

**MEASURING DISPARITIES
FOR AREA DESIGNATION PURPOSES:
ISSUES FOR THE EUROPEAN UNION**

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1. INTRODUCTION

The identification and measurement of regional disparities is fundamental to the design of policies intended to address perceived inequalities between areas. In practice, the exercise is fraught with uncertainties and contradictions and complicated by the impact of trends over time.

Within the European Union, Member States display a range of approaches to identifying areas for spatially-targeted policies. This reflects different perceptions of what constitutes a spatial problem; different approaches to selecting areas for policy intervention; different choices of indicator to identify the presence of particular characteristics; different approaches to prioritising or combining the results of any such analysis; and different political sensitivities.

At the European level, the difficult methodological issues addressed within Member States are compounded by the technical difficulties involved in comparative analysis across a wide range of countries. Moreover, such analyses have important consequences, not the least of which is that particular measures of disadvantage determine access to the Structural Funds.

A related issue is the prospect of EU enlargement. The accession of a number of central and eastern European states would radically alter the regional economic composition of the EU and impact directly on the relative prosperity of the current membership. There is acute awareness among the present beneficiaries of the Structural Funds that future access to the Funds may be in jeopardy.

A notable feature of spatially-targeted policies in the EU Member States is the number and range of such policies. It is increasingly rare for a single map to encapsulate spatial inequalities. Instead, there is growing tendency to characterise areas according to different measures and implement policies perceived to be suited to those characteristics. This is reflected in the emphasis on urban policy, especially in the UK, and more recently France; in the existence of separate policy maps for large firms and SMEs; in the emergence of enterprise zones focused on unemployment blackspots; in the designation of rural areas, former defence areas, border regions and so on. This emphasis on the characterisation of regions, and differentiated policy responses, has been reinforced by the Structural Funds typology of Objective 1, 2, 5(b) and 6 regions as well as a series of spatially-focused Community Initiatives.

The targeting of spatial policies depends critically on the ability to identify the characteristics of different areas. This, in turn, hinges on the availability of information about the areas concerned and the development of appropriate mechanisms for interpreting and analysing that information. Difficult practical problems arise from these requirements. In addition, there are other important considerations. Area designation for the purposes of policy targeting is frequently politically sensitive in the domestic arena since inclusion in the list of priority areas determines access to funding. Of increasing importance over the last decade or so has been the role of EU policies. EU competition policy has limited the room for manoeuvre of policy-makers in designating national assisted areas maps; in parallel, and often closely-interrelated, the EU typology of regions for Structural Fund

purposes has increasingly influenced national policy designs. These factors conspire to make the measurement of regional disparities for policy purposes a complicated and sensitive task.

This paper considers some of the issues and difficulties that arise in measuring disparities for area designation purposes. It draws on the experiences of the Member States in designating assisted areas and on the approaches of the European Commission to assessing regional problems in the context of both competition policy and the Structural Funds.

The discussion centres around four main issues:

- What types of disparity are addressed?
- What indicators can be used to measure the disparities identified?
- What factors underlie these disparities?
- What issues arise in the wider European context?

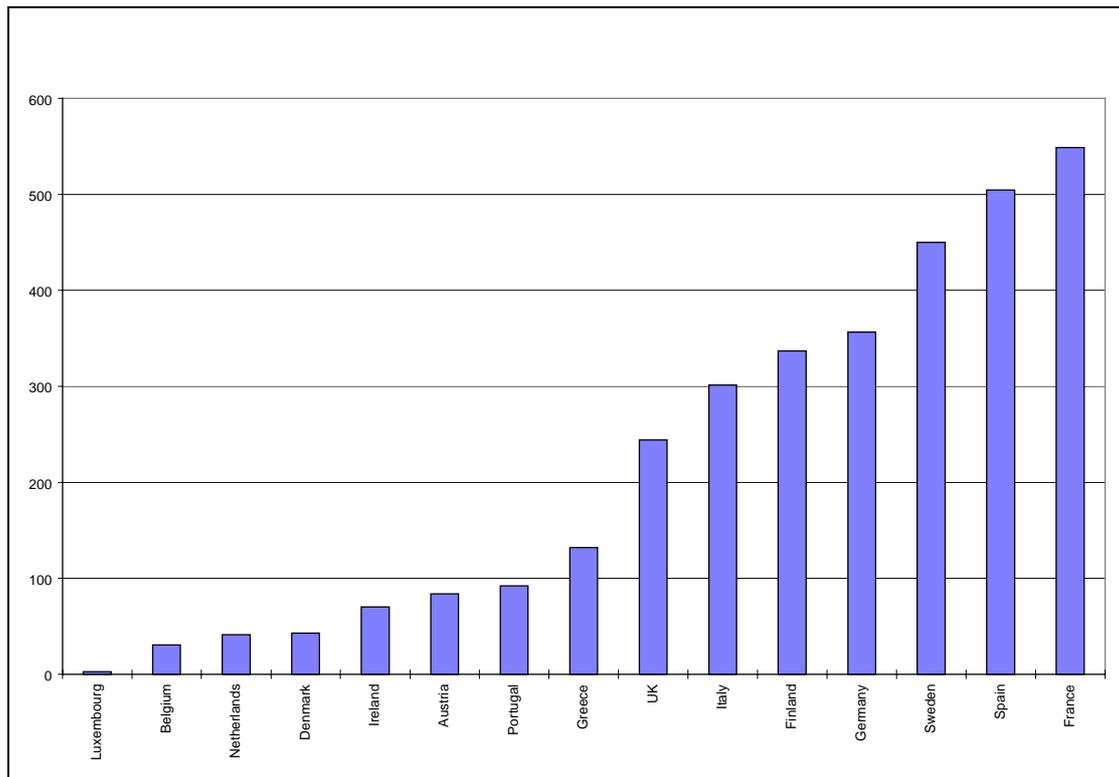
2. TYPES OF DISPARITY

Underpinning the measurement of regional disparities is the conceptualisation of the type of regional inequality which policy ultimately seeks to address. Two basic points are worth making at this stage. First, disparities are not always perceived in the same manner. For example, in some countries, notably the Nordic Member States, peripheral and sparsely-populated areas are regarded as disadvantaged; in other countries, these features are regarded as characteristics of the areas concerned rather than disadvantages *per se*. The second point is that the link between regional policy and regional disparities is not self-evident. The discussion below distinguishes between the factors that determine disparity and the measurement of disparities themselves. It is notable that, for the most part, and for a variety of reasons, area designation systems tend to map the latter rather than the former.

Looking across the EU, the Member States display a range of preoccupations, reflecting their very different geographical circumstances, levels of economic development and extent of social problems as well as the different scale of their internal regional disparities. The conceptualisation of regional problems varies from country to country, but there are essentially three types of disparity addressed:

- physical disparities (those associated with geographical or natural conditions);
- economic disparities (those concerned with differences in the quality or quantity of output of a region); and
- and social disparities (those concerned with the income or standard of living of the population).

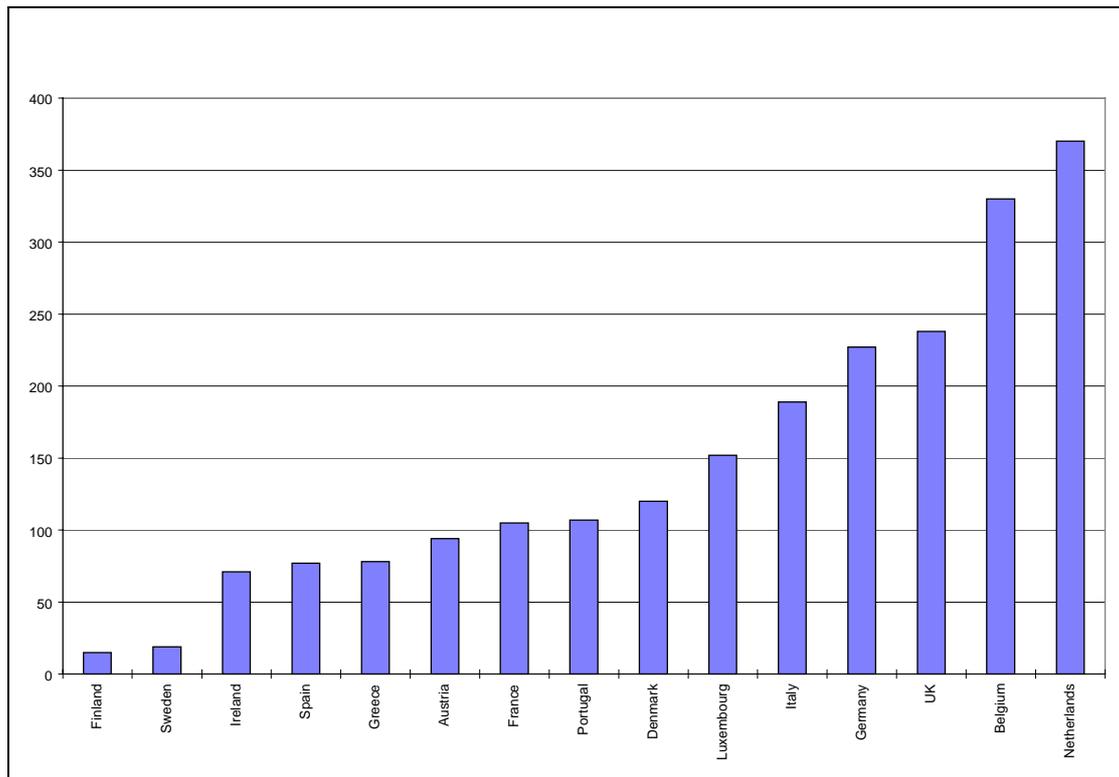
The *physical* environment of the European Union is one of great variety comprising the extremes of northern tundra in Finland and Sweden, extensive mountain ranges in Austria, France and Italy and areas of scrub and steppe vegetation in Greece and Spain. The vast differences between countries in size of national territory and population density are reflected in Chart 1 and Chart 2; moreover, national figures on population density average out very wide regional variations within countries.

Chart 1: Surface Area of EU Member States (1,000 km²)

Source: EUROSTAT, 1995a.

Within countries, physical disparities and natural conditions are a consideration in many Member States, but are most in evidence at the periphery of the EU. In the two Nordic Member States peripherality and climate are the central preoccupations of regional policy. Elsewhere, geographical issues are of less overarching importance, although they are a consideration everywhere with the exception of the Benelux countries. All four of the Cohesion countries, and to some extent Italy, face problems associated with peripherality, both in a domestic context and in relation to the rest of the European Union. In France and Germany, geographical factors are recognised through measures of proximity to infrastructure; in the UK, peripherality was used as a measure in the last area designation exercise; and in Austria, policy reflects the disadvantages resulting from peripherality in the east and the mountainous character of the west.

At the European level, physical disadvantage is only explicitly recognised in the context of the two Nordic countries (although in the past Community Initiatives have been operated for certain very remote regions). Accession negotiations resulted in a new typology of problem region, Objective 6, targeting areas with extremely low population density (fewer than 8 inhabitants per km²). In parallel, special provisions were made under the competition policy rules to enable the national authorities to continue offering policies that offset some of the disadvantages with peripheral locations (areas with fewer than 12.5 inhabitants per km²).

Chart 2: Population Density in the EU (inhabitants per km²)

Source: EUROSTAT, 1995a

It may seem self-evident, but it is worth noting that physical disparities are different in nature from economic and social disparities; in particular, the disparities are typically permanent and not generally “man-made”. This has direct implications for policy design. Policy can merely mitigate some of the disadvantages, reduce some of the extra costs associated with peripherality or insularity or promote activities for which geography is less important; it cannot change the underlying conditions. This is important in the context of EU competition policy which, for the most part, has insisted that support for firms take the form of assistance related to initial investment or job creation, in spite of the recognition that island regions and peripheral locations suffer permanent cost disadvantages.¹

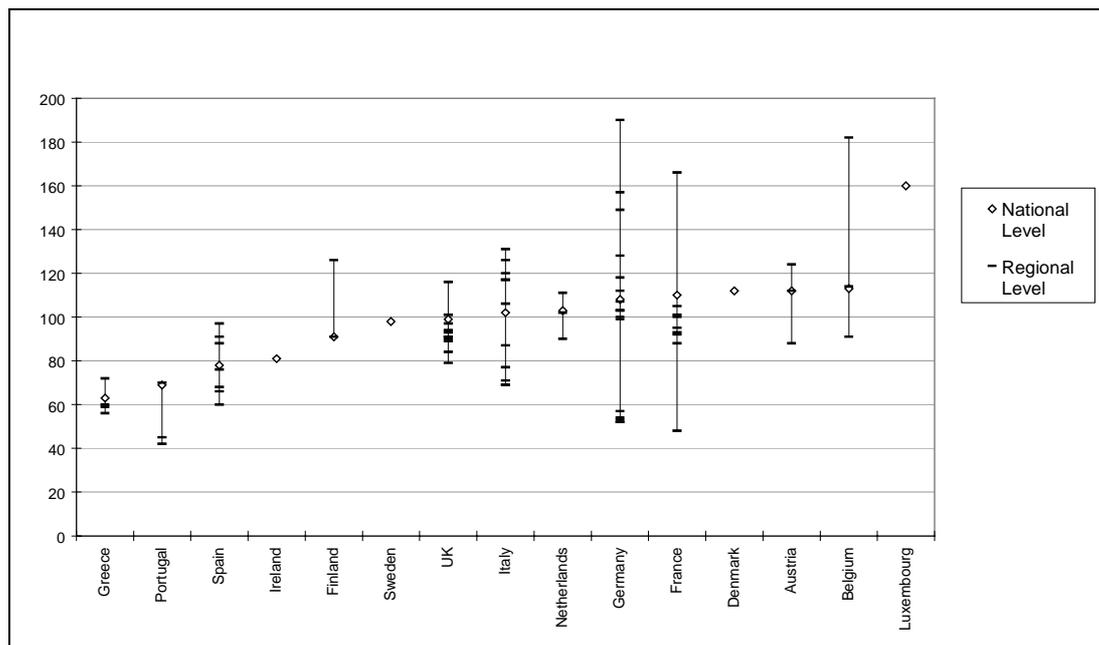
Regional disparities in *economic* development across the EU are also wide. Regional GDP per head measured in purchasing power parities ranges from 190 percent of the EU15 average (Hamburg) to 42 percent (Alentejo, Portugal).² More will be said later about the problems of using GDP as an indicator and of the comparability of the data between countries and regions; nevertheless, these data are quite striking and are illustrated in Chart 3. Within countries, concern with disparities in levels of economic

¹ Communication on the Method of Application of Article 92(3)(a) and (c) to Regional Aid, OJEC C 212; 12 August 1998.

² EUROSTAT (1996) Per capita GDP in the European Union’s regions, *Statistics in Focus*, 1, Luxembourg. (Figures are for 1993).

development is most in evidence in the four Cohesion countries. This probably reflects the close relationship between national regional policy and the implementation of the Structural Funds in those countries. Disparities in levels of economic development are also an important consideration in Germany and Italy, where the notable feature of the economic geography of these countries is the clear divide between new and old *Länder* in Germany and between north and south in Italy.

Chart 3: National and Regional Disparities in GDP/PPS per Head in 1993 (EU15=100)



Source: EPRC calculations from EUROSTAT 1996

In terms of EU policies, levels of economic development (measured in terms of *per capita* GDP) largely determine access to the Structural Funds (most notably through Objective 1) and are a key consideration in the reviews undertaken by the competition policy authorities on whether Member States will be authorised to operate their own regional aid policies and in which areas.

The third type of disparity is concerned with *social* inequalities, notably differences in living conditions and income. In this context, it is important to distinguish between the income attributed to a region in the measurement of GDP and the prosperity of the inhabitants of that region; there is no direct link between inter-regional and inter-personal income differences.

In some countries, for example Germany and Spain, there is an explicit constitutional commitment to equalising standards of living. Elsewhere, social disparities are primarily concerned with issues of employment. This is especially true of the UK where the rationale for regional policy is a social one and the aim of policy is the long-term reduction of imbalances in job opportunities. In France and Wallonia (Belgium),

the prime concern is also with levels of unemployment and this drives the selection of assisted areas. Germany, Italy and Spain are interesting in having a “dual” regional problem. On the one hand, there are substantial parts of the country that are economically underdeveloped - the new *Länder*, the *Mezzogiorno* and much of Spain - but in the remainder of the country, there are frequently serious employment-related problems.

For European policy purposes, measures of social disparity have primarily been considered in relation to unemployment. Levels of unemployment are the main criteria in determining eligibility for Objective 2. In addition, unemployment “thresholds” have been developed as a means for helping to determine whether regional aid is justified in the context of competition policy.

3. REGIONAL DISPARITY INDICATORS

A key part of the design of any spatially-targeted policy is the development of a methodology to select the areas at which policy should be aimed. At the level of the Member States, there is wide spectrum of approaches to this task. In this context, it is important to stress that any analysis for policy purposes is influenced significantly by a number of factors that are essentially distinct from “technical” decisions about the choice of indicators. Some of these factors relate to domestic circumstances or traditions: the extent to which there is a qualitative input to the process; the degree of public consultation thought desirable; and the account taken of the type of policy instrument for which targeting is being designed.

The “European dimension” also influences national policy-maker methods of measuring disparities, both in the context of the Structural Fund assisted areas and the competition policy control of national assisted areas. This section is less concerned with the design of area designation methodologies *per se*³ and focuses instead on the indicators used for measuring perceived inequalities. In considering the country coverage of the discussion below, it is important to note that a number of countries do not operate explicit and quantified systems of designating areas: this is true of Greece, Ireland and Spain and was largely the case in the last French area designation exercise. It should also be noted that the allocation of indicators to the “physical” “economic” or “social” category is, in some senses, arbitrary. In practice, it is impossible to classify indicators in a way that is not open to debate. Nevertheless, the three categories do provide a useful framework for reviewing problem region indicators across the EU.

As noted earlier, disparities related to the *physical* environment are a key factor taken into account in the two Nordic Member States; they are also a consideration (to widely varying degrees) in all but the Benelux countries. At the European level too, the impact of the natural environment has been recognised in the context of both Structural Fund and competition policy area designation systems.

The indicators of *physical disparities* used at both the Member State and EU levels are set out in Figure 1. The measurement of disadvantage related to the physical environment is a difficult task. Peripherality, by its nature is relative; distance from main centres and climate gradually change through a territory. Largely reflecting this, the indicators used for measuring physical disparities are primarily concerned with their effects, most notably on population density and migration patterns. Interestingly, however, in the UK, population density is used in the reverse sense, as a “measure of ‘urbanness’ and its attendant problems”.

³ These were reviewed in detail in Wishlade, F. and Yuill, D. (1995) *Issues and Options in Area Designation*, report to the regional policy research consortium presented at Ross Priory, Loch Lomondside, 24 October 1995.

Figure 1: Indicators of Physical Disparities

	Fi	Fr ¹	Ge	P	Sw	UK	DG4	DG16
Climate	√				√			
Distance to market/ peripherality/ accessibility		√	√	√	√	√		
Population density	√	√	√	√	√	√	√	√
Population change	√	√		√	√			

Notes: (1) For France, the indicators refer to the 1982 area designation exercise when a more formal approach was used.

In Germany, “accessibility” is the main indicator considered under the infrastructure component of the current (1996) area designation analysis. It takes account of road, rail, air and freight transport. For each of these, the time required to reach certain specified agglomeration areas (or the nearest large agglomeration in a neighbouring country in the case of border regions) was calculated. In France, peripherality was mainly perceived in terms of distance from Paris. In the UK, average distance to markets, or degree of remoteness from main business centres, was calculated and related to working population.

The indicators used both nationally and by the Commission to express measures of *economic disparity* are illustrated in Figure 2. This shows that Belgium, Finland and the Netherlands all utilise GDP per head as measures of regional prosperity; in Denmark, a measure of tax income is used as a substitute in the absence of relevant GDP figures. More importantly, perhaps, measures of per capita GDP at the regional level are the key criteria used by the European Commission in determining the presence of regional disparities.

Figure 2: Indicators of Economic Disparities

	B	D	Fi	Fr	Ge	N	P	Sw	UK	DG4	DG16
GDP per head	√		√			√				√	√
Tax income		√									
Industrial/ activity structure	√	√	√	√			√	√	√		√
Infrastructure/ amenity					√		√				
Economic prospects				√	√				√		
Demographic trends	√		√	√				√	√		√

For competition policy purposes, GDP per head is the sole indicator used in approving areas as underdeveloped regions under Article 92(3)(a). The qualifying threshold for regions is per capita GDP measured in PPS equal to or less than 75 percent of the EU average. The basic unit of assessment is the so-called NUTS III region although the situation in the NUTS II region as a whole determines eligibility; for the purposes of analysis, data are averaged over a minimum period of three years, based on the last three years, where possible.⁴

Per capita GDP is also used for the approval of assisted areas under Article 92(3)(c).⁵ To qualify under Article 92(3)(c), a NUTS III region must normally have per capita GDP at least 15 percent below the national average. In order to take the EU context into account, national averages are adjusted on the basis of European indices of GDP per head and unemployment. Using these indices, a formula is applied that determines the threshold that a region must reach in order to qualify for approval under Article 92(3)(c).

The net result of applying the formula is that the better the situation of a Member State in relation to the EU average, the greater must be the disparity of a region within the national context for the availability of regional aid to be justified. Thus, regions in Denmark and Germany (among the more prosperous nations of the EU) must diverge from the national average to a greater extent than those in Italy and the UK in order to qualify. This is reflected in Table 1 which sets out the relevant thresholds for GDP per head and unemployment for each Member State.

The importance of this utilisation of per capita GDP as a problem region indicator for competition policy purposes is that even if GDP per head does not feature on the list of indicators used by national policy-makers, it is still likely to impact on how areas are designated in the Member State. Indeed, as Figure 2 shows, within national area designation systems, relatively little emphasis is placed on measurements of GDP per head at the regional level in terms of domestic considerations. Nevertheless, most countries, even those that do not feature in Figure 2 because they do not operate quantified approaches to measuring disparities, are forced to consider levels of per capita GDP in order to conform with EU competition policy requirements.

Also at the European level, measures of GDP per head largely determine eligibility for Objective 1 status under the Structural Funds. The threshold for eligibility is similar to that for Article 92(3)(a): “NUTS level II regions whose per capita GDP, on the basis of the figures for the last three years, is less than 75% of the Community average.”⁶

⁴ Commission Communication on the Method of Application of Article 92(3)(a) to Regional Aid, OJEC C 163; 4 July 1990.

⁵ Communication on the Method of Application of Article 92(3)(a) and (c) to Regional Aid, OJEC C 212; 12 August 1998.

⁶ Council Regulation (EEC) No 2081/93 of 20 July 1993 amending Regulation (EEC) No 2052/88 on the tasks of the Structural Funds and their effectiveness and on the coordination of their activities between themselves and with the operations of the European Investment Bank and the other existing financial instruments.

Table 1: GDP Thresholds for the Application of Article 92(3)(c) to National Regional Aid (with effect from 29 May 1996)

Member State	GDP / GVA per capita
Austria	79
Belgium	82
Denmark	74
Finland	81
France	80
Germany ⁽²⁾	77
Greece	85
Ireland	85
Italy	85
Luxembourg	69
Netherlands	83
Portugal	85
Spain	85
Sweden	75
The UK	85

Notes: (1) The unemployment threshold for Austria is to be published as soon as national unemployment statistics are available. (2) The former German Democratic Republic is included from 1991.

Source: OJEC C186; 26 June 1996.

The prevalence of the use of GDP per head as a problem region indicator by EU policy-makers can largely be attributed to the availability of data at the sub-national level across the Union. Indeed, GDP per head has become so widely used as a basic indicator that scant attention has been paid to its shortcomings as a measure of prosperity. Many of these arise from the problems associated with measuring GDP at the regional level.

A basic point is that there are practical difficulties involved in deciding how to assign output where activities span regional boundaries (and national statistical offices differ in their approaches to this); an obvious example is the allocation of overhead costs (marketing, distribution, etc.) for firms with a presence in more than one region. At first sight, it may appear pedantic to raise such issues, but the methodological choices made at this stage have a significant impact on the aggregate figures.⁷ Difficulties also arise from allocating the income accruing from natural resources (such as gas and oil) to the regions where the resource is first processed or landed; this artificially inflates the regional GDP figure.

⁷ Franz, A., Grabner, R. and Huber, M. (1996) *Differentiation and Feasibility in Regional Accounting*, paper to Seminar on Regional Statistics, Baden / Vienna, 5-8 March.

The extent to which regional GDP expresses the prosperity of a region is also affected by its composition: where inhabitants of other regions have property rights within a region, or if the human capital of other regions is used locally, there is an outflow of income. In addition, GDP is modified by the transfers that result from government taxation, spending and social security systems. Excluded from GDP estimates are the goods that people produce for their own consumption, as is the black economy; the size of both of these almost certainly varies widely between regions.⁸

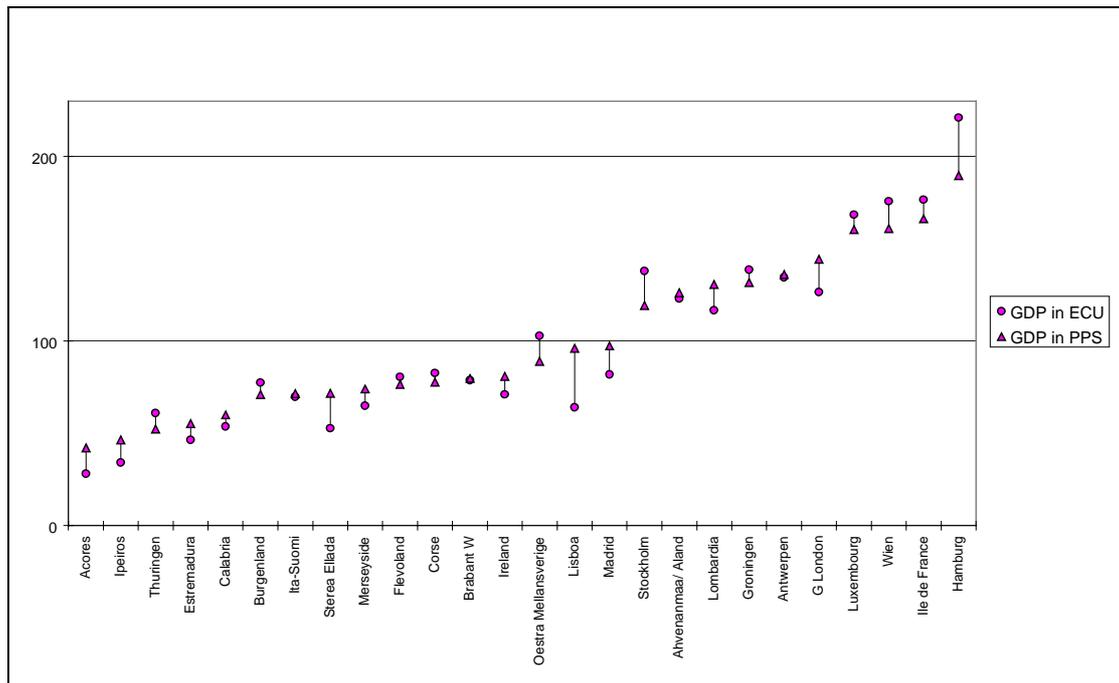
The choice and size of spatial units fundamentally alters the measurement of GDP. At high levels of spatial *disaggregation*, disparities in levels of GDP per head increase. Similarly, at high levels of *aggregation* differences between areas are averaged out. The *type* of spatial unit used is also relevant since the use of “non-functional units” can result in centres of economic activity being separated from their prosperous commuter belts.

Comparisons of GDP per head across the EU for European policy purposes are usually made using purchasing power standards (PPS) in order to take account of variations in the cost of living. Reliance on PPS rather than ECU exchange rates makes a substantial difference to the position of regions across the EU; this is illustrated in Chart 4. The chart plots GDP per head in both ECU and PPS taking the richest and poorest regions in each Member State (there is no regional breakdown for Ireland or Luxembourg). Overall, the PPS measure substantially reduces the disparities in GDP per capita between regions. However, the impact of PPS measurement differs according to national prosperity so that poor regions in Austria and Germany (Burgenland and Thüringen) appear poorer still according to the PPS measure, and Hamburg and Vienna appear less prosperous. Similarly, the poor regions of Portugal and Spain (Açores and Extremadura) appear less disadvantaged in PPS terms and the capitals of the two countries actually approach the European average when the cost of living is taken into account.

Although these adjustments are made for national differences in the context of EU-wide calculations, no such allowances are made for these differences *within* countries; it seems certain that the cost of some items, such as land and buildings, would vary very significantly between regions.⁹

⁸ Dunford, M. (1993) *Regional Disparities in the European Community: Evidence from the REGIO Databank*, *Regional Studies*, 27, 8.

⁹ Le Gléau, J.-P. (1996) *Measurement of Regional Disparity*, paper to Seminar on Regional Statistics, Baden / Vienna, 5-8 March.

Chart 4: GDP per Head in Europe's Richest and Poorest Regions (EU15=100)

Source: EPRC calculations from EUROSTAT 1996.

A further issue in relation to GDP concerns the relevance of per head figures. If the whole of the regional population is taken into account, this gives only a partial view of the economic development situation of a region, given the varying levels of the population that are not economically active (not of working age, unemployed, etc.). GDP per person employed essentially reflects levels of productivity within a region (which is not without interest); perhaps of even more interest is to relate GDP to the size of the regional labour force to give a better reflection of the economic development potential of a region.

It is not just at the regional level that GDP calculations can fail accurately to portray prosperity. In the Irish context, it has been argued that the transfer pricing strategies of multinational corporations have resulted in a gross exaggeration of levels of GDP and GDP growth and that the apparent increase in prosperity has not readily been translated into extended wealth creation and social opportunity within the country.¹⁰ This is of special significance in the context of Ireland's future eligibility for the Structural Funds: by 1995, GDP per head in Ireland stood at 89 percent of the EU average; significantly above the qualifying threshold of 75 percent.¹¹

¹⁰ Shirlow, P. (1995) Transnational Corporations in the Republic of Ireland and the Illusion of Economic Well-Being, *Regional Studies*, 28, 7.

¹¹ Financial Times; 2 August 1996.

Perhaps reflecting the difficulties that arise from the use of per capita GDP and its interpretation, national policy-makers appear to show more interest in the industrial structure of the regional economy than in the measurement of regional output. Most of the countries featured in Figure 2 take sector-related issues into account. In France, this took the form of estimating the potential for the development of tertiary sector activities. Similarly, in Denmark, policy-makers considered the share of manufacturing and service sector employment in the total working population. In Portugal, the analysis of the industrial structure of the regions took account not only of the workforce, but also of trends in value-added by sector. Swedish regional policy measures the proportion of public sector employees in the working population as part of its area designation review.

At the European level, competition policy does not *explicitly* take account of industrial structure in considering justifications for allowing areas to be designated for regional policy purposes; however, the so-called “second stage of analysis” of the 1988 Communication¹² refers to the “structure of economic activity (in particular the importance of declining sectors)”. In contrast, European regional policy under Objectives 2 and 5(b) quite explicitly targets regions affected by the decline in certain sectors. The 1993 Framework Regulation for the Structural Funds¹³ provides lengthy descriptions of the criteria that define areas of industrial decline and rural areas. It is perhaps a measure of the difficulty of reaching agreement on quantitative criteria that, for both types of region, the criteria were relaxed significantly compared to the previous Regulation in 1988.

Two countries (Germany and Portugal) take account of the level of amenity or infrastructure within their indicators of economic disparity (see Figure 2). In Germany, a so-called “complex infrastructure indicator” has historically been used to ensure that rural areas, with less easy access to amenities, are adequately taken into account in the area designation analysis. In Portugal, the area designation system takes cognisance of issues such as telecommunications and general accessibility.

Also difficult to quantify, a number of countries try to consider the future economic prospects of a region. In the UK, this is done by considering the annualised net percentage rate of growth in value-added tax (VAT) registrations for all sectors except retail and agriculture. In Germany, future employment trends are considered and in France, the economic prospects of a region were considered under the 1982 exercise, although it is not clear whether or how these were quantified.

Such “forward looking” considerations are absent from the criteria considered at the EC level for competition policy purposes. Indeed, a number of Member States have been frustrated by DGIV’s emphasis on the present situation or on historical data

¹² Communication on the Method of Application of Article 92(3)(a) and (c) to Regional Aid, OJEC C 212; 12 August 1998.

¹³ Council Regulation (EEC) No 2081/93 of 20 July 1993 amending Regulation (EEC) No 2052/88 on the tasks of the Structural Funds and their effectiveness and on the coordination of their activities between themselves and with the operations of the European Investment Bank and the other existing financial instruments.

when national policy-makers can anticipate problems arising from known forthcoming plant closures.

More flexibility to take account of future changes is built into the criteria for designating regions under Objectives 2 and 5(b); the criteria for Objective 2 explicitly mention areas which are “threatened with [job] losses in industrial sectors of decisive importance for their economic development”.

Last, as can be seen from Figure 2, many countries take account of demographic trends. Depending on the level of detail (eg. migratory flows and age structures), this can provide important indicators of the potential for regional problems as well as the potential for regional development.

Moving on to consider indicators of *social disparities*, Figure 3 reflects the considerable emphasis placed on unemployment in the context of regional policy. Clearly, levels of unemployment are closely related to, and frequently symptomatic of the *economic* well-being of a region; nevertheless, since employment-related indicators reflect the situation of individuals, it seems useful in the context of this paper to classify unemployment as a measure of social disparity, not least since it impacts on personal income.

Figure 3: Indicators of Social Disparities

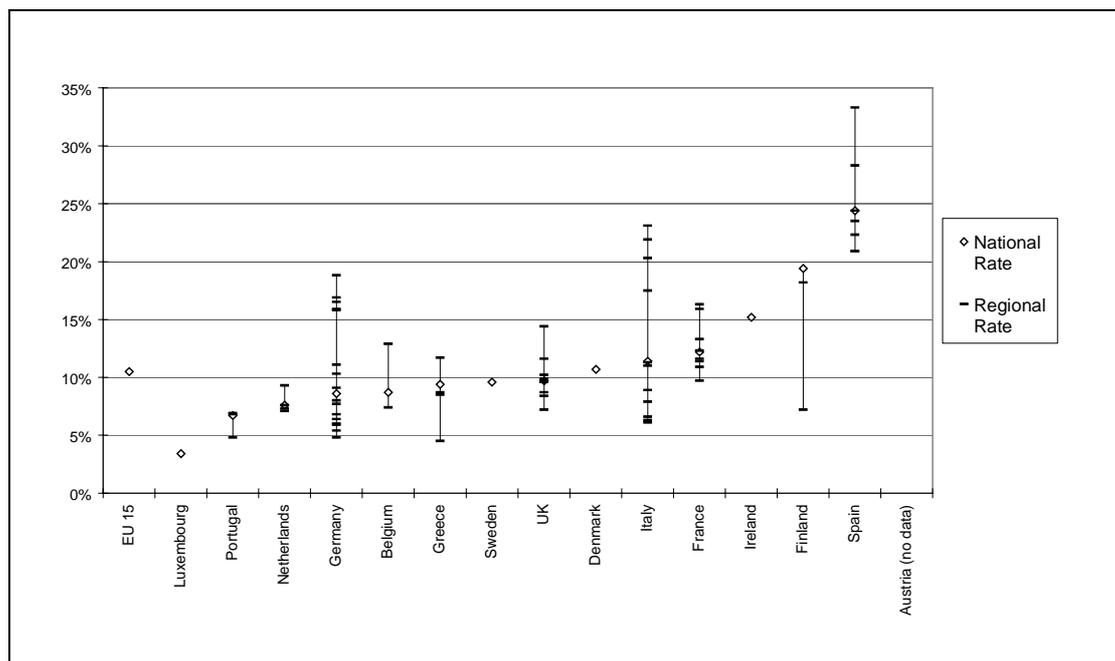
	B	D	Fi	Fr	Ge	N	P	Sw	UK	DG4	DG16
Unemployment	√	√	√	√	√	√			√	√	√
Structure of unemployment					√				√		
Employment trends			√		√				√		√
Future employment					√				√		
Active population		√						√	√		
Qualifications/ occ. Structure							√	√	√		
Income					√			√			
Living conditions					√		√				
Demographic trends	√		√	√			√	√			

Of the countries which have an overt or quantifiable dimension to measuring regional disparities for area designation, only Sweden and Portugal do not consider rates of unemployment. In Sweden, the employment rate and trends had been used in the 1990 designation exercise, but were dropped for the redrawing of the map in 1994. This reflected the view that population change and income per head would identify employment-related factors. In Portugal, the absence of a measure of unemployment was related to the nature of the regional problem; this is more concerned with low

levels of economic and industrial development and with *underemployment* than with joblessness. The same is largely true of Greece (which does not have a quantified approach to area designation). In the other countries with extensive Objective 1 areas (Ireland, Italy and Spain), levels of unemployment are a concern, though the main preoccupation remains with economic development.

National and regional rates of unemployment are illustrated in Chart 5. This shows very considerable variations within countries, as well as between them.

Chart 5: National and Regional Unemployment Rates in the EU (1994)



Source: EPRC calculations from EUROSTAT 1995b.

In a number of countries, the analysis of joblessness goes beyond simply looking at the rate of unemployment. The 1993 UK area designation exercise took three measures of unemployment into account:

- *current unemployment*: the average of the last 12 monthly unemployment figures divided by the latest workforce estimate (the annual average is used to eliminate seasonality);
- *structural unemployment*: the simple average of annual average unemployment rates over the last five years; and
- *long term unemployment*: the latest count of the number of those unemployed for more than a year as a percentage of the workforce.

In Germany too, the most recent (1996) area designation exercise measured:

- the *unemployment rate* over the period 1992-5;
- *trends in unemployment* expressed in terms of the percentage point change in the rate of unemployment over the period 1992-5; and
- the share of *youth, female* and *long-term* (more than 12 months) unemployed in the jobless total.

In addition, both Germany and the UK seek to measure future employment trends. In Germany, an *ex post* and *ex ante* evaluation of labour market trends using demand-side indicators was undertaken in order to devise a prognosis to the year 2002. In the UK, the “future jobs gap” was calculated by estimating the increase in labour supply over an assumed period, less the predicted employment increase over the same period, expressed as a proportion of an area’s present working population.

Denmark, Sweden and the UK also take account of the size of the active population within their area designation systems - in other words, the proportion of the population of working age who are economically active. This enables consideration to be given to those in higher education, the long-term sick and so on - perhaps giving a clearer view of the potential of the region in terms of human resources.

A number of countries also consider the quality of the labour force in relation to qualifications or types of occupation. The 1993 area designation exercise in the UK measured the proportion of the population in “low status” occupations. In Germany, account was taken of the number of people with technical qualifications. Similarly, in Sweden, levels of education were reviewed. More prosaically, in Portugal, adult literacy among the agricultural population was used as a measure of regional (and social) disadvantage.

Within their area designation systems, it can be seen from Figure 3 that Germany and Sweden are alone in considering differences in levels of personal income. (In Denmark, tax income is used as a substitute for regionalised GDP per head figures). In Germany, the assessment concerned levels of gross income on a given day. In some respects, this measure might be considered to reflect the quality of the jobs in the region.

At the EU level, there is growing interest in the development of comparative regional statistics relating to personal or household income.¹⁴ Regionalised data on personal disposable income takes account of income from wages or salaries, property and savings and tax paid on this income. This provides a good measure of the wealth of the inhabitants of a region, whereas GDP per head gives a measure of the output of a region, not all of which necessarily accrues to the inhabitants. The difference between personal disposable income and GDP per head is illustrated for the UK in Table 2. This shows that GDP per head at the regional level exhibits a different pattern from personal disposable income. In Northern Ireland, for example, levels of personal disposable income per head are substantially higher than those in Wales or the North

¹⁴ Le Gléau, J.-P. (1996) *Measurement of Regional Disparity*, paper to Seminar on Regional Statistics, Baden / Vienna, 5-8 March.

of England, and yet the GDP per head of the region is lower; this is also reflected in the regional shares of national GDP and personal disposable income. Although these data are of interest, two issues need to be borne in mind when considering disparities in personal income. First, as for GDP, it can be argued that there are significant differences in the costs of living between regions so that some regional measure of purchasing power would be required before full comparisons could be made; second, measures of interregional disparities in personal income may mask very wide variations *within* regions. In short, although measures of personal income at the regional level might provide a useful complement to other data, like the other indicators discussed, care is required in interpreting the results.

Table 2: Regional Shares of National Personal Disposable Income (PDI) and National GDP

	GDP per Head (£)	PDI per Head (£)	Share of National GDP (%)	Share of National PDI (%)
Northern Ireland	7,574	7,413	2.24	2.62
Wales	7,831	7,189	4.23	4.52
North	8,265	7,246	4.78	4.86
North-West	8,395	7,454	9.94	10.34
West Midlands	8,608	7,622	8.35	8.72
Yorkshire & Humberside	8,434	7,437	7.92	8.07
East Midlands	8,864	7,477	6.58	6.60
South West	8,934	7,967	7.80	8.22
Scotland	9,104	8,065	8.65	8.93
East Anglia	9,408	8,055	3.67	3.65
Rest of South East	10,215	8,288	20.57	19.43
Greater London	11,528	9,348	14.85	14.02

Source: CSO, 1995.

Note: Data are for 1993.

Finally in the context of Figure 3, it can be seen that Portugal and Germany have both sought to measure standards of living or household amenity in their regional disparity analyses. In Germany, this was simply done through population density on the basis that there is a reasonable linear relationship between this and the provision of “higher level services”. In Portugal, a number of indicators were used, including infant mortality, life expectancy, number of doctors and hospital beds per 1,000 inhabitants, number of households connected to the mains water supply and the proportion of the population served by the telephone network. Use of these indicators reflected not only

the absence (or inappropriateness) of regional accounts information, but also the nature of the disparities concerned.

4. THE DETERMINANTS OF DISPARITY

The investigation of the processes that lead to differences between regions is a complex field of study which goes beyond the scope of this paper. However, it is notable that the targeting of regional policy rests largely on the measurement of *disparities* rather than on an analysis of the *determinants* of those disparities. This merits further discussion because the determinants of the disparities have direct implications for the design of appropriate policy instruments.

Many of the determinants of regional inequality are intrinsic to the geopolitical background of a region. Others, especially the kind of physical disparities associated with geography and climate mentioned above, constitute both a category of disparity in themselves and a cause or determinant of other disparities; peripheral locations may be unsuitable for many types of economic activity resulting in low levels of economic development, for example. From a policy perspective (assuming that peripherality is perceived to be a disadvantage rather than just a characteristic), the options open are to mitigate the consequences (for example through infrastructure provision) or develop activities that are appropriate to the environment concerned (such as resource-based or location-independent activities); however, the determinant of the disparity itself cannot readily be addressed - ultimately, the region will be no less peripheral.

The determinants of economic and social disparities tend to be less immutable and many are capable of being addressed through policy. Indeed, there is increasing emphasis in academic and policy-maker circles on identifying the determinants of continuing uneven economic development, and the distinctive mix of characteristics possessed by a locality; it is this mix which is considered to determine how likely a given area is to benefit from particular types of policy instrument.¹⁵ Associated with this is a growing trend towards developing “regional competitiveness” and locally-based regeneration strategies tailored to the perceived strengths and weaknesses of an area.

Work undertaken for the Commission in the late 1980s identified some 37 factors shaping regional competitiveness;¹⁶ those which vary sub-nationally are set out in Figure 4 using the classification (resource category) suggested by Coombes and Wong (1994). Other studies have considered regional characteristics from a business perspective, identifying areas that best meet the requirements of firms based on a series of criteria.¹⁷ However, for the most part, the orientation of such research tends to be towards factors that are of relevance for mobile or potentially mobile investment, rather than on factors also of importance for indigenous development.

¹⁵ Coombes, M. and Wong, C. (1994) Methodological Steps in the Development of Multivariate Indexes for Urban and Regional Policy Analysis, *Environment and Planning A*, Volume 6.

¹⁶ IFO (1990) *An Empirical Assessment of Factors Shaping Regional Competitiveness in Problem Regions*, OOEPEC, Luxembourg.

¹⁷ Ernst & Young and Corporate Location (1992) *Regions of the New Europe: A comparative assessment of key factors in choosing your location*, Century House Information, Milton Keynes.

Figure 4: Regional Competitive Advantage Factors

Locational	proximity to customers proximity to suppliers
Infrastructural	local technical services availability of advertising and consultancy services availability of industrial sites economic and sectoral prospects transport network telecommunications system waste disposal energy supply and cost cost of housing
Human	cost of wages and salaries supply of unskilled labour supply of qualified labour
Intangible	labour market regulation social “climate” business culture
Amenity	cultural and social facilities leisure facilities proximity to higher education school facilities training facilities
Financial	legal regulations local authority cooperation regional incentives other regional policy factors availability of risk capital

Source: Coombes and Wong, 1994.

There are three key points to note about the groups highlighted in Figure 4 (and the factors within them). First, the relevant spatial scale varies from the highly localised to the nationwide raising difficult issues about the level at which the factor should be measured and at which policy might be implemented. Second, many of the factors are qualitative and/or difficult to measure. Third, the relative importance of the different elements varies widely according to the context - a locality might be highly suited to absorbing certain types of activities but unsuited to others.

These three factors make any nationwide analysis of regional competitiveness an exacting and time consuming task. It is almost certainly for this reason that area designation for regional policy purposes focuses on a range of far more accessible and comparable indicators - measures of disparity - rather than on seeking to identify the underlying causes of disparity.

5. WIDER EUROPEAN ISSUES

In considering the approaches to measuring disparities and selecting disparity indicators, the emphasis of the discussion has been on the policies of the Member States. It is clear from the review that the perceptions of regional problems and the mechanisms used to identify and quantify those problems differ considerably between the Member States. The lack of any real consensus among Member States over what constitutes a regional problem and how it should be measured has direct implications for any attempt to gauge disparities at the European level and raises formidable political and methodological difficulties.

A basic problem in assessing regional disparities is the choice of territorial unit. As mentioned above, the appropriate level of analysis is directly related to the nature of the disparity - for preference "functional" units should be used, for example, labour market areas in the context of employment-rated criteria.

At the EU level, the territorial framework of analysis is the NUTS system devised by EUROSTAT in the 1970s. For reasons primarily associated with data availability, the NUTS system explicitly favours *institutional* breakdowns of area. It is important to stress that the NUTS system was not designed for the purposes of spatial policy analyses. Indeed, it was not until the late 1980s that the first explicit policy references to NUTS units were made: the 1988 reform of the Structural Funds involved area designation criteria that relied on the NUTS classification of areas; in the same year, the Commission Communication on regional aids also referred to NUTS areas as the units of analysis. In consequence, the NUTS classification has become embedded in analyses of disparities at the European level and, in some respect, has gained a legitimacy as a system of measurement that is quite unjustified. In this context, it is worth recalling the degree to which NUTS areas at the same level encompass areas of widely differing size, population and population density. These differences are reflected in Table 3 and Table 4.

As Table 3 shows, the size of NUTS II regions (the main units used for measuring disparities across the EU) varies from 154,300 km² (in Sweden) to just 30 km² (in Spain).

Differences in population are no less dramatic (see Table 4). Again at the NUTS II level, the population ranges from 25,000 (in Finland) to over 10.8 million (in France).

The number of units into which countries are subdivided also differs considerably between countries: for Denmark, Ireland and Luxembourg, there is no subdivision at the NUTS II level; while Germany, France, Italy and the UK are divided into 38, 26, 20 and 35 units respectively.

Table 3: Surface Area of the EU Regions (1,000 km²)

	NUTS I			NUTS II			NUTS III		
	Ave.	Min	Max	Ave.	Min	Max	Ave.	Min	Max
B	10.2	0.2	16.8	3.4	2.40	4.4	0.7	0.10	2.0
D	43.1	43.1	43.1	43.1	43.10	43.1	2.9	0.10	6.2
Ge	22.3	0.4	70.6	8.9	0.40	29.5	0.7	0.03	2.9
Gr	33.0	3.8	56.8	10.2	2.31	19.1	2.6	0.33	5.4
Sp	72.1	7.2	215	28	0.03	94.2	9.7	0.01	21.7
Fr	70.4	12.0	145.6	24.4	1.10	83.9	6.3	0.11	83.9
Ir	68.9	68.9	68.9	68.9	68.90	68.9	7.7	3.32	12.2
It	27.4	13.6	44.4	15.1	3.30	25.7	3.2	0.21	7.5
L	2.6	2.6	2.6	2.6	2.60	2.6	2.6	2.60	2.6
N	10.3	7.3	11.9	3.4	1.40	5.7	1.0	0.13	3.4
A	28	23.6	34.4	9.3	0.41	19.2	2.4	0.41	4.6
P	30.7	0.8	88.9	13.1	0.80	27	3.1	0.80	8.6
Fi	169.1	1.6	336.6	56.4	1.55	136.1	17.8	1.55	98.9
Sw	410.9	410.9	410.9	51.4	6.5	154.3	17.1	2.90	98.9
UK	22	7.3	77.1	6.9	0.70	30.6	3.7	0.38	25.3
EU15	68.1	0.2	410.9	23.0	0.03	154.3	5.4	0.01	98.9

Source: EUROSTAT, 1995c

Table 4: Population of the EU Regions - 1992 (1,000)

	NUTS I			NUTS II			NUTS III		
	Ave.	Min	Max	Ave.	Min	Max	Ave.	Min	Max
B	3348	951	5810	1116	236	2258	234	38	951
D	5171	5171	5171	5171	5171	5171	335	45	608
Ge	5039	684	17595	2015	492	5273	148	17	3456
Gr	2578	1004	3540	793	195	3540	202	21	3540
Sp	5584	1502	10502	2171	127	6984	752	56	4910
Fr	6546	1539	10862	2266	134	10862	589	73	2540
Ir	3549	3549	3549	3549	3549	3549	444	195	1371
It	5169	1584	8868	2843	117	8868	599	92	3923
L	393	393	393	393	393	393	393	393	393
N	3796	1605	7117	1265	238	3284	380	55	1292
A	2638	1750	3336	879	273	1570	226	21	1570
P	3286	238	9366	1408	238	3479	329	50	1832
Fi	2527	25	5030	842	25	1787	266	25	1278
Sw	8668	8668	8668	1084	397	1728	361	57	1662
UK	5273	2089	17703	1657	278	6905	892	72	6905
EU15	4238	25	17703	1830	25	10862	410	17	6905

Source: EUROSTAT, 1995c

The institutional character of the NUTS breakdown, together with the wide variation in size and population, undermines the genuine comparability of statistical indicators

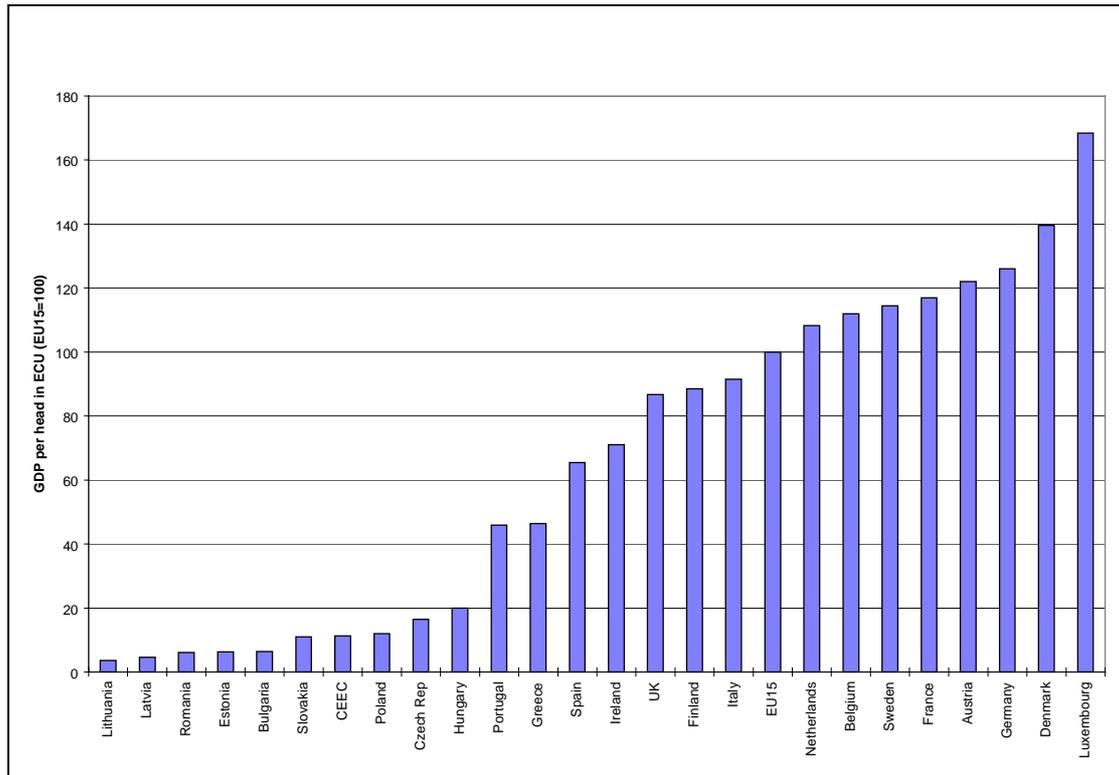
gathered across the EU. There are therefore considerable risks in the NUTS units being used for policy purposes: that the definition of the NUTS regions should have been an item on the agenda of the recent accession negotiations (and for the Nordic countries a controversial topic) reflects policy-maker awareness of how the definition of NUTS could impact on Structural Fund eligibility.

To some extent, however, under pressure from the Member States, the emphasis on comparative data at the EU level for policy-making purposes has declined. With respect to EU regional policy, the 1993 Structural Fund Regulation provided for greater flexibility in area designation, enabling NUTS areas to be subdivided. In parallel, the implementation of EU competition policy has involved more room for manoeuvre for the Member States, again through a relaxation of the rules regarding the territorial units enabling Member States to target assistance at specified labour market areas.

The second dimension to measuring disparities at the European level concerns the choice of indicator. As noted in the review above, the emphasis is very much on measuring GDP per head and unemployment. To some extent, this approach is driven by the information available. However, one might question the extent to which these indicators are relevant across the EU. Indeed, per capita GDP is relatively little used by the Member States in measuring internal disparities; at the same time, in a number of EU economies, the key employment issues are related to underemployment rather than unemployment. This raises the wider issue of whether it is anyway appropriate to attempt to measure disparities across the EU for policy purposes; is it not the case that the differences are just too wide to be measured against the same benchmark? The limited usefulness of applying a common set of indicators to problems which are very different in their nature and intensity has been explicitly recognised in Germany where different criteria have been used for area designation in the east and west of the country.

In this context, the prospect of further enlargement of the EU presents particular difficulties. With respect to levels of GDP per head, the extent of disparities at the national level alone is reflected in Chart 6. Countries are presented in ascending order of GDP per capita and the chart shows that all of the current membership have per capita GDP significantly higher than that of any of the potential new Member States. Admittedly, figures are presented in ECU terms without adjustments for purchasing power parities, and this tends to exaggerate the differences. On the other hand, it is clear even from this chart, that enlargement to the east would bring with it economic disparities on a scale hitherto unknown in the EU.

Chart 6: Regional Disparities in GDP per Head (1993) - EU15=100



Source: EPRC calculations from EUROSTAT 1995.

6. DISCUSSION ISSUES

This paper has reviewed Member State experiences in measuring regional disparities for area designation purposes. A key feature of the review has been the wide spectrum of experience and policy practice in the countries under study. This final section draws out a number of broader issues emerging from the discussion.

6.1 Systems of measuring regional disparities for area designation differ widely between countries, limiting the extent to which “best practice” can be disseminated.

The nature of regional problems in the European Union varies considerably between, and indeed within Member States. In addition, Member State perceptions of whether particular regional characteristics represent disadvantage also differ. These basic differences, coupled with different policy traditions and different political sensitivities, as well as different levels of information availability, combine to present a very diverse pattern of approaches to measuring regional disparities for area designation purposes.

For convenience, this paper has presented regional disparities in terms of physical disadvantage, economic development and social inequalities. In reality, it is clear that these three groupings and the factors within them are inextricably linked. Nevertheless, this grouping provides a useful framework for discussion of the various approaches to measuring disparities. The EU countries can be divided into four broad groups to reflect their regional policy preoccupations:

- the Nordic countries where *physical* disparities and their consequences dominate perceptions of the regional problem;
- the northern European countries where the *social* inequalities reflected in employment patterns are the central issue;
- the three wholly Objective 1 countries where the principal concerns are with levels of *economic* development (both internally and in relation to the rest of Europe); and
- and Italy, Germany and Spain where both *social* and *economic* disparities are important, but in different parts of the national territory.

Moving from the conceptualisation of the regional problem to the design of mechanisms to measure the extent of that problem is a difficult task. The overall approach to this is mainly influenced by domestic political considerations and policy traditions. In consequence, the spectrum of recent experience in area designation ranges from the largely intuitive, policy-maker-led approach (in France) to the highly quantified, strictly numerical analysis undertaken in Portugal. In practice, most countries fall between these two extremes and all except Portugal allow for some policy-maker or other qualitative input into the process, if only to verify that statistical evidence confirms policy-maker preconceptions.

The evident reluctance to adopt purely statistical approaches to measuring disparities reflects the technical and practical difficulties in doing so. In order to contribute to the area designation process, the indicators chosen must fulfil three main criteria: they must be relevant to the concepts to be measured; they must be available; and they must be interpretable. These are demanding requirements, not least since regional problems are multi-dimensional, involving natural, social, economic, sectoral and spatial dimensions that are subject to change over time.

6.2 The emphasis of area designation systems for regional policy is on the measurement of the symptoms of disparity rather than on the underlying causes.

A notable feature of the review of regional disparity indicators is the emphasis on the *symptoms* of the regional problem (for example, high levels of unemployment) as opposed to the underlying causes or determinants of disparity. Given the difficulties involved in measuring disparities, it is scarcely surprising that national level policies should, on the whole, have taken this approach. Nevertheless, the precise characteristics of an area have direct implications for the type of policy instrument that are relevant and this is being reflected increasingly in area designation. In France, for example, the assisted areas map for the main regional policy instrument reflects not just regional *problems* but also regional *potential*; under the last area designation exercise account was taken not only of measures of prosperity or unemployment, but also of the extent to which a given area could be expected to benefit from the types of investment promoted through the regional policy grant (ie. large scale projects). In similar vein, two further assisted areas maps have been drawn up in France over the past year or so, one designating urban areas and a further map indicating two categories of rural area. In these areas, the emphases of policy is different as are the policy instruments. In particular, in both types of area small and medium-sized firms are seen as the main targets of business development policies.

A more differentiated approach with tailored policy responses also underpins the planning and implementation of EU regional policy. Following the designation of assisted areas, the plans drawn up for the regions were required to provide an analysis of the regional problem with a view to identifying strategic issues to be addressed. The policy instruments were then devised with this in mind. Such detailed approaches are typically better suited to regionally-based development strategies (as opposed to national policies) since much of the analysis is likely to be difficult to quantify and to require local knowledge.

6.3 In measuring disparities at the EU level, the problems encountered within countries are multiplied, making the policy relevance of outcomes highly questionable.

There are a number of major difficulties associated with the measurement of regional disparities within countries: there may be a need to encapsulate more than one type of regional problem in any analysis; the identification of indicators to measure a perceived regional problem is not always easy; data may not be available for the right timescale or at the relevant spatial scale; and the results may be difficult to interpret.

At the European level these difficulties are compounded: first, the types of disparity become more numerous and diverse; second, the number and range of indicators generated according to the same methodology is very limited; and third, the spatial scale at which the data is available may not be comparable.

Data on disparities between the European regions has been produced within the EU for a number of years.¹⁸ Largely as a consequence of data availability, comparative analysis of the regional problem has centred on measures of GDP per capita using the NUTS II units. Indeed, this appears to have become so enshrined in the EU approach to measuring disparities that the shortcomings of regional level GDP and of the NUTS system draw little comment.

It was only in the late 1980s that European level analyses were used explicitly as the basis for policy. Prior to 1988, EC regional policy had essentially been a supplement to national intervention and there was no separate area designation exercise. With respect to competition policy, the Commission did not publicise its methodology for approving assisted areas until its 1988 Communication, which made clear that the basis for its assessment concerned measures of GDP per head and unemployment at the NUTS II and III levels.

Clearly, comparative analyses of regional levels of per capita GDP are of some interest; however, it is questionable whether the overwhelming emphasis on GDP in NUTS units is appropriate for area designation at the European level. This is so for a number of reasons. First, as noted earlier, there are a number of drawbacks with the use of regional level GDP as an indicator. In this context, it is interesting to note that relatively few countries explicitly measure regional GDP per head for their own national area designation purposes. Second, as discussed, the NUTS units vary very widely so that EU analyses merely provide an illusion of comparability. Third, regional disparities in GDP per head are often not wide within countries (this is so of France, for example, excluding Ile de France and Corsica) and measures of GDP per head can therefore fail to detect the presence of internal disparities. Last, related, regional problems may not be associated with levels of prosperity as measured by GDP per capita; this was clear from the accession negotiations with the Nordic countries with respect to both EU competition and regional policy.

¹⁸ The so-called "Thomson Report" considered the situation at the end of the 1960s and the first of the "Periodic Reports" was published in 1981.

In practice, in recent negotiations over national assisted area maps and in the designation of Structural Fund areas, the role of EU indicators has declined. The 1993 assisted area designation of Objective 2, in particular, emphasised the use of national measures of disparity. At the same time, DGIV has adopted a more flexible approach to approving designated assisted areas, relying for discipline on the setting of population quotas.

It seems appropriate that this trend should continue. National and sub-national authorities are better placed to design and implement area designation systems that are suited to domestic regional disparities.

With respect to the Structural Funds, this raises the question of the extent to which a policy based on *national* area designation choices would be *European*, rather than a simple complement to national policy as in the pre-1988 era. Also in the context of the Structural Fund designation, the point must be made that the experiences of 1993 do not augur well for the national designation of areas. Notwithstanding the difficulties of identifying and utilising Europe-wide data, some quantitative benchmarking seems essential if a rational *European* overview is to be maintained.

In the run up to 1999, when the current plans expire, much wider issues about the future of the Structural Funds will be open to debate. In particular, the treatment of the potential new Member States in central and eastern Europe will be high on the agenda. This brings with it the prospect of disparities on a quite different scale and will create further strains for any Europe-wide area designation system.

As far as competition policy is concerned, there is a strong case for arguing that distortions of competition are not anyway prevented by restricting the spatial coverage of assisted areas maps with reference to standardised indicators or to national population quotas. Moreover, the use of population quotas, combined with the dispensation to subdivide NUTS and even labour market areas, must anyway cast doubt on the current ability of DGIV to maintain control over spatial coverage in any meaningful way. In consequence, it can be argued that a more relaxed approach to area designation by DGIV would not threaten to distort competition, although both the Commission and the Member States should consider whether a stricter approach to other aspects of regional aids is required.

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