1093	4.4	34.0	61.6
Thüringen	42	383	642	1067	3.9	35.9	60.2
Obj. 1 Deutschland	256	2203	4063	6522	3.9	33.8	62.3
Anatoliki Makedonia, Thraki	92	41	97	230	40.0	17.9	42.1
Kentriki Makedonia	136	178	381	694	19.5	25.6	54.8
Dytiki Makedonia	24	34	45	103	23.5	32.9	43.6
Thessalia	106	48	120	274	38.6	17.4	44.0
Ipeiros	30	20	49	98	30.3	20.1	49.6
Ionia Nisia	20	12	43	75	26.7	15.8	57.6
Dytiki Ellada	97	41	95	233	41.5	17.6	40.9
Stereia Ellada	51	44	66	161	31.7	27.5	40.7
Peloponnisos	90	35	82	207	43.4	16.9	39.7
Attiki	14	356	1038	1407	1.0	25.3	73.7
Voreio Aigaio	13	11	31	55	24.2	19.6	56.1
Notio Aigaio	10	20	68	98	10.2	20.0	69.8
Kriti	83	27	109	219	37.8	12.5	49.8
Obj. 1 Ellada	765	865	2223	3853	19.8	22.5	57.7
Galicia	199	247	449	894	22.2	27.6	50.2
Principado de Asturias	35	94	182	311	11.1	30.2	58.7
Cantabria	18	48	93	159	11.3	30.1	58.6
Castilla y León	108	220	447	775	14.0	28.4	57.6
Castilla-La Mancha	62	169	278	508	12.1	33.2	54.7
Extremadura	46	69	167	282	16.3	24.5	59.3
Comunidad Valenciana	83	440	780	1303	6.4	33.8	59.8
Andalucia	231	406	1232	1868	12.4	21.7	65.9
Región de Murcia	43	96	218	357	12.1	26.9	61.0
Ceuta y Melilla	0	3	35	38	0.3	6.9	92.8
Canarias	44	93	384	521	8.4	17.8	73.8
Obj. 1 España	868	1883	4264	7014	12.4	26.8	60.8
Corse	4	8	42	53	6.6	14.5	78.9
Guadeloupe	10	24	90	124	7.8	19.7	72.5
Martinique	9	12	102	123	7.5	9.7	82.8
Guyane	3	4	36	44	7.8	10.0	82.2
Réunion	8	24	128	160	5.1	15.1	79.8
Obj. 1 France	34	73	397	504	6.7	14.4	78.8
Ireland	149	391	829	1369	10.9	28.6	60.5
Moise	17	29	61	107	15.5	27.0	57.4
Campania	153	335	1007	1496	10.3	22.4	67.3
Puglia	132	284	715	1130	11.6	25.2	63.2
Basilicata	23	52	93	167	13.7	30.9	55.4
Calabria	67	92	353	512	13.1	18.0	69.0
Sicilia	154	257	867	1278	12.0	20.1	67.9
Sardegna	62	114	322	498	12.5	22.8	64.7
Obj. 1 Italia	607	1162	3418	5188	11.7	22.4	65.9
Flevoland	8	24	91	123	6.7	19.4	73.9
Obj. 1 Nederland	8	24	91	123	6.7	19.4	73.9
Burgenland	10	41	69	120	8.2	34.6	57.3
Obj. 1 Österreich	10	41	69	120	8.2	34.6	57.3
Norte	183	630	765	1578	11.6	39.9	48.5
Centro	288	268	348	904	31.9	29.7	38.5
Lisboa e Vale do Tejo	57	378	1062	1496	3.8	25.2	71.0
Alentejo	29	50	126	205	14.2	24.5	61.2
Algarve	17	28	98	143	11.8	19.6	68.6
Açores	15	19	57	91	16.0	21.2	62.8
Madeira	13	30	64	107	12.5	27.7	59.8
Obj. 1 Portugal	601	1403	2519	4523	13.3	31.0	55.7
Merseyside	1	137	403	541	0.1	25.4	74.5
Highlands, Islands	8	37	95	140	5.6	26.3	68.1
Northern Ireland	35	181	448	664	5.2	27.3	67.5
Obj. 1 UK	43	355	946	1344	3.2	26.4	70.4
EUR15	7426	44036	97824	148386	5.0	29.5	65.6
Total Obj. 1	3352	8511	19111	30975	10.8	27.5	61.7

<sup>(a)</sup> only regions wholly eligible for Objective 1

Source: Eurostat, LFS; DGXVI estimates

**Table 34 Impact of the Structural Funds**

**Comparison of simulation results obtained from macroeconomic models  
(growth effects as % difference from baseline)**

	PEREIRA	BEUTEL		HERMIN4			QUEST II	
	1994-99 yearly average (%)	1989-93 yearly average (%)	1994-99 yearly average (%)	1994 Total effects (of which demand effects)	1999 Total effects (of which demand effects)	2020 Total effects (of which demand effects)	1989-93 yearly average (%)	1994-99 yearly average (%)
Greece	0.4 to 0.6	0.8	1.0	1.2 (1.1)	9.4 (4.8)	9.5 <sup>(a)</sup> (1.5)	0.3	0.1
Ireland	0.4 to 0.6	0.9	0.6	6.2 (6.2)	9.3 (5.9)	12.4 (4.0)	0.3	0.3
Portugal	0.6 to 0.9	0.9	1.1	7.0 (7.0)	9.2 (8.1)	8.9 (7.6)	0.3	0.2
Spain	-	0.3	0.5	1.9 (1.9)	4.3 (2.9)	8.7 (1.9)	0.1	0.1
Average EUR4	-	0.5	0.7	-	-	-	-	-

<sup>(a)</sup> 2010

Source: Pereira (1994), Beutel (1996) Bradley et al. (1995), Christodoulakis and Kalvitys (1995), Cordero (1996), Roeger (1996)

**Table 35 Demographic changes in Central and Eastern Europe, 1985-95**

	Annual average % change							
	1985-90	1990-95	1990	1991	1992	1993	1994	1995
<b>CEEC</b>	0.30	-0.13	0.00	-0.36	-0.13	-0.05	-0.06	-0.14
Natural Growth	0.40	0.10	0.24	0.17	0.09	0.03	-0.01	-0.10
Net Migration	-0.10	-0.23	-0.24	-0.53	-0.22	-0.08	-0.05	-0.04
<b>Bulgaria</b>	-0.40	-0.80	-1.12	-0.86	-1.28	-0.30	-0.38	-0.50
Natural Growth	0.10	-0.30	-0.04	-0.16	-0.22	-0.30	-0.38	-0.50
Net Migration	-0.50	-0.50	-1.08	-0.70	-1.06	0.00	0.00	0.00
<b>Czech Republic</b>	0.05	-0.07	0.02	-0.50	0.12	0.08	0.00	-0.11
Natural Growth	0.03	-0.04	0.02	0.05	0.01	0.03	-0.10	-0.20
Net Migration	0.02	-0.03	0.00	-0.55	0.11	0.05	0.10	0.09
<b>Estonia</b>	0.62	-1.10	-0.07	-0.52	-2.28	-1.28	-1.01	-1.03
Natural Growth	0.42	-0.20	0.18	-0.02	-0.13	-0.40	-0.52	-0.50
Net Migration	0.20	-0.90	-0.25	-0.50	-2.15	-0.88	-0.49	-0.53
<b>Hungary</b>	-0.42	-0.31	-0.19	-0.17	-0.26	-0.32	-0.30	-0.30
Natural Growth	-0.21	-0.31	-0.19	-0.17	-0.26	-0.32	-0.30	-0.30
Net Migration	-0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Latvia</b>	0.78	-1.20	-0.20	-0.40	-1.90	-1.55	-1.41	-1.09
Natural Growth	0.34	-0.30	0.12	0.00	-0.14	-0.48	-0.68	-0.68
Net Migration	0.44	-0.90	-0.32	-0.40	-1.76	-1.07	-0.73	-0.41
<b>Lithuania</b>	0.99	0.02	0.76	0.27	-0.28	-0.33	-0.17	-0.15
Natural Growth	0.67	0.20	0.46	0.40	0.32	0.02	-0.10	-0.11
Net migration	0.33	-0.18	0.30	-0.13	-0.60	-0.35	-0.07	-0.04
<b>Poland</b>	0.52	0.29	0.38	0.33	0.28	0.23	0.20	0.07
Natural Growth	0.71	0.34	0.41	0.38	0.31	0.27	0.25	0.12
Net migration	-0.19	-0.05	-0.03	-0.05	-0.03	-0.04	-0.05	-0.05
<b>Romania</b>	0.45	-0.49	-0.08	-1.64	-0.15	-0.13	-0.15	-0.24
Natural Growth	0.60	0.01	0.29	0.10	-0.02	-0.06	-0.08	-0.15
Net migration	-0.15	-0.50	-0.37	-1.74	-0.13	-0.07	-0.07	-0.09
<b>Slovak Republic</b>	0.50	0.22	-0.73	0.45	0.35	0.41	0.37	0.21
Natural Growth	0.70	0.43	0.48	0.45	0.40	0.38	0.28	0.16
Net Migration	-0.20	-0.21	-1.21	0.00	-0.05	0.03	0.09	0.05
<b>Slovenia</b>	0.48	-0.07	0.17	-0.06	-0.24	-0.23	0.00	0.04
Natural Growth	0.33	0.06	0.19	0.11	0.03	-0.01	0.00	0.00
Net migration	0.15	-0.13	-0.02	-0.17	-0.27	-0.22	0.00	0.04

Source: Eurostat, National statistics

**Table 36 Total Population in Central and Eastern Europe, 1960-97**

	000s											
	1960	1970	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997
CEEC	86846	94465	101659	104404	106015	106010	105627	105495	105446	105385	105232	104903
Bulgaria	7829	8464	8846	8971	8767	8669	8596	8485	8460	8428	8385	8285
Czech Republic	9638	9790	10316	10334	10362	10364	10313	10326	10334	10333	10321	10299
Estonia	1209	1352	1472	1524	1572	1570	1562	1527	1507	1492	1476	1462
Hungary	9961	10322	10710	10599	10375	10355	10337	10310	10277	10246	10212	10135
Latvia	2104	2352	2509	2570	2674	2668	2657	2606	2566	2530	2502	2458
Lithuania	2756	3119	3404	3529	3708	3737	3747	3737	3724	3718	3712	3705
Poland	29480	32671	35413	37063	38038	38183	38309	38418	38505	38581	38609	38660
Romania	18319	20140	22133	22687	23211	23192	22811	22779	22748	22712	22656	22526
Slovak Republic	3970	4537	4963	5179	5311	5272	5296	5314	5337	5356	5368	5388
Slovenia	1581	1720	1893	1949	1996	2000	1999	1994	1989	1990	1990	1985

Source: Eurostat

**Table 37 Population growth in Central and Eastern Europe, 1960-97**

	Annual average % change											
	1960-70	1970-80	1980-85	1985-90	1990-96	1991	1992	1993	1994	1995	1996	1997
CEEC	0.8	0.7	0.5	0.3	0.1	0.0	-0.4	-0.1	-0.1	-0.1	-0.1	-0.3
Bulgaria	0.8	0.4	0.3	-0.5	-0.7	-1.1	-0.9	-1.3	-0.3	-0.4	-0.5	-1.2
Czech Republic	0.2	0.5	0.0	0.1	-0.1	0.0	-0.5	0.1	0.1	0.0	-0.1	-0.2
Estonia	1.1	0.9	0.7	0.6	-1.0	-0.1	-0.5	-2.3	-1.3	-1.0	-1.0	-1.0
Hungary	0.4	0.4	-0.2	-0.4	0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.8
Latvia	1.1	0.7	0.4	0.8	-1.1	-0.2	-0.4	-1.9	-1.6	-1.4	-1.1	-1.7
Lithuania	1.3	0.9	0.7	1.0	0.0	0.8	0.3	-0.3	-0.3	-0.2	-0.2	-0.2
Poland	1.0	0.8	0.9	0.5	0.3	0.4	0.3	0.3	0.2	0.2	0.1	0.1
Romania	1.0	1.0	0.5	0.5	-0.4	-0.1	-1.6	-0.1	-0.1	-0.2	-0.3	-0.6
Slovak Republic	1.3	0.9	0.9	0.5	0.2	-0.7	0.5	0.4	0.4	0.4	0.2	0.4
Slovenia	0.9	1.0	0.6	0.5	-0.1	0.2	-0.1	-0.2	-0.2	0.0	0.0	-0.3

Source: Eurostat

**Table 38 Balance of trade between CEECs and EU Member States, 1996**

	ECU million														
	EUR15	F	B/L	NL	D	I	UK	IRL	DK	EL	P	E	S	FIN	A
CEEC	16,456.4	1,637.4	945.1	379.1	4,680.6	3,574.4	948.8	244.5	295.2	-137.6	-0.7	444.6	745.2	1,356.3	1,343.5
Estonia	605.7	-0.8	-0.7	-71.0	76.8	42.5	-30.2	6.6	15.5	0.8	-0.7	6.2	-24.5	578.7	6.6
Latvia	-15.2	-22.1	5.6	-244.5	69.6	47.9	-72.4	-4.0	13.0	3.3	-5.7	1.8	23.7	157.1	11.5
Lithuania	364.7	9.6	-24.5	-1.5	181.1	61.5	-54.7	8.1	40.7	1.7	-14.4	-6.8	58.5	97.2	8.1
Slovenia	1,105.8	132.4	96.7	64.7	-266.0	669.8	15.2	8.4	-2.7	-11.1	-12.7	98.3	31.2	10.8	270.7
Poland	7,581.2	689.1	514.5	347.4	2,265.9	1,620.6	802.5	78.8	99.7	-19.1	-2.6	279.5	376.6	248.7	279.6
Czech Rep	4,216.0	536.3	259.7	256.3	1,324.7	768.9	379.0	70.5	54.0	-45.5	-7.8	157.7	139.8	116.5	206.0
Slovak Rep	577.1	116.4	13.8	34.4	148.9	89.5	28.7	7.1	13.4	-14.2	4.6	38.2	12.5	22.2	61.5
Hungary	1,180.5	94.6	67.2	25.9	349.0	208.1	-113.7	50.0	31.4	-33.1	33.1	-31.1	85.0	87.6	326.4
Romania	849.8	67.6	24.6	-38.0	383.6	179.1	19.9	11.8	25.2	23.2	9.1	-10.9	19.3	18.4	116.9
Bulgaria	-9.3	14.3	-11.8	5.4	147.1	-113.5	-25.4	7.2	4.8	-43.7	-3.6	-88.5	23.1	19.2	56.2

Source: Eurostat

**Table 39 Population in Cyprus, 1974-96**

	1974 ('000s)	1996 ('000s)	1974-96 (% pa)
Southern part of the Island	506	652	1.2
Northern part of the Island	116	198	2.5

*Source: Government of Cyprus, Demographic Report. Figures for northern part are estimates and include settlers*

**Table 40 Changes in GDP in the southern part of Cyprus, 1990-96**

	1990	1991	1992	1993	1994	1995	1996
GDP growth (% pa)	-	0.7	9.4	0.7	5.8	5.5	2.0
GDP (billion ECU)	4.4	4.7	5.3	5.6	6.2	6.7	7.0
GDP per head ('000s ECU)	7.5	7.7	8.6	8.9	9.8	10.4	10.7

*Source: Eurostat; Government of Cyprus, National accounts*

**Table 41 Changes in output in the northern part of Cyprus, 1985-96**

	Annual average % change			
	GDP	Agriculture	Industry	Services
1985-90	6.8	-4.4	15.0	5.9
1990-96	0.8	5.0	0.5	0.6

*Source: Government of Cyprus, estimates based on other sources*

**Table 42 GDP disparities in Cyprus, 1996**

	Northern part	Southern part	North/South (%)
GDP per head ('000s ECU)	3.2	10.9	29.7
GDP per person employed ('000s ECU)	7.8	19.3	40.4

*Source: Government of Cyprus. Figures for the northern part are estimates based on other sources*

**Table 43 Main regional indicators**

Region	Economy							Labour market					
	GDP/head (PPS), EUR15=100			Employment by sector (% of total), 1997				Eur. patent applications per million people, average 94-95-96	Unemployment rate (%)				
	1996	1995	average 1994-95-96	Agriculture	Industry	Services	Total, 1997		Total, 1997	Long term unemployed, 1997 (% of total unempl.)	Female, 1997	Young, 1997	
<b>EUR15</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>5.0</b>	<b>28.4</b>	<b>65.3</b>	<b>90.7</b>	-	<b>10.7</b>	<b>48.0</b>	<b>12.2</b>	<b>20.9</b>	
<b>EUR12</b>	<b>98.6</b>	<b>98.9</b>	<b>98.8</b>	<b>4.9</b>	<b>28.5</b>	<b>65.2</b>	<b>87.0</b>	<b>10.5</b>	<b>10.8</b>	<b>50.1</b>	<b>12.4</b>	<b>21.1</b>	
<b>Belgique-België</b>	<b>102.8</b>	<b>112.1</b>	<b>112.8</b>	<b>2.7</b>	<b>27.5</b>	<b>68.8</b>	<b>90.1</b>	<b>11.0</b>	<b>8.9</b>	<b>60.8</b>	<b>11.8</b>	<b>21.1</b>	
Reg. Bruxelles-Cap./Brussels Hdst. Gew.	163.3	173.1	172.3	0.2	16.0	83.8	97.9	12.0	13.5	61.9	14.2	31.8	
Vlaams Gewest	102.7	115.3	115.8	2.9	30.6	65.5	107.8	9.2	6.3	57.1	8.9	14.2	
Antwerpen	123.6	137.3	137.6	1.7	30.0	68.3	166.5	10.2	7.2	59.4	10.1	17.0	
Limburg	93.4	109.5	110.4	3.0	37.8	59.2	41.8	13.8	8.3	60.3	13.3	16.1	
Oost-Vlaanderen	99.5	104.4	104.8	2.8	32.7	64.4	68.1	8.8	6.5	58.5	8.7	15.0	
Vlaams Brabant	79.6	96.5	96.8	2.3	21.3	76.4	159.3	6.9	4.5	50.1	5.8	11.9	
West-Vlaanderen	102.7	117.3	118.0	5.1	33.1	61.8	70.2	7.5	5.1	52.6	7.5	10.5	
Région Wallonne	84.5	89.1	89.4	2.9	24.5	72.6	56.4	14.0	12.5	63.9	15.5	31.5	
Brabant Wallon	75.6	89.1	89.0	1.7	18.5	79.8	203.7	8.8	7.9	51.4	9.8	23.0	
Hainaut	77.4	80.7	81.3	2.7	26.9	70.5	22.5	16.4	15.4	67.2	18.8	39.2	
Léige	97.4	99.0	99.4	2.5	26.6	70.8	59.7	13.8	12.2	63.7	15.5	28.3	
Luxembourg (B)	83.9	96.4	97.3	5.6	22.5	72.0	38.3	11.0	8.8	50.9	9.3	18.6	
Namur	82.3	86.4	86.2	3.6	19.7	76.7	37.7	13.3	11.4	62.8	14.7	30.5	
<b>Denmark</b>	<b>112.1</b>	<b>119.3</b>	<b>118.5</b>	<b>3.7</b>	<b>26.1</b>	<b>69.7</b>	<b>118.8</b>	<b>6.8</b>	<b>6.7</b>	<b>25.2</b>	<b>6.7</b>	<b>6.8</b>	
<b>Deutschland</b>	<b>118.1</b>	<b>108.3</b>	<b>108.8</b>	<b>2.9</b>	<b>34.7</b>	<b>62.4</b>	<b>188.1</b>	<b>6.3</b>	<b>9.8</b>	<b>49.3</b>	<b>10.8</b>	<b>10.8</b>	
Baden-Württemberg	125.2	124.0	125.8	2.8	41.2	56.0	303.4	3.5	6.2	45.8	6.1	8.1	
Saigern	142.6	135.2	137.1	2.9	43.8	53.3	349.3	3.1	6.1	48.4	5.9	7.5	
Karlsruhe	123.5	125.7	127.1	1.3	38.5	60.2	278.1	4.2	6.6	45.5	6.5	9.6	
Freiburg	108.0	109.1	110.9	3.7	38.3	58.0	292.9	3.8	6.2	44.6	6.2	9.0	
Tübingen	109.5	114.4	116.2	3.7	42.9	53.4	252.0	3.2	5.7	41.5	5.7	6.8	
Bayern	115.9	124.2	125.9	3.7	36.4	59.9	245.5	4.4	5.9	39.2	5.9	7.1	
Oberbayern	149.9	156.5	158.4	3.0	31.5	65.4	362.0	4.1	4.8	37.6	4.6	5.7	
Niederbayern	88.9	96.8	96.6	6.8	40.2	53.0	102.6	4.9	5.5	29.1	5.6	8.6	
Oberpfalz	90.4	98.6	101.0	5.5	37.2	57.3	157.0	6.0	6.5	41.3	6.9	7.1	
Oberfranken	98.2	107.3	108.6	3.6	41.8	54.7	135.4	4.6	7.4	40.2	7.9	9.0	
Mittelfranken	123.6	123.2	124.8	2.7	37.7	59.6	277.8	4.6	7.1	43.0	7.3	8.5	
Unterfranken	99.2	104.3	105.9	2.4	39.5	58.1	205.0	4.3	6.4	42.5	6.9	8.5	
Schwaben	106.6	110.4	112.0	4.3	38.4	57.3	195.5	3.9	5.8	39.1	5.7	6.9	
Berlin	128.1	102.2	104.7	0.6	23.6	75.9	107.1	8.1	13.4	45.8	13.0	14.7	
Brandenburg	-	66.7	66.2	5.3	34.0	60.7	22.0	-	17.2	54.5	21.1	11.6	
Bremen	143.8	149.0	152.0	0.9	32.1	67.0	58.6	11.6	12.3	57.2	11.2	18.0	
Hamburg	184.8	192.5	193.9	1.4	22.2	76.4	148.1	10.6	8.8	49.0	7.5	12.3	
Hessen	130.5	147.9	149.4	1.7	32.1	66.3	264.4	4.8	7.4	46.9	7.0	10.3	
Darmstadt	151.9	171.3	172.8	0.9	30.5	68.6	354.3	4.4	6.7	47.0	6.2	9.8	
Gießen	91.7	105.1	106.3	2.5	35.1	62.4	166.5	5.0	7.8	43.1	7.8	10.5	
Kassel	100.2	115.6	116.9	3.4	34.3	62.3	83.8	5.8	9.0	49.3	8.8	11.2	
Mecklenburg-Vorpommern	-	61.2	60.8	6.5	30.7	62.8	10.0	-	18.8	47.8	22.4	10.9	
Niedersachsen	98.5	102.2	104.2	4.5	32.5	62.9	94.1	7.9	9.4	52.5	9.4	12.9	
Braunschweig	99.9	106.8	108.1	3.6	36.1	60.4	93.9	7.8	11.4	64.2	11.7	14.6	
Hannover	106.8	117.0	118.8	3.8	30.9	65.3	130.4	7.8	9.1	48.8	8.6	12.2	
Lüneburg	74.8	83.3	85.2	5.0	31.7	63.2	98.3	6.8	8.0	46.3	7.9	10.7	
Weeser-Ems	88.9	98.6	100.9	5.6	32.1	62.3	58.2	8.9	9.2	49.3	9.5	14.2	
Nordrhein-Westfalen	111.7	109.7	111.9	2.0	35.9	62.2	175.1	8.2	9.0	55.2	8.8	12.0	
Düsseldorf	122.1	119.4	121.4	1.6	35.0	63.4	218.4	8.5	9.6	58.5	9.0	12.5	
Köln	116.9	113.4	115.9	1.1	30.6	68.3	231.7	7.4	8.3	54.3	8.1	11.6	
Münster	95.0	94.8	96.9	4.1	36.4	59.5	115.3	8.5	8.6	51.8	8.4	10.9	
Osnabrück	105.2	105.3	108.0	3.1	42.5	54.4	111.7	7.0	8.3	46.3	8.9	12.5	
Arnsberg	106.2	104.5	106.4	1.5	39.1	59.5	126.3	8.9	9.7	57.4	9.4	12.6	
Rheinland-Pfalz	103.6	94.2	97.3	2.8	35.8	61.3	226.5	5.7	7.2	45.7	7.1	9.7	
Koblenz	94.7	88.8	91.9	1.7	36.3	62.0	120.0	5.6	6.8	38.9	6.6	9.4	
Trier	88.2	84.8	87.5	4.7	32.5	62.7	79.1	6.8	6.3	40.6	6.3	8.6	
Rheinhesen-Pfalz	114.3	100.6	103.8	3.2	36.3	60.5	343.7	5.4	7.7	51.1	7.6	10.3	
Saarland	105.2	105.0	107.1	1.0	30.3	68.7	92.1	10.2	10.1	57.6	9.1	14.2	
Sachsen	-	64.0	63.0	2.9	36.8	60.3	36.9	-	17.2	50.8	20.9	11.2	
Sachsen-Anhalt	-	60.8	60.9	4.4	34.0	61.6	20.1	-	20.6	51.3	24.3	13.2	
Dessau	-	55.1	55.2	4.3	36.0	59.7	18.9	-	21.5	51.4	26.2	13.6	
Halle	-	68.4	68.4	4.5	34.3	61.2	25.2	-	19.9	50.0	23.1	13.9	
Magdeburg	-	57.8	58.0	4.4	32.9	62.7	16.8	-	20.7	52.2	24.3	12.6	
Schleswig-Holstein	95.2	102.5	104.7	2.9	27.0	70.2	78.6	7.3	7.6	42.1	7.0	10.7	
Thüringen	-	61.2	60.4	3.9	35.9	60.2	32.4	-	17.6	45.8	21.0	12.3	
<b>Ellede</b>	<b>88.2</b>	<b>87.5</b>	<b>86.4</b>	<b>19.8</b>	<b>22.5</b>	<b>57.7</b>	<b>3.7</b>	<b>7.4</b>	<b>9.6</b>	<b>86.4</b>	<b>14.8</b>	<b>31.0</b>	
Voreis Ellede	57.2	64.8	63.7	27.5	23.1	49.4	-	6.4	9.1	52.7	14.4	29.4	
Anatoliki Makedonia, Thraki	55.8	61.1	59.9	40.0	17.9	42.1	-	-	8.3	46.7	12.5	27.8	
Kentriki Makedonia	58.3	67.4	66.4	19.5	25.8	54.8	-	-	9.2	48.8	14.5	28.2	
Dyktiki Makedonia	58.1	61.8	60.6	23.4	32.8	43.6	-	-	13.8	61.9	22.6	45.7	
Thessalia	55.2	62.7	61.5	36.6	17.4	44.0	-	6.5	7.5	63.8	12.8	27.1	
Kentriki Ellede	57.7	58.2	57.7	37.1	19.6	43.3	-	-	8.8	61.5	14.7	32.8	
Ipeiros	47.4	43.8	43.4	30.3	20.1	49.6	-	-	10.5	67.0	17.6	43.4	

Employment rate (% population 15-64), 1997			Demography					Education			Region
Total	Female	Male	Population (000s), 1996	Population density (nos./km <sup>2</sup> ), 1996	% population aged:			Educational attainment of 25-59 year olds (% total), 1997			
					<15	15-64	65+	Low	Medium	High	
80.9	80.9	70.9	373243	117.0	17.4	67.0	15.8	41	40	20	EUR16
80.5	80.2	70.9	361218	148.9	17.4	67.1	15.8	-	-	-	EUR12
87.3	86.9	87.4	10187	332.8	17.9	66.1	16.0	39	34	27	Belgique-België
53.0	46.0	60.2	949	5882.0	17.5	65.1	17.4	38	27	35	Rég. Bruxelles-Cap. / Brussels Hdst. Gew.
60.1	49.1	70.8	5890	435.9	17.5	66.8	15.6	39	35	26	Vlaams Gewest
58.5	46.5	70.2	1633	569.7	17.7	66.3	16.0	41	33	26	Antwerpen
55.4	42.4	68.0	778	321.0	18.5	69.2	12.3	45	33	22	Limburg
61.4	51.2	71.4	1353	453.8	16.9	67.0	16.1	38	37	25	Oost-Vlaanderen
63.5	55.4	71.6	1002	475.7	17.3	66.9	15.8	34	35	31	Vlaams Brabant
61.0	49.6	72.0	1123	358.4	17.7	65.6	16.8	39	37	24	West-Vlaanderen
53.3	43.2	63.4	3318	197.0	18.7	65.0	16.3	40	33	27	Région Wallonne
58.7	50.8	66.8	340	312.0	19.8	66.1	14.1	26	29	45	Brabant Wallon
49.8	40.2	59.4	1285	339.3	18.2	64.9	16.9	45	32	23	Hainaut
53.3	42.6	64.0	1014	262.6	18.2	65.1	16.7	39	35	27	LIÈGE
58.7	47.2	69.8	242	54.5	20.6	63.6	15.9	40	35	25	Luxembourg
56.4	45.5	67.2	437	119.1	19.3	64.9	15.9	39	33	26	Namur
76.1	68.8	82.3	5283	122.1	17.5	67.3	15.1	20	64	26	Denmark
84.2	85.7	72.8	81915	229.6	16.2	68.3	15.8	18	88	23	Deutschland
68.0	59.4	76.4	10347	289.4	16.9	68.2	14.9	22	55	24	Baden-Württemberg
68.3	60.3	76.1	3872	366.8	16.8	68.6	14.6	23	54	24	Stuttgart
65.9	56.7	75.0	2651	363.1	16.0	68.6	15.4	20	57	23	Karlsruhe
69.2	60.9	77.3	2093	223.7	17.3	67.5	15.2	21	56	23	Freiburg
69.2	60.1	78.2	1731	194.1	18.2	67.6	14.2	22	54	24	Tübingen
69.6	60.6	78.4	12019	170.3	16.5	68.0	15.5	22	56	22	Bayern
71.4	62.9	79.8	3985	227.3	15.4	69.6	15.0	20	52	27	Oberbayern
70.2	59.8	80.4	1148	111.1	17.4	67.3	15.3	23	59	18	Niederbayern
69.2	58.1	80.2	1057	109.1	17.4	67.4	15.2	24	57	19	Oberpfalz
68.2	60.3	75.9	1112	153.8	16.4	66.8	16.7	23	59	18	Oberfranken
68.3	60.5	75.8	1671	230.6	16.1	68.1	15.8	20	58	23	Mittelfranken
67.3	57.3	77.0	1320	154.7	17.5	67.0	15.5	23	56	21	Unterfranken
69.1	60.4	77.6	1726	172.7	17.5	66.8	15.7	22	59	19	Schwaben
62.1	57.7	66.5	3465	3897.3	15.0	71.3	13.7	15	52	33	Berlin
62.8	57.1	68.3	2548	86.4	16.9	69.7	13.4	7	62	31	Brandenburg
59.7	52.3	67.2	679	1679.3	13.9	68.4	17.7	22	58	20	Bremen
63.9	59.3	68.4	1708	2261.3	13.4	69.6	17.0	20	56	24	Hamburg
64.8	56.1	73.3	6019	285.0	15.5	68.7	15.8	20	56	24	Hessen
65.5	57.5	73.2	3690	495.6	14.9	69.8	15.3	19	54	26	Darmstadt
63.7	53.6	73.7	1058	196.6	16.5	67.8	15.6	19	59	22	Gießen
63.7	53.9	73.2	1271	153.3	16.1	66.5	17.4	22	58	20	Kassel
61.3	55.7	66.8	1820	78.6	17.7	69.8	12.4	9	62	29	Mecklenburg-Vorpommern
63.4	53.9	72.6	7798	164.7	16.4	67.5	16.1	19	61	20	Niedersachsen
61.0	51.4	70.4	1679	207.3	15.4	67.4	17.2	18	61	21	Braunschweig
63.0	54.5	71.4	2143	236.8	15.1	67.8	17.1	18	61	21	Hannover
66.9	57.3	76.3	1609	105.6	16.8	67.4	15.8	20	61	18	Lüneburg
63.2	53.1	72.9	2367	158.2	18.2	67.2	14.6	20	61	19	Wester- und Ems
61.2	50.4	71.8	17920	526.0	16.3	67.8	15.9	20	59	20	Nordrhein-Westfalen
60.4	50.1	70.7	5291	1000.4	15.5	68.1	16.5	22	60	18	Düsseldorf
61.5	50.0	72.9	4202	570.6	16.0	68.9	15.1	21	54	25	Köln
60.6	49.2	71.7	2580	373.8	17.6	67.4	15.1	19	62	19	Münster
65.2	54.9	75.4	2020	309.9	17.4	66.2	16.3	18	63	19	Detmold
60.1	49.7	70.4	3827	478.5	16.2	67.4	16.4	20	60	19	Arensberg
63.8	53.2	74.2	3989	201.0	16.5	67.0	16.5	21	59	20	Rheinland-Pfalz
64.0	53.3	74.7	1495	184.7	16.9	66.0	17.1	21	60	19	Koblenz
65.6	53.2	77.4	507	102.9	16.8	66.0	17.2	20	61	19	Trier
63.3	53.1	73.1	1988	291.0	16.2	67.9	15.6	22	58	20	Rheinhausen-Pfalz
57.8	47.8	67.7	1084	421.8	15.3	67.9	16.8	20	63	17	Saarland
62.7	57.2	68.0	4556	247.5	15.4	67.8	16.8	5	64	31	Sachsen
59.6	54.4	64.6	2731	133.6	16.0	68.6	15.4	8	65	27	Sachsen-Anhalt
58.8	52.2	65.2	572	133.6	15.7	68.6	15.7	7	67	25	Deesau
60.5	55.7	65.2	906	204.7	15.6	68.6	15.8	8	65	27	Halle
59.3	54.6	63.8	1253	106.8	16.4	68.6	15.0	8	63	28	Magdeburg
66.5	57.2	75.7	2734	173.8	15.7	68.3	16.0	19	61	20	Schleswig-Holstein
63.0	57.6	68.2	2497	154.4	16.2	68.7	15.1	6	63	30	Thüringen
86.7	80.1	74.8	10476	79.6	16.8	67.6	15.8	51	32	17	Elade
57.7	40.6	76.3	3381	59.9	16.8	68.1	15.1	57	28	18	Voreis Elade
62.2	46.3	79.5	561	39.6	17.3	66.8	15.9	65	23	12	Anatoliki Makedonia, Thraki
56.0	39.4	74.3	1777	94.5	16.5	69.4	14.1	51	31	18	Kentriki Makedonia
53.6	34.3	73.1	302	31.9	17.7	66.6	15.7	61	26	13	Dytiki Makedonia
60.6	41.9	80.6	742	52.8	17.0	66.5	18.5	64	22	14	Thessalia
60.6	42.4	79.5	2635	48.9	16.2	66.2	17.6	65	24	11	Kentriki Elade
55.7	37.4	75.1	368	40.0	15.5	66.7	17.7	65	21	15	Ipsiros

**Table 43 Main regional indicators**

Region	Economy							Labour market					
	GDP/head (PPS), EUR15=100			Employment by sector (% of total), 1997			Eur. patent applications per million people, average 94-95-96	Unemployment rate (%)					
	1986	1996	average 1994-95-96	Agriculture	Industry	Services		Total, 1987	Total, 1997	Long term unemployed, 1997 (% of total unempl.)	Female, 1997	Young, 1997	
Ionia Nisia	51.9	61.9	61.1	26.7	15.8	57.6	-	-	6.2	46.5	7.6	23.4	
Dytiki Ellada	48.9	57.7	56.9	41.5	17.6	40.9	-	-	7.9	65.6	11.6	28.5	
Sterea Ellada	73.5	65.5	65.3	31.8	27.5	40.8	-	-	12.0	60.7	22.6	42.6	
Peloponnisos	60.7	58.3	57.9	43.4	16.9	39.7	-	-	7.5	58.5	13.2	27.9	
Atiki <sup>1)</sup>	62.8	76.8	75.0	1.0	25.3	73.7	-	-	11.6	55.6	16.9	34.5	
Nisia Agaou, Kriti	56.2	69.5	68.5	28.5	15.5	56.0	-	-	4.7	48.4	7.7	19.0	
Voreio Agaio	44.0	51.7	50.3	24.2	19.6	56.1	-	-	7.1	54.4	12.9	23.5	
Norio Agaio	65.1	75.3	74.6	10.2	20.0	69.9	-	-	4.3	43.0	7.2	15.5	
Kriti	56.6	72.5	71.6	37.8	12.5	49.8	-	-	2.7	4.3	48.8	6.9	19.8
<b>Espania</b>	<b>69.8</b>	<b>78.7</b>	<b>78.5</b>	<b>8.3</b>	<b>29.9</b>	<b>61.8</b>	<b>12.0</b>	<b>20.8</b>	<b>21.1</b>	<b>51.5</b>	<b>28.3</b>	<b>38.8</b>	
Noroeste	60.3	67.3	66.8	18.4	28.5	53.1	3.9	15.4	19.9	61.1	25.9	40.9	
Gaicia	55.0	63.0	62.3	22.2	27.6	50.2	2.9	13.4	19.2	58.7	24.8	37.1	
Principado de Asturias	70.4	73.6	73.3	11.1	30.2	58.7	6.6	19.7	21.2	65.6	27.5	50.3	
Cantabria	67.0	76.9	76.7	11.3	30.1	58.6	3.6	18.8	21.1	64.3	28.9	45.1	
Noreste	84.5	91.8	91.8	6.1	36.7	57.2	14.6	18.5	16.0	54.9	23.7	34.5	
Pais Vasco	89.5	92.3	92.5	2.7	36.9	60.4	14.9	23.2	18.8	61.2	26.0	39.4	
Comunidad Foral de Navarra	84.8	98.1	97.4	8.9	40.0	51.0	27.8	15.1	10.0	42.0	15.0	29.9	
La Rioja	83.3	89.0	89.0	9.2	39.0	51.9	6.7	13.2	11.8	52.0	17.6	26.5	
Aragón	75.9	88.9	88.7	10.1	34.2	55.8	10.3	12.7	14.4	44.5	24.4	30.0	
Comunidad de Madrid	85.9	100.6	99.6	1.2	26.5	72.3	21.8	16.3	18.4	57.5	22.6	36.8	
Centro	57.4	68.4	67.8	13.8	29.2	57.0	3.2	18.5	21.6	46.4	31.9	41.6	
Castilla y León	65.0	75.9	74.6	14.0	28.4	57.6	4.2	17.6	19.9	52.5	30.3	43.8	
Castilla-La Mancha	54.5	65.9	65.6	12.1	33.2	54.7	3.1	15.1	19.1	40.9	28.1	37.8	
Extremadura	44.2	54.6	55.0	16.3	24.5	59.3	1.6	25.9	29.5	41.9	41.4	43.9	
Este	78.7	89.6	89.4	4.2	35.8	60.0	21.6	20.7	18.5	51.3	24.9	35.5	
Cataluña	82.3	99.1	98.1	3.2	38.4	58.4	28.7	21.8	17.4	57.7	23.5	33.3	
Comunidad Valenciana	70.9	73.8	74.4	6.4	33.6	59.8	13.7	20.1	21.4	44.1	29.1	40.4	
Islas Baleares	90.4	97.0	98.0	2.3	24.4	73.3	5.1	13.4	12.2	39.4	15.7	26.5	
Sur	54.8	58.7	59.0	12.1	22.3	65.6	3.3	29.8	30.0	47.6	39.6	48.1	
Andalucia	52.8	57.2	57.4	12.4	21.7	65.4	3.2	31.1	32.0	47.3	41.8	50.8	
Región de Murcia	67.3	67.2	68.0	12.1	26.9	61.0	3.8	21.4	18.3	46.2	26.9	28.6	
Ceuta y Melilla	63.6	72.3	71.4	0.3	6.9	31.5	-	-	26.4	71.6	36.2	58.4	
Canarias	69.3	74.3	74.8	8.4	17.8	71.8	5.2	25.5	20.9	48.9	26.3	39.0	
<b>France</b>	<b>109.8</b>	<b>103.9</b>	<b>105.6</b>	<b>4.6</b>	<b>26.6</b>	<b>68.7</b>	<b>94.8</b>	<b>10.3</b>	<b>12.0</b>	<b>41.5</b>	<b>13.9</b>	<b>26.7</b>	
Île de France	162.4	159.9	163.1	0.4	20.3	79.3	204.5	8.6	10.7	41.2	11.2	18.7	
Bassin Parisien	101.4	92.7	94.1	6.1	31.0	62.8	64.0	10.9	12.6	42.6	15.0	31.9	
Champagne-Ardenne	104.8	94.1	94.9	7.0	27.2	65.7	42.2	11.9	13.3	41.8	16.0	34.1	
Picardie	97.0	84.7	86.0	5.3	33.5	61.1	62.3	11.3	14.2	40.5	16.9	37.9	
Haute-Normandie	112.1	105.9	107.8	3.3	33.5	63.2	63.5	12.7	13.6	47.7	16.0	34.7	
Centre	103.3	91.9	93.5	6.5	30.8	62.7	79.9	10.0	10.9	42.3	13.4	26.3	
Basse-Normandie	91.6	88.9	90.4	7.3	29.6	63.1	47.0	10.4	13.2	41.4	15.1	32.8	
Bourgogne	97.7	90.4	91.5	7.6	30.0	62.4	75.9	9.6	11.0	40.7	13.5	27.9	
Nord - Pas-de-Calais	88.2	85.4	86.9	2.9	31.4	65.6	33.5	13.9	16.6	44.6	19.4	36.4	
Est	101.4	95.0	96.6	3.5	34.3	62.2	82.0	9.3	9.6	36.3	11.6	23.0	
Lorraine	94.7	88.7	89.9	2.8	31.1	66.7	53.0	10.9	11.3	39.8	13.6	29.3	
Alsace	114.2	105.1	107.5	2.6	35.9	61.4	122.1	7.0	7.8	29.3	9.1	17.9	
Franche-Comté	97.0	92.7	93.8	5.9	37.4	56.6	81.4	10.4	9.1	37.4	11.5	20.7	
Ouest	93.0	87.6	88.5	8.1	28.4	63.4	44.4	10.8	10.7	41.7	13.1	26.3	
Pays de la Loire	95.1	91.0	92.2	6.3	32.6	61.1	39.7	11.1	11.0	42.9	13.6	25.4	
Bretagne	92.0	86.4	86.8	8.7	25.1	66.1	47.4	10.4	9.9	39.5	12.1	25.0	
Poitou-Charentes	90.6	83.3	84.4	10.9	26.2	62.9	48.1	10.9	11.4	42.9	13.8	30.9	
Sud-Ouest	95.6	88.8	89.6	8.4	23.2	68.4	50.8	10.4	11.4	41.9	13.8	25.4	
Aquitaine	102.6	92.1	92.9	8.0	21.7	70.2	40.7	11.7	11.9	43.1	14.8	27.9	
Midi-Pyrénées	90.6	87.2	87.9	8.4	24.5	67.1	68.4	9.1	11.2	41.4	13.5	23.1	
Limousin	85.1	81.3	82.4	9.8	25.3	64.9	30.6	9.7	9.2	36.7	11.1	23.6	
Centre-Est	105.4	97.3	98.9	4.6	29.9	65.4	142.1	8.7	10.6	40.1	12.5	25.1	
Rhône-Alpes	109.5	100.4	102.2	3.5	30.5	65.9	162.8	8.4	10.5	39.5	12.2	23.7	
Auvergne	89.5	83.7	84.7	9.8	27.2	62.9	54.0	9.8	11.0	42.6	14.0	33.8	
Méditerranée	95.9	87.2	88.8	4.4	19.6	76.0	55.5	12.9	16.9	42.1	19.3	30.6	
Languedoc-Roussillon	88.8	78.3	80.2	7.8	19.4	72.8	41.3	14.2	17.8	44.5	20.8	32.0	
Provence-Alpes-Côte d'Azur	100.4	92.0	93.6	2.7	19.8	77.5	65.4	12.3	16.5	41.2	18.5	29.8	
Corse	80.2	82.0	82.8	6.6	14.5	78.9	8.7	11.9	15.2	34.2	19.7	30.6	
Départements d'Outre-Mer	41.3	46.5	46.5	-	-	-	-	-	-	-	-	-	
Guadeloupe	36.9	40.1	40.1	-	-	-	-	-	-	-	-	-	
Martinique	48.7	54.0	54.0	-	-	-	-	-	-	-	-	-	
Guyane	36.9	48.0	48.0	-	-	-	-	-	-	-	-	-	
Réunion	40.4	45.7	45.7	-	-	-	-	-	-	-	-	-	
<b>Ireland</b>	<b>80.8</b>	<b>96.5</b>	<b>94.8</b>	<b>10.9</b>	<b>28.5</b>	<b>60.4</b>	<b>33.3</b>	<b>18.1</b>	<b>10.1</b>	<b>58.0</b>	<b>10.1</b>	<b>15.8</b>	
<b>Italia</b>	<b>100.4</b>	<b>102.7</b>	<b>102.1</b>	<b>6.5</b>	<b>31.7</b>	<b>61.8</b>	<b>48.3</b>	<b>10.2</b>	<b>12.3</b>	<b>66.2</b>	<b>16.6</b>	<b>33.6</b>	
Nord Ovest	116.3	118.2	117.3	4.6	34.8	60.7	70.0	7.9	9.0	62.2	13.0	28.9	
Piemonte	116.8	117.5	116.4	4.6	39.6	55.8	80.4	7.9	8.7	61.6	12.6	26.8	

Employment rate (% population 15-64), 1997			Demography					Education			Region
			Population (1000s), 1996	Population density (nos/km <sup>2</sup> ), 1996	% population aged:			Educational attainment of 25-59 year olds (% total), 1997			
Total	Female	Male			<15	15-64	65+	Low	Medium	High	
68.5	54.1	83.2	199	86.4	16.4	64.1	19.5	67	24	10	Ionia Nisia
59.9	43.5	76.6	733	64.6	17.8	66.1	16.1	68	23	9	Dyiki Elada
55.6	34.4	78.7	863	42.6	15.7	67.4	16.9	65	25	11	Sterea Elada
66.2	47.5	86.1	871	43.3	15.2	65.2	19.5	62	28	11	Peloponnisos
52.4	37.2	69.3	3449	905.5	16.2	69.0	14.8	37	42	22	Atiki
64.6	46.8	83.2	1011	57.9	18.2	64.9	16.8	61	27	13	Nisia Aigaiou, Knti
52.5	29.8	76.2	184	48.0	16.6	61.0	22.4	61	27	12	Voreio Aigaiou
61.7	41.3	82.8	268	50.7	18.8	66.9	14.2	66	25	9	Noto Aigaiou
70.1	55.3	85.6	559	67.1	18.5	65.3	16.2	58	28	14	Kriti
48.3	33.7	63.1	39270	77.8	16.4	68.2	16.4	66	15	20	España
47.7	35.4	60.5	4322	95.4	14.0	67.8	18.2	67	14	18	Noroeste
49.9	38.3	61.8	2724	92.5	14.4	67.5	18.1	70	13	17	Galicie
43.2	29.8	57.4	1071	101.4	12.8	68.3	18.9	65	15	20	Principado de Asturias
45.9	32.0	60.0	527	99.4	14.7	68.1	17.1	62	16	21	Cantabria
52.0	36.6	67.3	4037	57.4	13.7	69.4	16.9	57	17	26	Noroeste
49.7	36.5	62.9	2069	285.0	13.4	71.6	15.1	53	19	28	Pais Vasco
56.1	39.8	72.2	527	50.5	14.5	68.7	16.8	59	15	26	Comunidad Foral de Navarra
54.0	37.4	70.3	261	51.7	14.3	67.4	18.2	64	13	22	La Rioja
54.0	35.0	72.7	1180	24.8	13.8	66.3	19.9	61	16	23	Aragón
49.4	35.5	63.8	5016	627.4	15.8	70.4	13.7	55	17	27	Comunidad de Madrid
46.6	28.6	64.2	5279	24.6	16.0	65.2	18.8	69	13	18	Centro
47.7	30.1	65.0	2510	26.6	14.0	66.1	20.0	63	15	21	Castilla y León
47.8	28.7	66.9	1694	21.4	17.5	64.2	18.2	74	11	15	Castilla-La Mancha
41.8	24.9	58.2	1075	25.8	18.5	64.8	16.8	75	10	15	Extremadura
53.3	39.1	67.8	10708	177.7	15.7	68.7	15.6	65	17	18	Este
55.3	41.6	69.0	6066	190.0	14.9	69.0	16.0	63	17	19	Cataluña
49.4	34.3	65.2	3913	167.9	16.6	68.4	15.0	67	15	17	Comunidad Valenciana
58.5	46.0	71.4	730	145.5	17.6	67.5	15.0	69	16	14	Islas Baleares
40.8	26.3	55.7	8346	84.6	19.8	67.3	12.9	70	13	17	Sur
39.5	25.2	54.3	7128	81.7	19.7	67.3	12.9	71	13	16	Andalucia
48.6	33.4	64.2	1084	95.8	19.7	67.2	13.1	66	15	19	Región de Murcia
42.2	26.7	58.7	133	4296.8	23.1	65.9	11.0	61	20	18	Ceuta y Melilla
47.6	34.5	61.1	1563	215.9	19.0	70.3	10.7	68	15	17	Canarias
58.7	52.3	67.2	58375	107.3	19.4	65.4	16.2	37	43	19	France
63.4	57.9	69.0	11044	919.4	20.2	68.4	11.4	34	38	29	Île de France
60.2	52.1	68.4	10483	72.0	20.0	64.5	15.5	42	43	15	BASSIN Parisien
58.2	49.2	67.5	1352	52.8	20.1	65.2	14.7	43	41	16	Champagne-Ardenne
58.3	50.5	66.2	1866	96.2	21.7	65.1	13.2	46	40	14	Picardie
60.3	52.0	68.5	1783	144.8	21.4	65.0	13.5	42	42	16	Haute-Normandie
61.9	53.8	70.2	2438	62.3	19.0	64.1	16.9	42	44	14	Centre
59.3	52.5	66.3	1419	80.7	19.8	64.2	16.0	42	42	16	Basse-Normandie
61.8	53.6	70.3	1625	51.5	18.2	63.7	18.1	38	46	16	Bourgogne
49.5	39.8	59.5	4004	322.6	22.3	64.5	13.2	46	41	13	Nord - Pas-de-Calais
60.6	52.7	68.4	5136	106.9	19.9	66.0	14.1	38	45	17	Est
57.9	49.9	65.9	2311	98.2	19.9	65.7	14.4	40	44	16	Lorraine
63.7	56.2	71.1	1708	206.3	19.9	67.0	13.1	34	48	18	Alsace
61.1	52.9	69.3	1117	68.9	19.7	65.2	15.1	40	44	16	Franche-Comté
61.5	54.4	68.6	7660	90.0	18.9	64.2	17.0	36	48	16	Ouest
62.1	54.6	69.6	3167	98.7	19.8	64.5	15.6	38	47	14	Pays de la Loire
61.0	54.0	68.0	2868	105.4	18.7	64.2	17.1	33	48	19	Bretagne
61.2	54.8	67.8	1625	63.0	17.4	63.4	19.3	38	47	15	Poitou-Charentes
60.0	52.8	67.4	6126	59.1	16.7	64.4	18.9	32	49	19	Sud-Ouest
58.3	50.2	66.7	2895	70.1	17.1	64.6	18.2	32	50	18	Aquitane
61.7	55.3	68.2	2513	55.4	16.8	64.6	18.6	32	47	21	Midi-Pyrénées
61.4	55.5	67.7	718	42.4	14.8	62.7	22.5	35	50	15	Limousin
61.9	54.9	69.1	6940	99.6	19.4	65.7	14.9	34	45	21	Centre-Est
62.5	55.8	69.4	5625	128.7	20.1	65.9	14.0	34	45	22	Rhône-Alpes
59.2	50.5	67.9	1315	50.5	16.6	64.8	18.6	38	45	17	Auvergne
53.2	45.0	62.1	6981	103.5	18.2	63.7	18.1	39	44	17	Méditerranée
52.0	44.6	59.9	2254	82.4	17.9	63.4	18.7	40	42	18	Languedoc-Roussillon
54.5	46.2	63.5	4465	142.2	18.4	63.8	17.8	38	45	17	Provence-Alpes-Côte d'Azur
38.9	25.8	54.3	261	30.1	17.8	64.6	17.6	64	26	10	Corse
.	.	.	1644	18.4	27.7	65.1	6.2	.	.	.	Départements d'Outre-Mer
.	.	.	425	249.4	26.7	65.8	6.1	.	.	.	Guadeloupe
.	.	.	390	345.7	24.2	65.9	7.4	.	.	.	Martinique
.	.	.	160	1.9	35.2	61.4	2.6	.	.	.	Guyane
.	.	.	670	265.7	28.8	65.0	6.2	.	.	.	Réunion
87.7	45.2	70.2	3826	61.6	24.0	64.5	11.5	49	28	23	Irlande
61.3	36.6	66.2	57461	190.7	14.9	68.3	16.8	69	32	9	Italia
55.9	43.0	66.8	6064	177.9	11.5	68.3	20.2	58	33	9	Nord Ovest
57.1	44.5	69.6	4294	169.1	11.9	69.0	19.1	60	32	8	Piemonte

Table 43 Main regional indicators

Region	Economy							Labour market				
	GDP/head (PPS), EUR15=100			Employment by sector (% of total), 1997			Eur. patent applications per million people, average 94-95-96	Unemployment rate (%)				
	1996	1996	average 1994-95-96	Agriculture	Industry	Services		Total, 1997	Total, 1997	Long term unemployed, 1997 (% of total unempl.)	Female, 1997	Young, 1997
Valle d'Aosta	129.2	131.1	130.4	6.6	22.7	70.9	27.0	5.0	4.1	37.0	5.3	11.2
Liguria	114.1	119.1	118.7	4.4	21.6	74.0	46.2	8.2	10.2	64.5	14.9	39.0
Lombardia	131.8	132.5	131.5	2.7	40.7	56.6	102.0	5.6	6.2	56.2	9.1	18.6
Nord Est	112.4	125.1	123.3	5.8	37.9	55.3	62.7	6.4	5.0	39.2	7.5	11.4
Trentino-Alto Adige	115.2	127.9	126.6	9.7	27.2	63.0	40.4	5.4	3.8	30.0	5.7	10.0
Veneto	111.7	124.4	122.3	5.2	41.1	53.7	62.7	6.2	4.8	37.7	7.4	10.9
Veneto	111.7	124.4	122.3	5.2	41.1	53.7	62.7	6.2	4.8	37.7	7.4	10.9
Emilia-Romagna	124.5	132.7	130.9	6.3	34.6	59.1	99.6	6.4	6.7	33.9	11.1	16.7
Centro	107.8	107.8	106.9	5.0	35.0	60.0	34.0	7.2	8.1	57.6	13.1	25.5
Toscana	111.9	110.7	109.8	3.9	34.3	61.8	37.0	7.4	8.5	57.9	13.4	26.9
Umbria	96.2	97.9	98.0	6.2	31.3	62.5	21.1	7.7	8.2	63.0	13.9	27.1
Marche	104.2	106.4	104.9	6.8	36.7	54.5	34.0	6.5	7.1	53.4	12.1	21.0
Lazio	112.1	113.8	113.3	4.6	19.9	75.6	29.1	9.1	13.3	72.3	18.0	47.0
Abruzzo-Molise	85.1	87.3	87.0	10.2	31.4	58.4	23.8	9.4	10.6	63.4	14.8	33.6
Abruzzo	87.5	89.6	89.5	8.9	32.5	58.7	29.1	8.6	8.8	62.7	12.3	28.7
Molise	75.8	78.6	77.4	15.5	27.1	57.5	3.5	12.2	17.2	65.0	23.7	49.9
Campania	66.9	65.9	66.3	10.3	22.4	67.3	5.9	21.5	26.1	79.3	34.1	64.9
Sud	66.3	67.3	67.2	12.2	23.6	64.1	3.6	14.9	20.5	68.5	29.2	49.7
Puglia	70.8	71.1	71.2	11.6	25.2	63.2	4.5	13.2	18.3	70.0	28.4	44.5
Basilicata	63.2	69.5	68.1	13.7	30.8	55.4	6.3	15.9	20.6	62.5	30.1	50.7
Calabria	58.6	59.2	59.1	13.1	18.0	69.0	1.3	17.8	24.9	67.6	34.3	62.6
Sicilia	67.5	65.7	66.3	12.0	20.1	67.9	9.8	16.0	24.0	73.7	33.1	60.4
Sardegna	73.8	72.5	74.0	12.5	22.8	64.7	7.2	16.2	20.5	68.4	29.3	51.0
Luxembourg (Grand-Duché)	137.3	166.5	170.3	2.4	23.3	74.2	66.4	2.5	2.5	34.6	3.6	7.2
Nederland	101.8	108.8	108.8	3.5	21.6	69.1	120.8	9.9	8.2	48.2	6.8	8.5
Noord-Nederland	120.7	103.3	102.1	4.9	24.1	64.6	66.6	-	6.8	58.8	9.1	10.8
Groningen	178.9	134.0	129.6	4.1	24.4	64.1	68.4	-	8.3	53.6	11.0	14.7
Friesland	82.6	87.3	87.5	5.1	24.4	65.5	63.2	-	6.4	61.8	8.5	10.7
Drenthe	98.4	87.4	88.0	5.8	23.3	64.1	68.9	-	5.6	63.3	7.4	5.9
Oost-Nederland	84.6	92.9	92.6	4.2	24.2	66.0	105.0	-	4.8	47.9	6.4	8.1
Overijssel	88.1	93.6	93.1	3.3	26.7	63.9	102.2	-	5.1	48.3	6.8	9.0
Gelderland	84.5	95.1	94.5	4.4	23.6	66.5	113.4	-	4.6	44.1	6.1	7.4
Flevoland	66.5	74.9	76.6	6.3	18.4	70.1	56.6	-	5.1	68.8	6.8	8.6
West-Nederland	109.0	115.0	114.0	2.8	17.2	74.1	96.9	-	5.1	44.6	6.7	8.7
Utrecht	99.4	120.0	118.7	1.8	15.9	75.6	99.9	-	4.1	29.2	5.4	6.6
Noord-Holland	117.2	120.6	119.0	2.4	16.9	74.6	81.6	-	5.3	45.4	7.0	9.6
Zuid-Holland	106.8	110.6	109.9	3.0	17.1	74.3	111.7	-	5.3	47.2	7.0	9.0
Zeeland	101.0	102.4	103.5	6.5	25.4	62.7	56.8	-	4.6	53.0	6.1	6.2
Zuid-Nederland	92.8	104.1	102.7	3.7	27.2	63.3	210.4	-	4.8	50.1	6.4	7.4
Noord-Brabant	94.7	107.1	105.4	3.9	26.9	63.6	259.3	-	4.6	49.7	6.1	7.4
Limburg (NL)	89.2	97.8	97.2	3.3	28.0	62.8	112.0	-	5.4	50.6	7.2	7.5
Oostenrijk	103.2	112.3	111.3	6.9	29.6	63.5	96.9	-	4.4	33.0	5.6	6.9
Oostenrijk	-	127.3	126.0	6.0	26.8	67.2	86.6	-	4.6	46.3	5.3	6.4
Burgenland	64.1	71.5	71.3	8.2	34.6	57.3	19.7	-	3.8	26.9	5.2	5.7
Niederösterreich	88.9	96.4	94.8	11.5	30.3	58.2	84.2	-	3.4	36.0	4.4	5.0
Wien	148.5	166.6	165.1	0.4	22.2	77.4	100.4	-	5.9	53.9	6.2	8.3
Südösterreich	-	90.2	89.2	9.4	31.2	59.4	82.4	-	5.1	33.4	7.1	8.4
Kärnten	83.3	89.8	89.7	8.0	28.8	63.2	71.9	-	4.8	21.7	8.4	10.2
Steiermark	81.5	90.4	89.0	10.0	32.3	57.6	87.2	-	4.8	39.6	6.6	7.6
Westösterreich	-	108.1	107.5	6.5	32.1	61.4	115.7	-	3.8	13.7	5.1	6.6
Oberösterreich	98.8	102.2	100.9	8.2	35.4	56.4	114.4	-	3.0	24.9	4.0	5.0
Salzburg	113.2	121.3	121.4	5.6	25.4	69.0	81.9	-	3.9	4.3	4.9	7.5
Tirol	103.1	107.8	108.1	5.5	26.0	68.5	96.9	-	5.4	4.4	7.4	9.7
Vorarlberg	108.8	112.5	111.9	3.0	40.0	57.0	209.1	-	4.1	16.6	5.7	6.7
Portugal	55.1	70.5	70.1	13.3	31.0	55.7	1.7	7.0	6.7	52.8	7.6	14.5
Continente	58.0	71.4	71.0	13.2	31.3	55.4	-	7.2	6.7	52.3	7.6	14.4
Norte	51.1	62.4	62.1	11.6	39.9	48.5	-	4.9	6.9	54.9	6.8	11.7
Centro	41.7	60.9	59.8	31.9	29.7	38.5	-	5.5	3.4	46.6	3.9	12.2
Lisboa e Vale do Tejo	79.2	88.5	88.5	3.8	25.2	71.0	-	9.7	7.9	53.7	9.5	17.6
Aleixo	37.1	59.7	58.0	14.2	24.5	61.2	-	11.9	10.4	38.6	15.9	22.5
Algarve	44.4	70.8	70.2	11.8	19.6	68.6	-	-	8.2	53.5	9.9	17.1
Açores	39.9	50.0	49.9	16.0	21.2	62.9	-	3.7	5.4	61.4	10.1	16.5
Madeira	40.2	54.5	53.8	12.5	27.6	59.8	-	4.5	5.4	54.3	5.2	14.3
Suomi/Finland	99.7	96.9	94.8	7.7	27.3	64.6	165.5	-	14.8	27.5	13.3	32.8
Manner-Suomi	99.6	96.8	94.7	7.7	27.4	64.6	174.3	-	14.9	27.6	13.3	32.9
Uusmaa	129.3	128.9	123.9	1.4	21.4	76.7	307.1	-	11.4	31.7	9.6	26.1
Etelä-Suomi	94.3	91.7	90.0	7.6	34.1	57.9	164.2	-	15.1	28.7	14.4	32.4
Itä-Suomi	83.5	74.1	74.0	12.5	23.5	63.8	55.1	-	18.7	24.5	15.7	38.4
Väst-Suomi	88.5	83.1	81.7	16.4	29.5	54.0	73.0	-	14.9	25.5	14.7	36.1
Pohjois-Suomi	86.8	82.7	83.0	9.6	23.8	66.4	171.9	-	18.6	23.5	15.9	38.4
Ahvenanmaa/Åland	131.9	118.6	119.5	20.7	15.5	63.8	-	-	4.6	9.7	4.1	15.8

Employment rate (% population 15-64), 1997			Demography						Education			Region
Total	Female	Male	Population ('000s), 1996	Population density (nos./km <sup>2</sup> ), 1996	% population aged:			Educational attainment of 25-59 year olds (% total), 1997				
					<15	15-64	65+	Low	Medium	High		
61.9	51.5	71.9	119	36.5	12.6	69.8	17.7	60	33	7	Valle d'Aosta	
52.2	38.4	66.4	1651	304.7	10.2	66.5	23.3	64	36	10	Liguria	
58.3	45.2	71.3	8669	375.3	13.0	70.7	16.3	57	34	9	Lombardia	
59.6	46.4	72.9	6558	164.7	13.2	69.4	17.4	59	33	6	Nord Est	
62.3	48.3	76.2	919	67.5	15.8	68.2	16.0	53	36	7	Trentino-Alto Adige	
59.7	46.1	73.4	4453	242.5	13.3	69.9	16.8	55	36	9	Veneto	
59.7	46.1	73.4	4453	242.5	13.3	69.9	16.8	61	32	7	Veneto	
63.2	51.2	75.2	3636	178.0	10.8	67.9	21.3	55	36	10	Emilia-Romagna	
56.6	42.9	70.6	5802	141.0	12.1	67.1	20.8	58	33	9	Centro	
56.4	43.0	70.2	3625	153.3	11.6	67.4	21.0	60	32	9	Toscana	
55.0	41.1	69.2	830	98.1	12.6	66.3	21.0	52	39	8	Umbria	
58.0	43.9	72.4	1448	149.3	13.1	66.7	20.2	58	33	9	Marche	
50.1	34.6	66.4	5217	302.8	14.4	69.7	15.8	50	36	12	Lazio	
51.8	36.5	67.4	1604	105.3	15.5	68.0	18.5	56	35	9	Abruzzo-Molise	
52.3	36.9	68.1	1274	118.0	15.4	68.2	18.4	55	35	9	Abruzzo	
49.6	35.1	64.5	331	74.5	16.0	65.1	19.0	58	34	9	Molise	
38.8	23.5	54.3	5785	425.5	20.4	67.2	12.4	61	30	9	Campania	
40.4	23.5	58.0	6770	152.4	18.6	67.1	14.3	63	28	9	Sud	
41.3	23.4	60.1	4088	211.2	18.5	67.7	13.8	65	27	8	Puglia	
42.1	26.6	57.7	608	60.8	17.8	66.1	16.1	63	29	7	Basilicata	
38.2	22.8	53.9	2074	137.5	19.2	66.0	14.8	60	31	10	Calabria	
38.1	19.4	57.6	5101	198.4	19.0	66.2	14.8	64	28	8	Sicilia	
43.1	28.0	60.5	1663	69.0	16.1	70.0	13.8	68	25	7	Sardegna	
60.3	45.6	74.8	416	160.6	18.5	67.4	14.1	62	27	20	Lussemburg (Grand-Duché)	
68.0	56.9	78.7	15631	374.0	18.4	68.3	13.3	34	42	24	Nederland	
63.4	51.9	74.5	1631	143.2	18.1	67.5	14.4	36	45	19	Noord-Nederland	
61.2	50.2	71.7	558	188.1	16.7	68.9	14.5	35	44	22	Groningen	
63.4	51.0	75.3	614	106.9	19.2	66.7	14.1	38	45	17	Friesland	
66.2	55.2	77.0	459	171.2	18.4	67.0	14.7	35	47	18	Dranthe	
67.9	55.7	79.8	3214	292.9	19.4	67.7	12.9	35	43	21	Oost-Nederland	
67.5	56.2	78.2	1056	308.8	19.3	67.4	13.3	35	46	19	Ovenijssel	
68.0	55.8	80.0	1881	365.7	18.7	68.1	13.2	35	42	23	Gelderland	
69.0	53.1	84.9	277	114.9	24.5	66.5	9.1	37	45	18	Flevoland	
69.1	59.1	79.0	7253	611.0	18.1	68.2	13.6	32	41	27	West-Nederland	
72.2	61.2	83.4	1075	749.5	18.8	68.8	12.4	28	38	34	Utrecht	
69.9	61.7	78.1	2472	608.9	17.4	69.1	13.5	30	42	28	Noord-Holland	
67.7	57.0	78.1	3339	968.9	18.4	67.7	13.8	34	41	25	Zuid-Holland	
67.1	54.2	79.7	368	125.5	18.5	65.5	16.1	37	47	16	Zaeland	
67.6	55.8	78.9	3432	470.7	18.0	69.5	12.5	36	42	22	Zuid-Nederland	
68.3	56.0	80.0	2297	452.1	18.4	69.6	12.0	34	42	24	Noord-Brabant	
66.2	55.2	76.7	1135	513.7	17.2	69.2	13.6	40	41	19	Limburg (NL)	
67.8	60.1	76.6	8098	98.1	17.5	67.3	15.2	25	66	9	Oostenrijk	
68.4	60.9	75.9	3396	144.1	16.2	67.3	16.5	24	65	11	Oostenreich	
66.2	56.9	75.2	275	69.4	16.2	66.4	17.4	35	59	6	Burgenland	
69.6	61.1	77.8	1524	79.5	17.5	66.4	16.1	25	68	7	Niederösterreich	
67.7	61.3	74.2	1595	3844.3	15.0	68.4	16.6	22	63	15	Wien	
65.0	54.8	75.2	1770	68.3	17.4	66.8	15.8	23	71	6	Stoösterreich	
63.4	52.9	74.1	563	59.0	17.9	66.5	15.6	20	75	6	Kärnten	
65.7	55.8	75.7	1207	73.7	17.1	66.9	15.9	24	70	6	Steiermark	
68.9	59.5	78.3	2894	84.2	19.1	67.6	13.4	27	66	7	Westösterreich	
69.8	60.8	78.7	1381	115.3	18.9	67.0	14.1	28	65	7	Oberösterreich	
69.5	61.6	77.7	509	71.2	18.7	68.2	13.1	23	67	10	Salzburg	
66.6	56.8	76.6	660	52.2	19.2	67.9	12.8	25	67	7	Tirol	
68.9	56.4	81.1	344	132.3	20.1	68.3	11.6	32	61	7	Vorarlberg	
67.4	58.5	77.0	9827	106.0	17.6	67.7	14.7	76	12	12	Portugal	
67.8	59.1	77.1	9428	106.2	17.3	67.9	14.8	76	12	12	Continente	
66.7	58.9	75.1	3538	166.3	19.4	68.3	12.3	80	10	10	Norte	
81.4	73.5	90.0	1711	72.3	16.6	65.7	17.7	81	9	10	Centro	
63.5	54.5	73.2	3312	277.6	15.9	68.4	14.7	68	17	16	Lisboa e Vale do Tejo	
62.5	48.3	77.3	522	19.4	15.2	63.9	20.9	82	9	8	Alentejo	
64.7	52.9	76.2	346	69.3	16.4	65.4	18.1	83	11	5	Algarve	
58.5	40.5	77.1	242	103.9	23.9	63.9	12.2	84	9	6	Açores	
63.3	54.7	73.2	258	330.9	21.4	66.7	12.0	85	10	5	Madeira	
62.2	58.2	68.2	8128	15.2	19.0	66.7	14.3	37	43	19	Suomi/Finland	
62.2	59.2	65.2	5099	15.1	19.0	66.7	14.3	27	51	21	Manner-Suomi	
67.8	65.3	70.5	1335	128.3	19.0	69.5	11.5	25	48	27	Uusmaa	
62.5	58.1	66.8	1797	30.9	17.9	66.3	15.9	29	51	20	Etelä-Suomi	
54.7	53.5	55.8	703	8.3	18.8	65.4	15.8	26	54	18	Itä-Suomi	
61.0	57.6	64.2	706	15.1	19.8	64.5	15.7	29	53	18	Väst-Suomi	
57.3	54.5	60.1	559	4.1	22.0	65.8	12.3	23	57	20	Pohjois-Suomi	
75.8	63.5	82.6	25	16.2	19.0	65.5	16.3	32	54	15	Ahvenanmaa/Åland	

**Table 43 Main regional indicators**

Region	Economy							Labour market				
	GDP/head (PPS), EUR15=100			Employment by sector (% of total), 1997			Eur. patent applications per million people average 94-95-96	Unemployment rate (%)				
	1986	1996	average 1994-95-96	Agriculture	Industry	Services		Total, 1987	Total, 1997	Long term unemployed, 1997 (% of total unempl)	Female, 1997	Young, 1997
<b>Sweden</b>	111.5	101.2	100.3	3.1	25.8	70.9	191.4	-	10.4	33.2	8.7	21.9
Stockholm	132.6	123.1	122.1	0.6	16.4	82.9	311.6	-	7.9	31.8	7.2	15.2
Ostra Mellansverige	102.2	92.4	91.0	3.8	28.6	67.4	165.2	-	10.2	30.8	9.7	22.8
Smaland Med Oarna	108.8	98.8	97.4	5.7	34.0	60.3	98.9	-	8.6	33.6	9.1	17.6
Sydsvrige	104.3	92.9	92.5	4.0	25.9	70.2	197.1	-	11.9	36.2	11.8	23.2
Vastsvrige	111.3	97.6	96.8	3.1	28.0	68.8	183.4	-	10.4	35.1	10.2	20.7
Norra Mellansverige	103.0	97.0	96.1	3.7	30.4	65.6	154.4	-	12.3	27.7	11.0	28.1
Mellansta Norrland	110.8	99.3	99.4	5.1	26.0	68.9	20.2	-	13.0	32.2	10.1	31.1
Ovre Norrland	109.2	96.9	97.5	2.4	23.5	73.8	148.5	-	13.3	34.3	10.3	32.2
<b>United Kingdom</b>	98.8	99.8	98.0	1.9	26.8	71.1	78.3	11.0	7.1	38.2	5.8	13.6
<b>North</b>	87.6	87.2	86.2	1.7	31.3	66.7	-	14.5	9.3	40.4	6.8	18.0
Cleveland, Durham	83.5	82.7	81.6	1.0	32.8	65.9	-	15.3	9.6	39.7	7.0	18.7
Cumbria	101.0	101.3	101.5	6.3	31.5	61.9	-	9.1	6.9	35.4	5.5	13.7
Northumberland, Tyne and Wear	86.6	86.1	84.6	0.5	30.1	69.2	-	18.7	9.9	42.3	7.1	19.0
Yorkshire and Humberside	92.3	89.4	88.3	1.5	30.0	68.4	-	12.3	7.9	35.6	6.3	16.2
Humberside	92.6	94.8	92.7	1.9	34.4	63.4	-	13.8	8.7	32.0	7.2	18.4
North Yorkshire	102.7	100.5	99.3	4.5	24.1	71.5	-	8.0	4.8	30.5	4.4	9.4
South Yorkshire	84.8	74.4	73.7	0.4	32.0	67.5	-	15.7	10.0	38.8	7.6	19.6
West Yorkshire	93.8	92.5	91.8	0.7	29.3	69.7	-	11.2	7.4	36.1	5.7	15.3
East Midlands	95.2	94.1	93.7	1.8	33.5	64.6	-	9.9	6.0	35.9	4.9	12.1
Derbyshire, Nottinghamshire	92.7	89.7	88.7	1.1	34.4	64.3	-	11.2	7.1	38.5	5.6	14.2
Leicestershire, Northamptonshire	101.6	101.7	102.1	1.3	34.9	63.7	-	7.9	4.8	33.5	4.1	9.5
Lincolnshire	88.4	89.6	89.2	5.6	26.5	67.7	-	10.5	5.7	30.2	5.1	11.3
East Anglia	98.9	99.5	98.3	3.5	27.7	68.4	-	8.0	5.5	32.5	4.9	10.4
South East (UK)	116.1	117.8	114.7	1.1	21.1	77.7	-	8.1	6.6	40.9	5.8	11.6
Bedfordshire, Hertfordshire	103.3	102.2	99.7	0.9	24.9	73.8	-	6.1	4.1	35.1	3.6	7.6
Berkshire, Buckinghamshire, Oxfordshire	105.9	123.7	120.2	1.9	24.1	73.9	-	4.9	3.2	31.8	2.7	5.7
Surrey, East-West Sussex	93.4	104.5	99.3	1.6	20.6	77.6	-	5.3	4.1	38.4	3.5	7.1
Essex	84.9	87.2	84.8	1.5	27.0	71.4	-	7.4	5.7	37.8	5.0	10.5
Greater London (UK)	147.5	140.4	138.4	0.3	15.7	83.7	-	10.8	9.7	44.5	8.7	16.6
Hampshire, Isle of Wight	101.6	103.5	97.2	1.6	25.9	72.4	-	7.6	4.7	36.4	3.9	8.6
Kent	86.4	91.8	90.2	1.8	25.5	72.7	-	8.3	6.3	35.4	5.3	12.1
South West (UK)	93.0	94.6	93.3	3.2	25.4	71.2	-	8.6	5.7	34.4	4.9	11.0
Avon, Gloucestershire, Wiltshire	103.7	108.8	105.9	1.9	26.3	71.6	-	7.7	5.0	34.7	4.3	9.2
Cornwall, Devon	81.8	80.1	79.9	5.0	24.1	70.7	-	10.8	7.3	34.1	6.3	15.0
Dorset, Somerset	88.8	87.8	88.0	3.5	25.3	70.9	-	7.5	5.1	34.6	4.3	9.2
West Midlands	89.7	93.4	91.7	1.9	34.3	63.7	-	12.3	7.0	39.1	5.9	14.0
Hereford & Worcester, Warwickshire	83.1	100.0	96.1	2.8	29.8	67.2	-	8.9	4.6	31.0	4.2	9.4
Shropshire, Staffordshire	84.1	88.1	84.7	3.1	35.0	61.8	-	10.0	4.9	29.1	4.2	10.2
West Midlands (County)	95.8	93.4	93.7	0.5	36.3	62.9	-	15.0	9.4	44.2	7.8	17.9
North West (UK)	91.9	89.8	88.4	0.8	29.0	70.1	-	13.3	7.7	35.7	5.9	16.0
Cheshire	102.1	113.3	110.6	1.2	30.0	68.7	-	10.6	5.4	29.2	4.4	11.5
Greater Manchester	95.0	91.3	89.8	0.4	29.1	70.4	-	12.8	7.4	33.8	5.6	15.2
Lancashire	86.4	87.8	86.4	1.7	31.0	67.1	-	11.1	5.7	26.0	4.3	11.8
Merseyside	85.8	73.1	72.5	0.1	25.3	74.2	-	18.2	12.1	44.9	9.1	24.7
<b>Wales</b>	82.9	83.0	82.0	3.4	28.7	67.6	-	12.8	7.5	35.5	5.8	14.8
Clwyd, Dyfed, Gwynedd, Powys	80.1	80.7	79.4	7.4	26.7	65.5	-	12.5	7.2	36.3	5.8	13.9
Gwent, Mid-South-West Glamorgan	84.8	84.4	83.7	0.8	30.0	68.9	-	12.9	7.8	34.9	5.7	15.3
<b>Scotland</b>	92.4	96.3	96.8	2.7	26.8	70.4	-	14.6	8.0	32.6	6.2	15.2
Borders-Central-Fife-Lothian-Tayside	94.6	103.7	100.9	2.7	25.7	71.4	-	13.1	7.3	31.4	5.7	14.4
Dumfries And Galloway, Strathclyde	86.0	90.2	89.5	1.3	26.9	71.8	-	16.8	9.3	34.5	6.9	17.2
Highlands, Islands	86.2	80.1	79.7	5.6	26.3	68.1	-	13.8	8.4	31.2	7.4	13.4
Grampian	121.6	126.0	124.8	6.1	30.3	63.1	-	10.0	4.8	24.5	4.4	9.6
<b>Northern Ireland</b>	78.8	81.1	80.2	5.2	27.0	66.8	-	18.6	10.3	58.7	7.6	16.6

<sup>100</sup> average GDP/head 1994-95-96 = 74.96

F (DOM): GDP 1986 and 1994 figures; population by age class 1992; unemployment 1996

FIN: patent applications: 1995

Source: Eurostat, REGIO; DGXVI calculations

Employment rate (% population 15-64), 1997			Demography					Education			Region
			Population ('000s), 1996	Population density (nos./km <sup>2</sup> ), 1996	% population aged:			Educational attainment of 25-59 year olds (% total), 1997			
Total	Female	Male			<15	15-64	65+	Low	Medium	High	
67.7	65.0	70.3	8841	21.5	18.8	63.7	17.8	23	48	28	Sverige
68.1	66.8	69.4	1735	267.3	18.6	66.3	15.0	17	45	38	Stockholm
67.6	64.5	70.5	1500	39.0	19.1	63.6	17.3	24	50	26	Ostra Mellansverige
71.2	66.9	75.4	793	24.2	19.3	61.8	18.9	30	47	23	Smaland Med Oarna
66.0	62.1	69.8	1265	90.6	18.4	63.5	18.1	25	48	27	Sydsvenska
68.8	65.1	72.3	1770	59.2	19.3	63.3	17.5	24	49	26	Vastsvenska
65.0	61.8	67.9	860	13.4	18.4	62.0	19.5	24	55	21	Norra Mellansverige
69.0	69.9	68.2	393	5.5	18.0	62.2	19.8	24	53	23	Mellersta Norrland
64.6	64.2	64.9	525	3.4	19.2	64.1	16.7	20	55	26	OvRE Norrland
70.7	63.8	77.6	58901	243.2	19.3	64.9	15.7	45	32	23	United Kingdom
65.1	59.2	70.9	3091	200.5	19.2	64.6	16.2	47	34	19	North
65.6	59.4	71.9	1166	385.3	20.0	64.8	15.3	47	34	19	Cleveland, Durham
70.3	63.3	77.1	491	71.9	18.2	64.1	17.7	40	41	19	Cumbria
62.9	57.7	68.0	1435	257.8	18.9	64.7	16.4	50	31	19	Northumberland, Tyne and Wear
68.2	61.9	74.4	5036	326.8	19.5	64.6	15.9	46	33	21	Yorkshire and Humberside
65.8	57.5	73.8	887	252.8	19.6	64.1	16.3	47	33	20	Humberside
75.8	67.6	84.0	735	88.4	18.0	64.2	17.9	40	34	26	North Yorkshire
61.5	56.5	66.2	1305	836.9	19.1	64.9	16.0	50	32	19	South Yorkshire
70.7	64.9	76.5	2109	1037.0	20.2	64.9	14.9	46	33	21	West Yorkshire
73.4	66.8	79.8	4141	265.0	19.2	65.0	15.8	47	32	21	East Midlands
71.1	64.7	77.3	1994	416.3	18.9	65.1	15.9	46	32	22	Derbyshire, Nottinghamshire
76.3	68.7	83.7	1532	311.5	20.0	65.5	14.6	48	32	20	Leicestershire, Northamptonshire
73.2	68.6	77.9	616	104.0	18.0	63.3	18.7	50	33	18	Lincolnshire
73.6	66.0	81.1	2142	170.4	18.6	64.2	17.2	45	34	21	East Anglia
73.3	65.8	80.6	18120	665.6	19.2	65.9	14.9	44	29	27	South East (UK)
77.2	69.8	84.4	1565	544.2	20.0	65.9	14.1	39	34	27	Bedfordshire, Hertfordshire
80.0	71.7	87.7	2066	359.8	19.9	67.3	12.9	39	31	30	Berkshire, Buckinghamshire, Oxfordshire
77.3	71.0	83.8	2519	461.4	17.8	63.1	19.1	40	32	28	Surrey, East-West Sussex
72.7	63.8	81.2	1586	431.6	16.9	64.9	16.3	52	32	17	Essex
69.0	62.1	75.9	7074	448.3	19.4	67.3	13.3	45	24	31	Greater London (UK)
74.7	67.0	82.5	1753	421.5	19.0	65.0	16.0	43	34	23	Hampshire, Isle of Wight
72.5	63.7	81.4	1557	417.0	19.2	64.2	16.5	46	33	21	Kent
76.0	69.1	82.9	4842	203.2	18.1	63.3	18.6	41	35	24	South West (UK)
78.5	71.8	84.9	2134	286.1	18.6	65.0	16.3	40	33	27	Avon, Gloucestershire, Wiltshire
72.2	65.4	79.1	1543	150.3	17.8	62.2	20.0	42	37	21	Cornwall, Devon
76.4	69.1	83.8	1165	190.8	17.5	61.6	21.0	40	36	24	Dorset, Somerset
70.6	62.1	78.9	5317	408.8	19.8	64.6	15.5	50	30	21	West Midlands
78.1	69.2	86.4	1197	202.8	18.6	65.1	16.3	43	28	29	Hereford & Worcester, Warwickshire
72.4	63.7	81.1	1477	238.1	19.1	65.6	15.3	47	34	19	Shropshire, Staffordshire
66.0	57.9	74.0	2642	2939.3	20.7	63.9	15.4	54	29	17	WEST Midlands (County)
67.6	61.3	73.8	6401	871.6	20.0	64.4	15.6	47	32	22	North West (UK)
71.1	63.7	78.5	980	420.4	19.4	65.4	15.2	42	32	26	Cheshire
67.2	60.7	73.5	2576	2002.7	20.5	64.6	14.8	48	31	21	Greater Manchester
71.6	65.2	77.8	1425	464.1	19.6	63.7	16.6	45	34	21	Lancashire
61.7	57.1	66.5	1420	2168.6	20.0	63.9	16.1	50	31	20	Merseyside
66.3	60.2	72.3	2921	140.7	19.5	63.2	17.3	49	30	20	Wales
68.0	61.2	74.6	1134	66.2	18.6	62.5	18.9	47	32	22	Clwyd, Dyfed, Gwynedd, Powys
65.2	59.7	70.9	1787	492.2	20.1	63.6	16.3	51	29	20	Gwent, Mid-South-West Glamorgan
68.0	62.1	74.0	5128	66.5	18.8	66.0	15.2	38	38	25	Scotland
70.4	64.0	77.1	1891	105.9	18.3	66.2	15.6	37	37	26	Borders-Central-Fife-Lothian-Tayside
63.4	58.8	68.1	2425	121.9	19.1	65.8	15.1	40	38	22	Dumfries and Galloway, Strathclyde
73.9	68.5	79.1	280	9.2	19.6	64.7	15.5	34	39	28	Highlands, Islands
77.1	67.5	85.8	531	61.0	19.0	67.0	14.0	35	36	29	Grampian
64.2	57.0	71.5	1663	123.4	23.4	63.4	12.7	44	36	20	Northern Ireland

UK (Wales): population by age class 1995  
 Educational attainment: 1997 labour force survey  
 (according to ISCED classification low = less than ISCED 3; medium = ISCED 3; high = ISCED 5, 6 and 7)