ANALYSING THE IMPACT OF
OBJECTIVE ONE
FUNDING IN EUROPE: A REVIEW

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ABSTRACT

This article examines the impact of Objective One funding in Europe in reducing country and regional disparities in GVA per capita by presenting a critical review of both empirical studies and end of term program reports. In practice, it is very difficult to establish impact effects as it is hard to establish the counterfactual. This arises as a consequence of different theoretical predictions as to what would happen in the absence of intervention, overlapping funding streams and the regional impact of other policies such as European integration. There are also evaluation problems caused by data inadequacies and noise. Even so, the balance of evidence suggests that Objective One funding has had remarkably little demonstrable impact and there is, therefore, a strong case for reform.

INTRODUCTION

The EU has devoted considerable resources to improving the performance of lagging regions since the early 1980s. In 1987 around 20 per cent of the EU budget was devoted to Structural Funds, a percentage which grew to more than 35 per cent by 1999. Planned expenditure is then fell slightly but was still expected to be €29.1bn at 1999 prices in 2006 and was now concentrated much more on those areas in greatest need of support than it was in previous years. Indeed, for the Programming Period 2000-2006, some 40% of the EU 15 population was covered by EU regional policy objectives compared with 52% for 1994-1999.

In order to qualify for funding, regions have to meet certain criteria. For 1994-1999, four major categories were identified. First was Objective 1, which covered NUTS II regions for which GVA per capita was less than 75% of the EU average. Second was Objective 2, which was reserved for NUTS II regions, or parts of regions, seriously affected by industrial decline. In addition, Objective 5b funding was aimed at the development and structural adjustment of rural areas, whilst Objective 6 was targeted at areas with very low population density. For 2000-2006, Objectives 1 and 6 were combined in a new Objective 1 as were 2 and 5b as a new Objective 2. Moreover, the latter now included urban areas dependent on fishing or highly service sector dependent areas undergoing conversion problems.
In the three programming periods from 1988 to 2006, more than two thirds of Structural Funding Spending was spent on Objective 1 and 6 regions and from 2000 this took around 70% of the total. Approximately 11.5% of funding was allocated to Objective 2 regions, less than the 16% allocated to Objectives 2 and 5 from 1994-99. The rest of the Structural Fund resources were allocated to non territorial Objectives (e.g. Objective 3 aimed at supporting the adaptation and modernisation of education, training and employment policies and systems) and to specific Community Initiatives such as INTERREG and URBAN.

Given the substantial resources involved and the political emphasis placed by the EU on regional policy, the effectiveness of such funding is an issue of major concern. This paper concentrates on the evaluation of Objective One funding. There are a number of reasons which justify this focus. First, as has already been noted, Objective One funding was more than two thirds of total Structural Fund expenditure. Second, the qualification principle was based on a simple quantitative indicator (GVA per capita) which, in theory, provides a simple basis for testing whether Objective 1 funding has improved the relative position of target regions. Thus, the key question for evaluation is whether EU funding has led to reduced disparities in levels of GVA per capita. A third justification is that, whilst there has been considerable research that directly or indirectly examines the impact of Objective One, the research uses a variety of theoretical frameworks and methodologies and presents a confusing picture. Consequently, there is a strong case for providing a synthesis and overview of this literature.

The paper begins with an examination of EU country and regional disparities and of the justification for an interventionist regional policy. There is then an overview of some of the problems involved in assessing the impact of Objective One funding including different theoretical perspectives, poor data, overlapping policies and noise arising from policy shocks. This is followed by a discussion of the results emerging from a wide variety of empirical literature that is directly or indirectly relevant to evaluation including convergence models, non-convergence approaches, simulation models and case studies of individual regions. The final section considers the implications of the analysis for future EU regional policies.
REGIONAL DIFFERENCES AND JUSTIFICATION FOR REGIONAL POLICY

There are major disparities in the economic performance of constituent countries and regions of the European Union. They have been there from the start but have been accentuated with enlargement and particularly with the accession of several eastern European countries in 2004. Some details are given in Table 1 which shows that, in 2002, GVA per capita varied from a low of 39% of the EU average in Latvia to a high of 213% of the EU average in Luxembourg.

Table 1 GVA per head in purchasing power parities (EU 25=100)

<table>
<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
<td>EU 25</td>
<td>100</td>
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<tr>
<td>EU 15</td>
<td>109</td>
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<tr>
<td>New member states</td>
<td>52</td>
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<tr>
<td>Belgium</td>
<td>117</td>
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<tr>
<td>Czech Republic</td>
<td>68</td>
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<tr>
<td>Denmark</td>
<td>123</td>
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<tr>
<td>Germany</td>
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<td>Estonia</td>
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<td>Greece</td>
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<td>Spain</td>
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<td>France</td>
<td>113</td>
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<td>Ireland</td>
<td>133</td>
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<td>Italy</td>
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<tr>
<td>Cyprus</td>
<td>83</td>
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<tr>
<td>Latvia</td>
<td>39</td>
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<tr>
<td>Lithuania</td>
<td>42</td>
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<tr>
<td>Luxembourg</td>
<td>213</td>
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<tr>
<td>Hungary</td>
<td>59</td>
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<tr>
<td>Malta</td>
<td>73</td>
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<tr>
<td>Netherlands</td>
<td>122</td>
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<tr>
<td>Austria</td>
<td>121</td>
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<tr>
<td>Poland</td>
<td>46</td>
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<tr>
<td>Portugal</td>
<td>77</td>
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At regional level (table 2), the highest and lowest figures were for Inner London in the UK (315) and for Lubelskie in Poland (32). Moreover, there were considerable differences within countries most notably (if Inner London is regarded as a special case) within Germany, Italy and the Czech Republic. In Germany, the lowest figure was for Dessau (66) in the former GDR. This contrasted with 189 for Hamburg. For Italy, there was a difference of 92 index points between Bolzano (160) and Calabria (68), while in the Czech Republic there were big differences between Prague and the rest.

Table 2 GVA per head in purchasing power parities (EU 25=100)
Ten Highest and Lowest Regions.

<table>
<thead>
<tr>
<th>Highest</th>
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<tbody>
<tr>
<td>Inner London (UK)</td>
<td>315</td>
</tr>
<tr>
<td>Brussels Capital (Belg)</td>
<td>234</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>213</td>
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<tr>
<td>Hamburg (Ger)</td>
<td>188</td>
</tr>
<tr>
<td>Ile de France (Fr)</td>
<td>176</td>
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<tr>
<td>Vienna (Aus)</td>
<td>174</td>
</tr>
<tr>
<td>Berks, Bucks, Oxon (UK)</td>
<td>162</td>
</tr>
<tr>
<td>Bolzano (It)</td>
<td>160</td>
</tr>
<tr>
<td>Stockholm (Sw)</td>
<td>158</td>
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<tr>
<td>Oberbayern (Ger)</td>
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<table>
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<tr>
<th>Lowest</th>
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<tbody>
<tr>
<td>Lubelskie (Pol)</td>
<td>32</td>
</tr>
<tr>
<td>Podkarpackie (Pol)</td>
<td>33</td>
</tr>
<tr>
<td>Warminsko-Mazurskie (Pol)</td>
<td>34</td>
</tr>
<tr>
<td>Podlaskie (Pol)</td>
<td>35</td>
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<tr>
<td>Swietokrzyskie (Pol)</td>
<td>36</td>
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<tr>
<td>Eszak Magyaroszag (Hun)</td>
<td>37</td>
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<tr>
<td>Opolskie (Pol)</td>
<td>37</td>
</tr>
<tr>
<td>Eszag-Alfold (Hun)</td>
<td>38</td>
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<tr>
<td>Východne Slovensko (Pol)</td>
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</table>
In the early years of the EU, regional differences were not a major concern of policy makers at supra national level, partly perhaps because those differences were less marked among the original members and partly because other issues took precedence at that time. Gradually, however, an interventionist regional policy became more and more of a priority.

The policy adopted was essentially one of developing the capacity of the poorer regions to improve their performance rather than directly encouraging people in those regions to move to more prosperous parts of the Community. There are a number of theoretical justifications for such an approach, though some of these are social and political rather than economic (see for example Martin 2005).

One is the equity or fairness argument that it is not acceptable for different parts of the EU to have much lower levels of income and rates of employment than others. A second is that policy can ease the adjustment problems of economies undergoing major transformation in response to shocks such as the integration policies of the EU. A third is that regional policy enables the employment of under utilised resources of problem areas, whether these are social capital or under utilised labour resources. This argument may be particularly valid if highly prosperous regions are congested and consequently impose higher production costs on businesses located in them. A final argument in favour of regional policy of the type adopted by the EU is a macro economic management one and is that if production is spread more evenly over the whole EU, then, the level of output at which inflationary pressures begin to bite and corrective action taken may be higher than would otherwise be the case.

As Martin (2005) points out, the clear separation of the respective justifications is rarely possible. For example, it is far from clear that equity is comparable with maximum economic efficiency or output or, therefore, overall economic welfare (Alesina and Rodrik, 1994). In the context of the EU, therefore, it might be ultimately self defeating if attempts to reduce regional disparities affected the overall competitiveness of the EU in a world context exacerbating the
problems of the poorly performing regions and the scope of people in them to move to jobs elsewhere. It is certainly an issue why more congested regions continue to grow and why so few businesses choose to relocate from them to less congested ones. Market failure is a possibility but so is the fact that the benefits of agglomeration continue to outweigh the costs.

In any event, realpolitik is an important consideration and it may be argued that one of the strongest justifications for regional policy at EU level, historically, is that it has been necessary to induce widening membership and persuade constituent countries to sign up for integrationist policies so necessary to ensure continued European competitiveness in world markets.

Even so, there is still an issue of how far to go down the interventionist regional policy road in terms of expenditure, which policies to adopt and how many and which type of regions to target. As we will see, there are different theoretical perspectives on all these points.

MONITORING AND EVALUATION IN THE EU

The idea of evaluation made its first formal appearance in the EU Fund Regulations of 1988. However, the requirements for evaluation have since developed in scope and sophistication, to encompass evaluation at the policy, programme and project level, and, at the beginning, interim and completion stage of a policy cycle (European Commission, 1997 1999a, 1999b and 1999c). Ex-ante evaluation addresses the question ‘is it a good programme’ by examining the linkage and consistency between global objectives, specific objectives and programme measures; the existence and relevance of the output, result and impact indicators and the reliability of the level of quantification of the objectives. Mid-term evaluation examines whether the programme remains relevant to local needs, the degree of effectiveness achieved as reflected in the monitoring indicators, the quality and relevance of these indicators, and the quality of programme management. Finally, ex post evaluation uses final monitoring data to compare the expected objectives with those actually achieved, as well as attempting to assess the long run impact of the programme.

This paper is primarily concerned with assessing the long term impact of Objective One funding in reducing disparities in GVA per head and
thus focuses on ex post evaluation. In making such an evaluation it is critical to establish the \textit{counter factual} case – that is, what would have happened to GVA per head in Objective One regions if they had not been in receipt of EU funding? Unfortunately, this exercise is fraught with difficulties. In particular, four issues are of major concern: different theoretical perspectives, poor data, overlapping policies and noise. These issues are now examined in turn.

There is little theoretical agreement as to whether, in the absence of intervention, the economic performance of regional economies will tend to converge to a common growth rate, converge to a number of distinct growth “clubs”, exhibit long term divergence or involve more complex spatial patterns involving elements of divergence, convergence and persistence (e.g. Bishop and Gripaios, 2006; Boldrin and Canova, 2001; Corrado et al, 2006). For example, a simple neoclassical perspective based upon the Solow growth model and involving the critical assumption of diminishing returns predicts that regions with identical preferences and technologies will converge. This arises as poor regions with low capital to labour ratios have high marginal products of capital which attracts capital migration and grow faster than richer countries with higher capital to labour ratios (Barro, 1991). Consequently, if labour and capital are mobile, regions will converge to a common steady state growth rate and regional disparities can be eliminated without state intervention. More sophisticated versions of the theory allow for the impact of differing structural influences across regions. In this case, regions with similar structural characteristics converge to specific “steady state” convergence clubs involving differing levels of per capita income. Consequently, only policy interventions aimed at these structural factors can potentially move regions to higher steady states.

Alternative approaches to mainstream neo-classical growth theory frequently predict long-term divergence of per capita incomes. Early approaches were based on the cumulative causation hypotheses of Myrdal (1957) and Hirschman (1958); later ones have been given the label of endogenous growth theory. In both versions, it is postulated that there are considerable agglomeration benefits arising from spatial concentration such that certain high growth regions benefit from a “virtuous circle” of growth. Central to the theory are interactions between human and physical capital and between individual firms such that there may be non-diminishing returns to capital in the aggregate and, therefore, no limits to the growth of the capital stock or output. In particular, the accumulation of knowledge may not be affected by diminishing returns. Rather, as Ederveen \textit{et al} (2002) point out, the return on investment in technology may increase with the stock of
accumulated knowledge since the cost of additional innovations may fall as scientific experience increases. Rich regions may find it easier to innovate and, therefore, increase their lead, while poor regions stay that way because they do not have the same potential to invent and innovate. In this scenario, there is a rather stronger justification for policy interventions aimed at moving regions from the lagging to the dynamic category. However, it is hard to imagine that all regions can benefit in this way, for the whole emphasis of the theory is that some regions will grow faster than others. One possible implication is that policy may need to concentrate selectively on those regions with the most potential for moving from backward to dynamic.

A further theoretical standpoint emanates from what may loosely be called new economic geography models (NEG), though the extent to which these differ from the endogenous growth approach is perhaps arguable. New economic geography models are again linked to the cumulative causation literature but focus specifically on the benefits of agglomeration. An early adherent was Williamson (1965) who postulated that national growth would be based on growth pole effects in key agglomerations which would result in widening disparities among regions until the possible onset of congestion costs put a break on the process. More recently, NEG models have been developed by Krugman (1991) and others, who demonstrate that agglomeration factors can lead to either divergence or convergence. Braunerhjelm et al (2000) suggest three different scenarios. One is that all regions are able to exploit their local comparative advantage, resulting in balanced regional development. A second is strong economies of agglomeration which would engender high labour mobility and convergence of per capita earnings. A third is strong agglomeration economies without labour mobility which would lead to polarisation of rich and poor regions. From this viewpoint the policy prescription is complex. Scenario one would imply helping all regions exploit their potential advantage, possibly lending credence to the recent focus on local and regional cluster development approaches. The second and third might imply policies aimed at facilitating labour migration.

The complexities of modern growth theory suggest that the issue for evaluation concerns not only whether intervention is likely to work per se, but also the efficiency of the specific measures to be adopted. For example, one important issue is transport infrastructure investments in problem peripheral regions which have been an important component of EU Structural Aid. Since these typically improve access to the prosperous core, such investments may bring benefits to local suppliers in peripheral regions. However, improved transport linkages may also benefit core producers by making it easier to compete with
local producers that were protected by high transport costs. Work by Venables and Gasiorek (1999), Vickerman et al (1999) and Dall’erba and Gallo (2004) suggests that this is a very real problem. Consequently, policy design and evaluation needs to assess these opposing forces within the context of specific policies. Similar issues may arise when other spill-over effects across regions are important. For example, the construction of a major project in a problem region could involve significant leakage during the construction phase if the architects, builders and much of the materials were sourced from a prosperous one.

This brief discussion of alternative growth theories would suggest that there is little theoretical agreement on what would happen in the absence of intervention. Thus, the establishment of a counterfactual position from which to assess policy impacts is a difficult issue. If one believes that convergence would happen in the absence of policy intervention, then the counterfactual case will be very different from a perspective which regards long term disparities as persistent phenomena.

A second problem for evaluation relates to data quality. Establishing the impact of a policy and the relevant counterfactual requires reliable statistics at the appropriate regional level. Unfortunately, there are major problems in this regard. Indeed, Combes and Overman (2004) go so far as to suggest that the “European data are a mess”, a situation that arises from “variations in collection policies, access and pricing conditions, confidentiality requirements and legal frameworks”. Typical problems include the non-availability/unreliability of GVA data for some countries and/or their constituent regions for some time periods or at an appropriate geographical level. This problem is illustrated by the fact that EU member countries have only recently adopted a consistent method of estimating GVA (Behrens, 2002). There are also significant problems with regional level GVA data for some individual countries. In the case of the UK, for example, a recent report by Allsop (2003) comments that “at this level disaggregation, it is likely that the figures are little more than approximations”. Gripaios and Bishop (2006) summarise a number of major issues associated with the quality of UK regional data including issues related to small samples sizes, apportionment of national data to a regional level, under-recording of economic activity and regional price variations.

A third problem concerns identifying the impact of overlapping policies. At the EU scale, policies designed to improve supra-national EU performance (e.g. single market, single currency, key transport developments) may affect the effectiveness of Structural Fund
interventions both positively and negatively. In such circumstances, it is far from straightforward to disentangle the effects of one policy impact from another. A related problem is that the macro-economic policies of member states have a dominant impact on the prosperity of domestic regions severely constraining the extent to which the Structural Funds could be expected to have had a measurable impact at a specific point in time. This is underlined by the very limited scale of the addition of Structural Fund spending to GDP in all but the most disadvantaged states. Though it could be argued that such arguments would apply most strongly to regions in member states which have not joined the Euro, the lack of business cycle convergence within the Euro zone implies that the issue may apply here too.

In addition to broad macroeconomic policy, there are other national policies with, often unintended, regional impacts. Examples from the UK include privatisation which had the effect of stripping out well paid managerial jobs in the periphery of the UK (Gripaios and Munday, 2000), decisions on the location of defence bases and facilities which have often assisted prosperous regions (Gripaios, 2002) and most recently the regional impact of a new funding regime in higher education. It is interesting to note in the case of defence, for example, that more national money has been spent on the cost overrun of the Trident refit facility in one city, Plymouth, than will be spent by EU and national and regional sources as a result of Objective 1 in the whole of the adjacent County of Cornwall in the period 2000-2006.

It is also important to recognise that there are typically a number of national, regional and local policies operating simultaneously with European ones targeted at the same outcome. Consequently, as Pearce and Martin (1996) emphasise, it is difficult “to isolate the impact of any one agency’s funding and to identify separately the additionality of each of the contributions which were made”. This problem is compounded if one tries to consider the impact of what are seen as mainly national programmes, such as labour market interventions, but which are shaped by a limited percentage input of EU funds (ESF) to the extent that the nature of national policy has to have regard to EU priorities and guidelines. Also of importance is the potential for “crowding out” with at least some public sector investments having the potential of displacing private sector ones. This could involve short term gains at the expense of long run sustainability, especially where interventions largely involve a short term boost to demand and little strategic content.

A fourth major problem is noise arising from the incidence of economic shocks which may have different effects on different regions at specific
points in time. A rise in the oil price, for example, may have a much bigger adverse effect on industrial rather than service based regions while a movement in the terms of trade may have more effect on regions where exports are a relatively large component of output. In such circumstances there may be a tendency, in some cases, to ascribe to policy interventions, benefits which have arisen elsewhere and, in others, to be too pessimistic about the impact of policy which may have mitigated what might otherwise have been seriously negative impacts.

The above arguments suggest that, monitoring and evaluation is far more difficult in practice than might be inferred from the many official handbooks on the subject (Gresham and Jones, 1999; European Commission, 1999c). There is little agreement on what might have happened in the absence of intervention, poor quality data with which to establish policy impacts or the counterfactual case, multiple polices which might have important regional impacts and asymmetrical regional effects arising from economic shocks. Recognising the nature and extent of these problems is crucial to the development of realistic expectations as to the extent to which the impact of policy interventions can be assessed.

EVALUATING THE IMPACT OF OBJECTIVE 1 FUNDING: ALTERNATIVE APPROACHES

This section presents an overview of empirical studies that either directly or indirectly have relevance for the assessment of the impact of Objective One funding. If it is accepted that the main long term purpose of Objective 1 funding is to raise GVA per capita in poorer regions relative to prosperous regions, then the issue of convergence (or reduced divergence) is key to the evaluation process. Consequently, the first part of this section examines alternative approaches that have been used to test for convergence and, at least in some cases, directly assess the role of EU funding in explaining changes in patterns of inequality across regions. This is followed by an examination of approaches which focus upon understanding the determinants of regional growth rather than focusing upon the convergence issue (non-convergence models). Two further sub-sections examine multi-equation macro-econometric simulations and micro-economic case studies of individual regions.

Convergence Models

Perhaps the most commonly used methodology for assessing convergence is the $\beta$ regression approach, which attempts to test the
hypotheses of convergence arising from the neoclassical growth model (Barro, 1991). For convergence to occur, poor regions must grow faster than their richer counterparts and a region’s per capita growth rate should be inversely related to its starting level of income per head. Absolute $\beta$ convergence implies a significantly negative correlation between initial income and growth in a simple regression of growth on initial income, whilst conditional $\beta$ convergence requires a negative correlation when the regression incorporates factors reflecting structural differences across regions (Barro and Sala-i-Martin, 1995). This allows for different steady states depending upon a set of extra variables allowing for different investment rates, levels of human capital, levels of technology, levels of R&D, industrial structures and other variables.

In principle, the role of policy variables can be incorporated into the $\beta$ regression approach by including regional funding as a structural factor in conditional regressions. However, much of the literature does not explicitly include such measures and hence is only of limited use for direct evaluation purposes. Nevertheless, this wider literature is useful in assessing the more general issue of the presence or absence of convergence which is of some importance in assessing counterfactual scenarios. Moreover, some inference of possible policy impacts can be garnered from contrasting the experience on assisted and non-assisted regions. Consequently, the analysis considers the wider literature as well as those studies that explicitly consider policy variables.

A number of studies have examined absolute $\beta$ convergence within the context of the European Union. Barro and Sala-i-Martin (1991, 1992), for example, found evidence in favour of convergence for a sample of the regions of eight European countries. However, their results only relate to the more prosperous parts of the EU and pre-date most of the period when the Structural Funds were used intensively. Armstrong (1995) tested for absolute convergence in each decade from 1950-1990 and, in general, convergence was observed but at a very low rate. Moreover, convergence was at a much slower rate in later relative to earlier decades especially within countries. A recent study by Ederveen et al (2002) found a clear pattern of convergence between 12 EU countries between 1977 and 1996. Similarly, Garcia Solanes and Maria-Dolores (2002) found evidence for absolute convergence between 1989-96, as did Rodriguez-Pose and Fratesi (2004) for 1989-99. The EU itself (European Commission 2004) found evidence for absolute convergence for the three periods, 1980-1988, 1988-94 and 1994-2001. Moreover, within Objective One regions, those with the lowest initial starting levels of GVA per head tended to grow the fastest both from 1988-94 and 1994-2001. However, using data for EU NUTS

The results for absolute convergence hence present a conflicting pattern and the same is true for models of conditional convergence. Armstrong (1995) finds that conditional convergence in per capita incomes in EU regions is occurring but at a slow and slowing rate. Neven and Gouyette (1994) also report slow convergence for EU regions. However, these results are contradicted by Button and Pentecost (1995). More recent studies include that of Boldrin and Canova (2001) for 1980-96, who try alternative specifications of the basic convergence model. Their results, though mixed, are not supportive of conditional convergence in per capita incomes. Again, there are a number of studies of individual countries in receipt of Objective One funding which find little evidence of conditional convergence (see for example Siriopoulos and Asteriou (1998) on Greece; Mauro and Paudrecca (1994) on Italy and Gripaios et al (2000) on the UK). However, Ederveen et al (2002), examine conditional convergence within 12 EU countries for various time periods, finding it in all countries except France, Italy and Sweden. The fastest rate of convergence was in Germany and was explained by the old East German regions catching up to those in the West, for there was no convergence among the latter group.

It is important to note that whilst the $\beta$ regression approach has been used extensively, it is subject to numerous criticisms. Friedman (1992) and Quah (1993a), for example, note that $\beta$ convergence tests are affected by Galton’s fallacy of regression towards the mean and may produce biased estimates. Moreover, as Cheshire and Magrini (2000) point out, the “traditional specifications witness a disproportionate presence of proxies for forces leading towards divergence among the conditioning variables. It is, therefore, hardly surprising that these analyses find a positive and statistically significant value for the estimate of the speed of convergence”. There are also severe methodological problems in incorporating policy variables into conditional equations including endogeneity and a variety of measurement issues (Temple, 1999, Dall’Erba and Gallo, 2004). One obvious difficulty is that specifications involving both Structural Funding receipts and starting level of income are very likely to suffer from multicollinearity since a low starting level of income determines which regions get the lion’s share of funds. A further point is that most empirical studies do not take into account spatial autocorrelation, a
strong possibility given likely spill-over effects between adjacent regions.

A number of studies of conditional convergence specifically include Structural Fund components (or proxies) as variables. Cappelen et al (2001), for example, recognising the potential multicollinearity problem noted above, try to get around it by using a pooled time series, cross section approach. The study suggests that EU Structural Fund spending has had a much greater positive impact on regional per capita incomes since the reforms of 1989. However, strong boosts to divergence come from unfavourable industrial structure and lack of R&D in poorer regions. Both of these are correlated with EU Structural Fund spending so there may be other specification problems. These issues may also apply to the formulations of Garcia Solanes and Maria-Dolores (2001) who find that both the Structural Funds in total and their individual components have a positive effect on convergence among EU regions from 1989-96. In contrast, Dall’erba and Gallo (2004) find that “steady states of regions do not seem to be significantly affected by the amount of Structural Funds they have received”. An advantage of their study is recognition of spatial autocorrelation, tests of which do reveal significant spillovers from one region to another. This is not surprising given that so much EU funding has been for improvements to transport infrastructure.

Puigcerver-Penalver (2004) looks at the impact of Objective 1 funding in two periods from 1989-2000 using a hybrid conditional convergence model of growth with both exogenous and endogenous components. The hypothesis tested is that Structural Funds work through the creation of endogenous technical progress. The study concludes that the impact of Structural Funds is very weak overall though much greater from 1989-93 than subsequently when it may even have been negative. This leads the author to conclude that “…. placing too high expectations on the ability of the Structural Funds to reduce regional disparities could be misplaced”.

Rodriguez-Pose and Fratesi (2004) find a very weak but positive impact of European Structural Funds on regional growth across Europe. However, the effect is much weaker if only Objective 1 regions are taken into account and disappears completely if Structural Fund allocations are split into regional and multiregional components. Various lag structures were tried to pick up delayed impacts but did not reveal any after as long as six years. The authors conclude that too much focus on infrastructure, business support and agriculture and too little on education and human capital might be to blame for these weak
effects, emphasising the importance of the nature rather than simply the quantity of funding.

A further study by Ederveen et al (2002) utilises national and regional panel data to examine cohesion policy and regional productivity on the E12 countries for 1960-1995. The results suggest that cohesion support has not improved the growth performance of recipient regions. Indeed, there seems to be a negative relationship. A further interesting conclusion is that regional support such as ERDF works best in open economies such as Ireland. Unfortunately, the role of openness cannot be tested on regions because the required data is not available. A more restricted regression equation is, therefore, estimated for 183 NUTS II regions for the period 1981-96. Two of the three specifications attempted do not suggest that the impact of EU regional funding has been positive. The analysis also attempts to assess the extent of “crowding out”, defined as the extent to which regional aid from national sources is substituted by that from the EU. The conclusion is that around 50% of EU aid crowds out national sources. On average one Euro of cohesion support typically crowds out 17 cents of national regional policy.

A second much used approach to testing for convergence is to use simple statistical measures that summarise changes in the distribution of per capita incomes across a set of regions over time. This approach, commonly referred to as $\sigma$ convergence, typically utilises the standard deviation or coefficient of variation with a reduced figure for a later year relative to an earlier one being indicative of convergence. Clearly, $\sigma$ convergence only examines a simple moment of the distribution and provides no information on the movement of regions within it. Nevertheless, some insights may be gained by comparing the change in the standard deviation within member countries or groups of such countries (which may be considered as convergence clubs) with that for the full set of EU regions.

The evidence for $\sigma$ convergence is mixed, with important differences emerging according to the time period and sample of specific studies. For example, the early small sample study of Barro and Sala-i-Martin (1995) is generally supportive of convergence although the pattern differs over time and across countries. A number of more recent studies (e.g. Cappelen et al, 2001, Ederveen et al, 2002, Boldrin and Canova, 2001, European Commission (2004), Sapin et al (2004), Gardiner et al (2005)) report convergence between countries. However, Gardiner et al (2005) note that there is only convergence between countries from 1980-2002 if Luxembourg and Ireland are excluded from the analysis. Moreover, even this pattern of
convergence doesn’t apply to more recent periods. Similarly, a recent study of the post 1989 period by Rodriguez-Pose and Fratesi (2004) fails to support convergence.

Mixed results also emerge from studies conducted at the regional rather than country level. For example, Boldrin and Canova (2001) find that while the standard deviation of regional per capita income falls slightly between 1980 and 1996, it oscillates widely during the period. Cappelen et al (2001) find no change in dispersion between 105 European regions between 1980 and 1990 and an increase from 1990-97. However, these conclusions conflict with those of Ederveen et al (2002), who found convergence in a sample of 160 out of 210 regions in the period 1984-1996. Other European wide regional evidence comes from Estaban (1994) and more recently the EU (European Commission, 2004, Sapir et al 2004 and Gardiner et al, 2005). The results again vary with time and sample.

Studies of σ convergence within individual EU countries also show a mixed pattern. Some countries with regions qualifying for Objective One appear to have experienced a divergence in regional per capita incomes. This seems to have applied since the 1980s, for example, to Austria (Hoffer and Wargotter 1997) the UK (Gripaios et al 2000), Spain, Italy and Greece (Rodriguez-Pose and Fratesi 2004). However, Ederveen et al’s (2002) study finds a clear tendency to convergence in all countries except France, Italy, the UK and Sweden. Slightly different results emerge from a study by Gardiner et al (2004) for 1979-2003 which report a steady long term rise in regional inequality in the UK, Finland, Sweden and Ireland and the opposite in Belgium, Greece, Spain and Portugal.

It is, therefore, difficult to make strong inferences about the role of Objective One funding from studies of σ convergence due both to the mixed results and the lack of specific modelling of the potential role of regional funding. However, Gardiner et al (2005) find that Objective 1 regions improved relative to other regions in all periods since 1980 except 1983-1986 and especially after the strengthening of regional support in the late 1980s. This might offer some evidence in support of a positive impact of regional funds although they point out that EU wide economic recovery at that time may also have been an important contributory factor.

An alternative approach to convergence is the distribution dynamics method originally suggested by Quah (1993a, 1993b, 1996a, 1996b, 1997) and rooted in Markov Chain techniques. This approach examines the laws of motion of the entire cross-section distribution of
per capita incomes over time, identifying changes (or persistence) in the overall shape of the distribution and movements within it. The dynamics of the process can be modelled using either a discrete or continuous form of analysis (Bishop and Gripaios, 2006). In the discrete approach, the data is split into a number of income classes and the analysis derives a transition probability matrix which describes the probability of moving between classes over time. Alternatively, the income distribution can be treated as continuous and the dynamics can be described by a stochastic kernel which can be regarded as a continuous version of the transition probability matrix. Spatial patterns in the data can be examined by comparing transition probability matrices across regional groupings or conditioning the stochastic kernel relative to group membership.

The distribution dynamics approach has the advantage of facilitating an analysis of the entire cross-sectional distribution of income rather than concentrating upon simple moments such as the mean or standard deviation. There have been a growing number of studies utilising this approach in recent years, many of which have identified complex patterns involving regions converging to multiple peaks in the income distribution and elements of persistence and divergence in it. (Bishop and Gripaios, 2006). Fingleton’s analysis (1997), for example, suggests that EU regions are converging to a set of multiple steady states from which economies are displaced by economic shocks. Magrini (2003) concludes that persistence rather than convergence is the most obvious feature across European regions over the period 1980-95. In a study of European functional urban regions from 1978-94, Cheshire and Magrini (2000) conclude that a small group of regions appear to move away from the rest. Though the issue is not directly considered, this does not appear to suggest much change at the bottom of the distribution where Objective One funding has been applied.

There have also been a number of studies utilising Markov techniques for individual countries. In the case of Great Britain, for example, Henley (2003) finds “twin peaks” in the income distribution with a substantial low income cluster existing alongside a smaller high income group. Bishop and Gripaios (2004, 2006) find a complex pattern of change in the regional GB income distribution over time. The study concludes that there is no overall pattern of convergence across GB regions, although is some indication of a small number of counties achieving a persistently high position in the distribution. The study argues suggests that directing attention to the simple question as to whether convergence exists or not, risks oversimplifying a highly complex process of growth and change. This conclusion might equally apply to EU wide studies of convergence and might suggest that
analysis might be better directed towards understanding the complexity of the process of growth and change rather than simply concentrating upon the presence or absence of convergence.

Whilst there are considerable merits in the Markov approach, it is not without its own limitations. In the discrete approach, the choice of income classes is somewhat arbitrary and different classification schemes may yield different results and even destroy the Markov properties of the process. Continuous stochastic kernels alleviate this problem but largely rely upon a graphical method of interpretation. At present, the Markov approach is perhaps most useful for exploratory work rather than the detailed analysis of the factors determining changes in incomes over time, although conditioned stochastic kernels offer one approach to understanding spatial groupings amongst countries. For example, Quah (1996) finds that national macroeconomic factors and geographical spillovers are important in explaining the cross-sectional income distribution across European NUTS regions in the 1980s.

The existence of distinct regional groupings often identified in the Markov approach has also been explored by Ezcurra et al (2005) utilising a polarization approach. This method examines the extent to which a population is distributed around a number of separate poles utilising polarization measures (similar to measures of inequality) originating in the work of Esteban and Rey (1994) and Esteban et al (1999). Utilising this approach requires exogenously identifying the number of groups to be examined. Ezcurra et al (2005) take a bipolar approach, identifying two groups of European NUTS 2 regions based on GVA per head in 1977. They argue that such an approach facilitates an analysis of the extent to which Europe may be evolving into a “rich” and a “poor” group of regions. Their conclusions suggest a reduction in bipolarization over the period 1977-99 with the average per capita income in the “poor” group rising from 55% to 60% of the average of the other group. However, they point out that “the greater part of the reduction in inequality… is seen to take place at the end of the 1970s, before reaching a point of near stagnation in the following two decades”. Thus the reduction in bi-polarisation does not occur in the period when the Structural Funds were most strongly applied.

In order to examine the underlying determinants of bipolarization, Ezcurra et al (2005) re-partition the regions in terms of three factors - countries, geography (central, intermediate or peripheral) and industrial structure. They conclude that the national (country) component seems to be the main explanation of regional bi-polarisation and of its reduction through time. Geographical factors were of lesser
important, again perhaps implying that the impact of the Structural Funds, much of which went to peripheral regions, was very marginal in explaining the limited convergence that may have occurred. The industrial structure component was less relevant than the other two factors.

A final approach to examining emerging patterns among EU regions is that of Corrado et al (2005) who utilise NUTS 1 level data for 1975-99 to search for clusters in GVA per worker in agriculture, manufacturing, market and non-market services. The clusters are defined by using stationarity tests for regional differences in per capita output across pairs of regions. The “observed” clusters are then compared with hypothesised regional groupings based upon different theories and models of regional growth and development. The hypothesised clusters are based upon indicators reflecting geographical factors (e.g. country membership, core-periphery), socio-demographic factors (e.g. population growth) and political variables which classify regions according to EU funding objective status. The results suggest that processes of regional convergence across the EU are complex and different over time. A number of regional convergence clusters were observed across all four of the industry sectors they looked at. However, there was little evidence “that the pattern of regional convergence across the EU correlates with regional policy intervention, as measured by the provision of Structural Fund and Cohesion Fund assistance”. Rather geographical proximity and socio-demographic characteristics seemed to be important. Geographical factors were, however, becoming less important over time especially in the clustering of manufacturing GVA per worker.

Thus, it is clear that there is no shortage of convergence-related studies that directly or indirectly have relevance for the evaluation of EU regional policy. Unfortunately, there is less than unanimity in the conclusions, the results depending on time period, basic method of analysis, number of regions covered and model specification. Clearly, this limits the usefulness of these studies to those interested in the evaluation of past policy and the development of future interventions.

Non convergence models

Whilst the convergence issue has been central to academic approaches to studying income distributions within the EU, there are a number of studies which eschew this approach. These approaches typically attempt to explain the growth rate of regional GDP per capita in terms of a range of variables reflecting both underlying demand and
supply influences but excluding initial income (as in convergence approaches) as an explanatory variable. In such an approach, demand factors may be included in the form of growth rates of the specific country to which regions belong, while supply variables can include measures of industrial structure, occupational structure, take-up of higher education, R&D intensity and so on. However, though the problems of potential mis-specification may be lower than in conditional convergence models, they nevertheless exist. For example, a deleterious industrial structure or low take up of higher education may be associated with economic backwardness and receipt of Objective 1 funds. Moreover, leaving out natural convergence measures may ascribe more to policy effects than is justified. As Cheshire and Magrini (2000) point out, there is also the problem that regions themselves are inconsistently defined, reflecting, for example, traditional administrative and political boundaries in the member countries of the EU. They advocate using functional urban regions (FURs) for this reason, although there are data limitations involved in such an approach.

This “non-convergence” approach can potentially incorporate policy variables such as the input of Structural Funds as explanatory variables although few studies explicitly incorporate such variables. Cheshire and Magrini (2000), for example, test a model of this type to explain per capita income growth in functional urban regions in Europe. Explanatory variables include macroeconomic variables, industry structure, population density, research and human capital and change in economic potential arising from the spatial economic impact of European integration. However, there is no direct assessment of the impact of the use of Structural Funds. Nevertheless, indirect evidence of the impact of EU funding arises from a number of studies. De la Fuentes and Vives (1995), for example, examine Spain within the context of a growth model that includes public and human capital. They find that public investments in infrastructure and education (and the ERDF specifically) can help reduce regional income disparities. However, they suggest that the net effect on Spanish output would have been negative due to less efficient allocation of capital. This is an interesting point that might support a policy of concentrating scarce economic development resources on the areas with greatest potential rather than the most need.

Martin (1998a 1998b 1999a 1999b) and Bosca et al ((1999) also conclude that regional policy variables such as investments in public and human capital foster growth but that “natural” factors are more important than regional spending in engendering convergence. Moreover, the conclusions suggest that regional policy can only work well if the relevant national macroeconomic framework is appropriate.
Midelfart-Knarvik and Overmann (2002) examine how European integration has changed the location of industry and conclude that, while states and regions are becoming more specialised within the EU, the process is very slow. They argue that Structural Fund expenditures may have partly distorted the efficient allocation of economic activity, thereby reducing the potential gains from integration. For example, they conclude that too much R&D intensive industry had been encouraged to locate in countries that have low endowments of skilled labour.

Arguably, the conclusion that the use of Structural Funds may have impeded the extent to which integration has improved the efficiency of the EU is not surprising for, clearly, the aim of designations such as Objective One is to reduce the necessity of labour to move from problem to prosperous regions in search of the best return. Even so, this raises very interesting questions about the targeting of scarce economic development funds in the context of the global competitiveness of the EU in total, an issue of some importance in the light of the findings of Dunford (2005), for example, that the EU is lagging behind the US in this regard.

**Multi-equation macro-econometric simulations**

An alternative approach to evaluation is to simulate the impact of policy intervention utilising *multi-equation macro econometric models (reference needed here)*. In the specific case of evaluating the impact of EU Structural funds, it is necessary to utilise models which can pick up both leakages and feedbacks between assisted and non-assisted regions especially within member countries and also interrelationships between the EU and the rest of the world. Inevitably, a danger with this approach is that the predictions emerging from the model may all too easily be assumed to be factual. In practice, there are huge problems involved in constructing and utilising national econometric models let alone regional ones. Different theoretical beliefs of model builders, different degrees of sophistication, different assumptions of the future course of exogenous variables, underlying data inadequacies, the alternative treatment of shocks, and the adjustment of raw model output by “tender loving care” all give plenty of scope for very different outputs by alternative forecasting teams and/or lack of confidence in those outputs (Cuthbertson and Gripaios; 1997).

One simulation approach which has been specifically developed to analyse the impact of the Structural Funds in Objective 1 regions is the HERMIN model (Bradley et al 1995). This open economy model was originally designed in the 1990s and separate versions exist for some
of the regions and states to which the funds have been applied. The model is disaggregated by broad sector and encompasses manufacturing (a mainly traded sector), market services (mainly non-traded), agriculture and government (or non market) services (ESRI, 2002). The model is made up of three main blocks. - a supply side (which determines output, factor inputs, wages, prices and productivity ), an absorption side (which determines expenditures) and an income distribution side (determining private and public sector income). Though the model is essentially Keynesian, it does have some neoclassical features. For example, manufacturing output is affected by price and cost competitiveness as well as demand while demands for factors of production are also sensitive to relative prices. The core of the model has around 20 fully behavioural equations and the model was calibrated using time series of national accounts data for 1980-2000.

Clearly, the HERMIN model is highly aggregative and so, to be useful for Structural Fund evaluation, the funds themselves have to be aggregated into three policy areas. The first is investment in improved physical infrastructure, the second investment in improvements in human resources (i.e. education and training) and the third is expenditure on direct aid to the productive sector (i.e. investment support, R&D, management training etc.). Simulations have been undertaken from 1993 to 2010, once on the basis of Structural Fund planned (rather than actual) expenditures from 1994-99 and once on the basis that no such expenditures had taken place. The difference is then put down to the operation of the Structural Funds. It should be noted that the carry over effects of Structural Funds from 1989-93 and the continuation of aid from 2000-2006 are ignored. So is the possibility that national/regional authorities might have spent more in problem regions had the Structural Funds been unavailable.

Table 3 illustrates some of the results of the model in the form of a cumulative structural fund (CSF) multiplier defined as the cumulative percentage increase in GDP/Cumulative CSF share in GDP (ESRI, 2002).

<table>
<thead>
<tr>
<th></th>
<th>Greece</th>
<th>Ireland</th>
<th>Portugal</th>
<th>Spain</th>
<th>East Germany</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-1999</td>
<td>0.67</td>
<td>1.44</td>
<td>1.12</td>
<td>1.07</td>
<td>1.69</td>
<td>1.24</td>
</tr>
<tr>
<td>1994-2002</td>
<td>0.76</td>
<td>1.88</td>
<td>1.53</td>
<td>1.23</td>
<td>2.11</td>
<td>1.33</td>
</tr>
<tr>
<td>1994-</td>
<td>1.07</td>
<td>2.83</td>
<td>2.55</td>
<td>1.77</td>
<td>4.44</td>
<td>1.48</td>
</tr>
</tbody>
</table>
It can be seen that whilst, in the long run, the multipliers are all positive, there are significant differences amongst the areas evaluated. ESRI (2002) argues that the high multiplier for East Germany is explained by the fact that it started in a much worse position than other regions and had most to gain in terms of catch up. In addition, its initial infrastructure was poor, so infrastructure investment had great benefits. It is also argued that Ireland benefited from its openness, whilst Greece suffered from the fact that it was the most closed economy. The analysis concludes that “Perhaps the lesson to be drawn from the analysis .......... is that structural change in an economy – involving openness, institutional quality, etc. – is driven by forces beyond the CSF. The CSF may serve to accelerate these changes, but is the wider challenges of EU membership that probably dominate”. (ESRI, 2002).

It is important to note that the multiplier estimates of the type outlined in Table 3 should be treated with caution. Indeed, ESRI (2002) give their own health warning noting that other policy shocks and external economic events will have operated at the same time as the regional funds and are hard to disentangle. It is also recognised that the HERMIN models have weaknesses including insufficient allowance for crowding out and that the method of incorporating regional policy into the HERMIN models draws on incomplete research into the impact of increased public investment on economic growth and development. Other models (e.g. the QUEST model of the EU (Röger, 1996)) inevitably suffer from many of the same defects. Clearly, the ideal situation would be to have a single quality model of the whole EU distinguishing Objective One economies from the rest. Such a model could then be used to estimate the net impact on Objective One regions of CSF expenditures and the costs to the more prosperous parts of Europe that fund them. However, such a model is a long way off. Indeed, the defects of the present approach have led some commentators to favour much simpler single-equation econometric approaches of the type outlined earlier (Ederveen et al 2002).

Micro-economic case studies

A final method of impact evaluation involves microeconomic case studies which focus upon examining what has happened in specific regions either in terms of the impact on the region of total regional funding or of specific policy measures. This approach can, in theory at
least, consider impacts on regional per capita income and can also be used to assess the extent to which Structural Funds have created the foundations for future economic growth, the extent to which some interventions have exerted more leverage than others and whether there are lessons to be learned from the perspective of the specific region or for EU policy making in general. Of course, all the caveats noted previously concerning data quality, overlapping policies and noise inevitably apply to evaluation studies of this type.

A number of early case studies are reported in Bachtler and Turok (1997). They seem to suggest that the economic effects of cohesion support were hard to quantify and, therefore, difficult to assess. However, it seems likely that any effects were modest. Moreover, while the receipt of funds encouraged cooperation between local economic agents and strategic planning, it also led to extensive rent seeking i.e. regional plans were often designed to draw down funds per se rather than to make the most use of them.

In order to examine this approach to evaluation in more detail it is useful to consider the various ex post appraisals of Objective 1 funding for 1994-2000. A useful starting point is the EU overall evaluation of the individual country evaluations (ECOTEC 2003a). This points out that “there are still a number of difficulties in quantifying the consequences of intervention as a result of a lack of systematic data collection on the part of monitoring systems”. It also goes on to say that “most of the effects of cohesion policy, however, cannot readily be expressed in quantitative terms. Rather added value comes from factors such as strategic planning, integrated development policies, partnership, evaluation and the exchange of experience, know how and good practice between regions”. The report also notes that successful intervention relies strongly at a local level on a sound and stable economic framework, a judicious choice of strategic priorities, administrative and institutional capacity and the quality of the projects put forward for support.

A difficulty for case study evaluations in identifying transformative impacts stems from the timeframe within which they are undertaken. Generally, transformative impacts are slow to emerge, a fact which is illustrated by the stability of many Objective 1 designations. Within programmes, spending tends to have been skewed towards the end of the programme period, reflecting problems in ‘gearing up’ to deliver a new programme. So, even if technical difficulties are overcome, lags may delay the full impact of the programme until beyond the date of the evaluation. Even so, qualitative benefits of the type outlined above would have been expected at some stage to have led to measurable
economic benefits and should be picked up in evaluations of regions which have been in receipt of Objective One funds for more than a single programming period.

A number of specific conclusions from the ECOTEC (2003a) study were that:

(1) Transport investments and those in human capital make the strongest contribution to economic development. This partly conflicts with the evidence of Rodriguez-Pose and Fratesi (2004) who argued that there had been too much focus on infrastructure;

(2) Private sector investment was levered in but not on the scale anticipated. In this regard, the Cohesion countries and the UK and France did less well than Austria, Germany, Netherlands and Belgium;

(3) The use of Structural Funds to develop research capacity has not always been optimal. “In some cases, however, there appears to have been over-investment in research centres in relation to both needs and potential, so leading to their under utilisation”;

(4) Lack of coordination between member countries has caused problems with transport infrastructure e.g. the new Somport road tunnel through the Pyrenees joins to a motorway on Spanish side but only to an old national road on the French one.

Individual country evaluations highlight a number of the points already made. In the case of Greece (European Enterprise Organisation, 2002), for example, the evaluation report argues that there was little impact from Structural Funds until the mid 1990s, since when economic growth has been above the EU average. The report argues that this is related to major reforms of national economic policy during the 1990s. Thus “the critical difference between the first and the second CSF is that, during the second programming period, EU transfers have been utilised in combination with national structural policies, thus complementing efforts rather than merely substituting for the lack of policies”. The lesson seems to be that other national policies and good institutional arrangements are necessary prerequisites for CSF success. Such a conclusion further highlights the difficulty of disentangling the effects of domestic and EU policies in any evaluation exercise. The report concludes that while the CSF has led to an increase in GVA, it has had little effect on employment though it may well have declined without it.
In Greece, infrastructure spending was around 46% of the Structural Fund total. The consultants examined ten large infrastructure projects and found overall efficiency was “modest”. Most of the projects “exhibit time delays, cost overruns and reduced actual physical output”. A variety of reasons explain this “including gaps in the institutional, legislative and administrative framework surrounding public works and inadequate technical and environmental studies”. The (lack of) capabilities of the native construction sector were also a problem. A further problem in the Greek case is that the evaluation of Structural Funds doesn’t seem to have had much effect in improving matters over time. Thus, the study notes that “it cannot be argued that the evaluation findings had any major influence on the implementation of the programmes or affected the shaping of strategies and the conclusion of institutional arrangements for the 2nd CSF”.

In the case of Ireland, the evaluators (Fitzpatrick Associates, 2003) utilised the HERMIN model. The report was critical of the fact that there was “a tendency for strategies to reflect planned investments, rather than vice versa”. Even so, it suggests that the impact of Objective 1 was highly favourable. They point out that the “1994-1999 CSF coincided with a period of very rapid economic and social change and convergence in Ireland. The CSF cannot, of course, be credited as the sole cause of this development. However, alongside a number of other key factors – previous investment in the Irish education system, good macroeconomic policy, the impact of European integration on trade and investment, and a positive external environment – the Structural Funds were an important part of a virtuous economic circle”. Again, the emphasis upon the importance of combining Objective One intervention with other appropriate policies and the difficulty this poses for evaluation are central to the analysis. An additional problem in the Irish case is that the whole country qualified for funding and so there are no comparator regions within the country. A similar problem arises in the Portugal evaluation (CIDEC, 2003) which is also model-based and favourable with the consultants estimating that the contribution of the CSF to growth was 0.42 percentage points.

The Spanish evaluation (CEET-Ecotec, 2003) is model-based but, as some of Spain is not covered by Objective One, there are comparator regions. The evaluation notes that between 1995 and 2000 average GDP per capita in the Objective 1 regions increased by 18.4% and reached 68.7% of the EU average from a base of 65.4% in 1995. However, the relative performance of Objective 1 regions in comparison to other regions in Spain was poor, GDP per capita remaining at 83.7% of the Spanish average. The evaluation concludes that “It is difficult to quantify the economic effects generated by the
Structural Funds in the Objective 1 regions. Moreover, the report notes that a “key absence was the lack of target output and results indicators in many cases which would have enabled the performance of the Operational Plan to be more effectively monitored and facilitated evaluation”. Either way, the fact that “employment has grown by 20.82% in Objective 1 regions and by 20.33% in Spain” would not seem to provide convincing evidence that Structural Fund interventions have had significant benefits.

The Italy evaluation (Ismeri Europa, 2003) suggests that Structural Fund interventions have been “a vital means in the support of development policies at a time of heavy reductions in national spending”. This seems to imply that EU funding was substituted for reduced national support. In any event, the best reading of the results would suggest that the most that the CSF could have achieved is to have stopped the gap between north and south from widening. Indeed, the evaluation emphasises that the “productivity gap between the two areas of the country remains constant, around 30%, during the period 1995-1999”. The Italy evaluation also contains some important criticisms of the operation of the funds. It particular, it notes that “The real problem was that all the CSF programmes, even though each had its own rationale, did not compose an integrated consistent strategy for development”. This seems to have led to “no selection of objectives and a very high fragmentation of resources”.

Interestingly, the UK evaluation (Ecotec, 2003b) was also highly critical of many aspects of the decision making process and, in particular, with the lack of strategic focus. The report states that “PMC (Programme Monitoring Committee) meetings were often dominated by discussions relating to financial absorption rather than questions of strategic rationale”, while stakeholders reported that the “political nature of meetings and a defensive culture did not lend itself to open and honest dialogue between all parties”. A specific problem was that the “weaknesses in ‘strategic thinking’ were perceived by some to be reinforced by ‘money chasing’ by public sector organisations who were motivated by the desire to get their ‘fair share’ of resources for particular sector or area interests”. Given the above, it is not surprising that the UK report noted that there were also “weaknesses in terms of the integration between different elements of the programmes”. The overall conclusion was that the programme strategies were “generally lacking with regard to any explicit rationale regarding prioritisation” and had “limited focus”.

In terms of impacts, there is the rather disturbing conclusion that “despite increases in GDP in real terms, all three (supported) areas fell
back over the programme period relative to the UK performance”. Moreover, though there seems to have been considerable job creation, much of it has been in the public sector and, in Merseyside and Northern Ireland, in call centres. In short, there has been above average growth in lower value added sectors which may not bode well for the long term. There was, however, some hope raised that the contribution of Structural Funding to increasing economic activity would have demonstrable benefits over the long term, underlining the caveat about the timing of evaluations made above. The evaluators also suggest that, in all cases, “the programmes can be viewed as making an important contribution to moving economic signs in the right direction alongside the wider effects of strong national growth and, in the case of Northern Ireland, the positive developments in the peace process”. Again, this seems to suggest that it is hard to distinguish Structural Fund effects from national factors.

The UK report concludes that infrastructure spending is more highly regarded than business support elements, the latter being “too broad” and lacking focus on “higher order functions such as export and market development and sectors with growth potential”. This was seen as having hindered attempts to improve business competitiveness. Moreover, the human resource elements did not significantly improve the skills base; indeed, there was too great a focus on low level vocational training. This may be a reflection of the skills base in assisted areas and on the new found enthusiasm for “Community Economic Development” (CED) type activities and capacity building in the 1994 round of programmes, which saw efforts to tackling social exclusion as a two stage process, with engagement and development of basic skills a necessary precursor to training facilitating re-entry into the labour market. Interestingly, ECOTEC were also commissioned by a UK Government Department to examine the added value of the Structural Funds (ECOTEC, 2003c). The conclusion was that they “do not seem to contribute a significant level of added value”.

In Austria, Objective 1 funding was only available to Burgenland and does not appear to have significantly improved that region’s share of national GDP (Stumm, 2002). The report makes the familiar criticism that “although one can observe a rather positive development in Burgenland as regards the convergence of income levels and the purchasing power during the years 1995-99, it is difficult to clearly identify the economic impact of Structural Funds interventions on these variables”.

The evaluation of the former East Germany (Stumm and Robert, 2003) is model-based, probably inevitably given a lack of data and “a
reluctance to specify quantitative impacts or even output targets”. Moreover, even the model based assessment was hampered because of noise relating, in particular, to macroeconomic effects and industrial restructuring. One interesting point is that much expenditure in East Germany “flew back” to West Germany.

The Netherlands report (Ecorys, 2003) is for Flevoland, which qualifies because of extensive outward commuting. Interestingly, job growth was 3 times the national average from 1994-99 but population growth was also fast such that GVA per head relative to the Dutch figure fell. Again problems were reported associated with poor record keeping.

The Belgian report is for its part of Hainaut (Ecotec/Idea, 2003). It records that “the evolution of GDP is (Belgian) Hainaut was rather unfavourable with GVA per capita falling from 77.3% of EU average in 1992 to 73.4% in 1998. Despite this, the report argues that there is “consensus that important progress has been made during the nineties and that industrial decline has at least been stopped”. The evaluators argue that Structural Funds did not have a large impact in the short term because a “significant share of the measures/actions are of a structural type, which don’t directly translate in job creation”.

Finally, the French report (Ecotec, 2003d). is for six regions, only two of which, French Hainaut and Corsica, are in Europe. It concludes that “as for the GDP, it indeed progresses in every region in absolute value, but the relative improvement with regard to the European average is weak”. In fact GVA per head relative to the EU15 fell in both Corsica and Nord Par de Calais (of which Hainaut is a part) from 1994-1995. Any gains seem to have been in job growth, both Corsica and Hainaut having “shown their capacity to create activities and jobs”. Both regions had job growth above the French average at this time.

It is clear that the programme evaluations present a mixed picture of the effect of policy interventions. The difficulty of identifying impacts, particularly in the sense of isolating Structural Fund effects from other macro-economic measures and other noise, is clearly apparent and is an inherent impediment to the evaluation process. In addition, weak record keeping and the emphasis placed upon qualitative objectives add to the problems of the evaluation process. Many of the evaluations suggest that the benefits of interventions will be felt in the long run, after the time horizon of the evaluation, emphasising the problem of determining the appropriate time period over which to measure impacts. Only time will tell if the optimistic statements concerning the potential long term benefits of the interventions are justified.
CONCLUSIONS AND IMPLICATIONS

The analysis presented in this paper raises some very important issues regarding the impact of Objective One funding. The first is that, in practice, it is very difficult to disentangle the impact of such regional funding relative to the effect of benefits of access to the European market, the enhanced possibilities of catch up such access has offered to successive new entrants, the gradual development of the single market, and where appropriate, the adoption of the single currency. Policies of national governments, some macroeconomic, some microeconomic and others directed at institutional reform have also affected the environment in which Objective One funds have been applied. In many cases, national and regional governments have adopted complementary policies directed at the same target variables that Objective One is attempting to address. In such circumstances, only the impact of policies, in the round, can be assessed.

A second important point is that the results of the impact assessments often conflict being sensitive to choice of start and end period, to the method of assessment adopted and, for similar methods, to the specification of econometric equations. This raises questions about the value of official evaluation and about some of the academic research which has been done on the topic. For the official evaluation, the issue is perhaps whether the current extensive monitoring and evaluation procedure is something of a waste of resources if it is incapable of throwing much light on whether Objective One has broadly helped the development of lagging regions, what has worked where, what has not, and the reasons for success or failure. Perhaps a simpler system recognising the inherent limitations of evaluation is necessary and more consideration and resources need to be given to improving data quality.

As for academic work, there is perhaps scope for a more detailed exploration of the reason why extensive work on the same or similar datasets has produced such different conclusions.

As far as it is possible to ascertain, a broad consensus would seem to be that there has been slow convergence between the member countries of the EU from 1980-2001 and also slow convergence among EU regions. If anything, however, the rate of convergence seems to have slowed down. Since Objective One funding has been generous in the last decade relative to the one before, this may indicate a worsening environment for regional policy in that much of the scope for catch up among the EU 15 may have already been exploited. If so, that may be taken as ample justification for transferring the bulk of
Objective One funding in future rounds to the new member states. As will be argued below, there are other reasons why care should be taken in this regard.

Another interesting point is that there is considerable, though not consistent, evidence of a worsening regional divide within specific countries, in some of which (e.g. Greece) the whole of the territory has been covered by Objective One funding and some (e.g. the UK, Italy and Spain) where only part has been covered. Much further work might usefully be done on this topic but the evidence for the UK would suggest that the move to a service based economy with key functions in capital or provincial cities, outsourcing and management de-layering have all been influential in driving this process (Gripaios and Munday, 2000; Gripaios et al 2000). This may suggest that the scope for the successful application of Objective One funding in poorly performing parts of otherwise successful national economies may be very limited. As suggested by the case studies, much of the funding inevitably leaks to core regions and it is difficult to find strategic investments which can have a long term impact. These points have been argued forcefully in the case of the UK Objective One regions by Gripaios and Bishop (2006).

A further related point is that some studies suggest that European regions are converging to a set of multiple steady states, the performance of which is determined by factors such as distance from and access to the core, educational attainment, industrial structure, R & D capability, corruption and institutional quality. That raises important issues as to what can or should be done in terms of regional spending. Is it justifiable, for instance, to continue to concentrate so much funding on all or part of the worst performing group when, in the final analysis, it could be argued that the scope for redistribution within Europe will be critically dependent on the competitiveness of Europe in the world economy. In this regard, the criticisms of Midelfart-Knarvik and Overmann (2002) of the impact of Structural Fund spending in slowing the gains from integration are important. It is arguable, given the recent poor performance of Europe relative to the US (Dunford, 2005) that it may be important to do rather more to maximise the potential of the better performing regions or at least those with the most potential. The latter are not necessarily the poorest performing regions.

It seems clear that “success stories” in terms of improvements in lagging regions are typically associated with a combination of factors of which regional funding is only one (perhaps small) part. In Ireland, for example, a highly educated workforce, a “good” legal system, a favourable tax regime for companies and for R & D, the English
language and exploitation of ties with America have all played a part. At the other end of the spectrum, the evidence for Greece suggests that early rounds of Objective One funding had less impact than they should have done because of inappropriate macroeconomic policies and institutional and societal weaknesses. That may suggest that care should have been taken to make sure that the right foundations were in place in new member states before these countries were allocated large amounts of Objective One funding for economic development purposes. This was not done in the case of the 2004 entrants but is being applied to some extent in Bulgaria and Romania.

It is also important to recognise that that Objective One funds might have been better directed in terms of the use to which they have been put in specific regions. Some analyses have suggested that too much has been spent on business support and agriculture and too little on education and human capital. More controversial is the impact of infrastructure spending, some analysts arguing that it has been highly beneficial, others that it has increased the scope for leakages given that most has been on transport links to the core. These are important issues, for they question the extent to which EU funds should be spent on places or on people. Spend it on places and there may be no sustainable improvement in economic viability so that people may continue to have to leave; spend it on human capital development in problem regions and you may enable the newly qualified to leave and reduce economic potential still further. All this suggests that considerable care should be taken as to where to direct funds within Europe and indeed within lagging regions. In the latter, there have perhaps been too many weaknesses in strategic thinking, weaknesses compounded by pressure from local interest groups, local media and indeed EU funding rules to spend allocated monies without sufficient consideration of what will be there to show for such spending some years after the programme has been wound up.

Of course, policy evolves so an interesting issue is the extent to which the funding rules and guidelines for 2007-2013 take account of these criticisms.

In the new funding period, the Structural Funds are to be used to help drive the Lisbon Agenda on economic reform. In this regard, the focus is much more on strategic interventions than was previously the case, these being directed at three main themes of jobs, growth and competitiveness.

Objective One now disappears as a categorisation but is replaced by the term “convergence regions”, these being those with GVA per head
less than 75% of the EU average for the period 2000-2002. They will continue to receive the bulk (82%) of the Structural Funds and most will be in the new member states. The policy, therefore, continues to be very broad brush and, while there is undoubtedly considerable scope for catch-up, it is arguable whether such a concentration of funding is in Europe’s long term interests. A further negative point is that, since the funds will still be allocated to Nuts 2 regions, there will still be plenty of scope for leakage.

More positively, the fact that the use of this part of the Structural Funds is to be focused on “speeding up the convergence of the least developed Member States and regions by improving conditions for growth and employment through the increasing and improvement of the quality of investment in physical and human capital, the development of innovation and the knowledge society, adaptability to economic and social changes, the protection and improvement of the environment and administrative efficiency” (European Commission 2006) suggests that some lessons have been learnt and that the EU is embracing a more competitive and adaptable economic vision.

The real issue is what happens on the ground. Member States have agreed the new priorities but, as in the past, there may be plenty of scope to use EU monies sub-optimally both from the point of view of their own citizens and those of Europe in total.
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