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Editorial policy

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Regional development in Europe: An assessment of policy strategies

European Investment Bank

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Preface

Philippe Maystadt

President

The main task of the Bank as set out in the Treaty is to support the overall harmonious development of the Union, and in particular to reduce economic disparities between the different regions. Recent strategy reflections have confirmed this as the main mission of the Bank. However, it is timely for us to ask once more how we wish to go about achieving this goal.

The level of support from the EU for regional development is substantial. For example, last year alone the Structural Funds spent some euro 34 billion, while Bank lending for regional development was euro 17 billion. Unfortunately, and despite this support, the broad picture of Europe does not suggest that a great deal of convergence has actually taken place.

In the past, the consensus was that regional policies could support growth, and that convergence would come about by poorer regions catching-up with richer ones. Increased equality and growth could go hand-in-hand. Recent experience has led a number of commentators to question this. They argue that there are strong economic forces that lead to divergence between regions. Regional policy cannot do much to overcome these forces. This means that regional spending is simply a transfer of income from rich to poor - with little effect on the productivity gap in poor regions. Indeed, this may lead to lower overall prosperity if it drains resources from those wealthy and innovative regions that are the main engines of economic growth. If this is the case, we face a trade-off between equality and growth.

This disquiet over the intellectual underpinnings of regional development and the lack of empirical evidence that policy is working, is coupled with a growing emphasis, both at the EU and the national level, on the need to improve public sector effectiveness and accountability. Poorly used public money can hardly help deal with the problem. The conclusion, to which I fully subscribe, is that it is quality not quantity that is important.

Take the example of the EU Structural Funds. The broad thrust of Agenda 2000, the strategy for the EU budget over the next 6 years, is that large increases in spending is not needed. What is needed is to improve channels of distribution. A key focus will be on streamlining eligibility criteria and enhancing cost-effectiveness. In this general environment it is natural that the Bank also asks how its own role can be enhanced, and how best its particular instrument - the long-term loan - can be used.

The broad picture I have mentioned hides the fact that while overall inequality may not have changed much, the position of some regions has. Some regions

have caught up, some others have fallen behind, while others remain at a similar place in the ranking. A necessary starting point must be to try to understand what are the factors behind these different performances. What was the role of policy in this process? Unfortunately, views differ widely and are often highly influenced by local conditions and experience. Untangling the factors that explain growth is a very difficult exercise.

However, when formulating policy there are a number of questions that we must try to answer:

Firstly, we must assess the validity of recent economic thinking about geography. We should try to clarify what kind of market failures lie behind regional divergence and what levels of inequality we should be willing to accept. When should governments intervene?

Secondly, the role of government has evolved in recent years, with the state withdrawing from direct involvement in a number of activities -- privatisation of public utilities being one example of this. In terms of the debate on regional development, the issue is when spending on investment is best done by the government itself, and when public funds should be used to support investment by the private sector. If we follow this latter approach - supporting the private sector in poorer regions - how should this be best done?

Thirdly, it is clear that preparing regional development policies is largely the responsibility of Member States. The EU - and particularly the Bank - is more a source of finance than anything else. I do not think that this situation will change. But we already know that spending by itself is not enough. Public funding must be integrated into an appropriate package of policy measures. What then can we learn from the regional successes and failures about the measures that are needed to complement investment?

This leads immediately to a question that is of direct relevance to the Bank's operations. What should we look for in projects if Bank lending is to be effective? Can selection criteria be developed to help ensure that regional growth is actually achieved by a particular investment?

Obviously, these are complex issues and we cannot expect to find easy solutions. However, I hope that the research at the EIB will help us take a least some steps towards the answers.

A conference on regional development policy at the EIB

A conference on Regional development policy and convergence in the EU, was held at the EIB on 20 January, 2000. The conference was aimed at taking stock of what we know about regional development policies. Sessions covered economic theory on convergence, an analysis of policies used to assist the catch-up by poorer zones, the role of investment in convergence, and the issues raised by different forms of investment support.

Speakers included:

Angel de la Fuente,
of Instituto de Análisis Económico, Barcelona

Yannis Ioannides,
of Tufts University, Medford, USA

Philippe Maystadt,
President of the EIB

Giovanni Peri,
of Bocconi University

Margarethe Quehenberger,
of the EIB

Bertrand Rossert,
of the EIB

Patrick Vanhoudt,
of the EIB

Rodolfo Helg,
of LIUC, Cattaneo University, Italy

Philippe Martin,
of the Ecole Nationale des Ponts et Chaussées, Paris

Daniel Moucque,
of the European Commission

George Petrakos,
of the University of Thessaly, Greece

Andrés Rodríguez-Pose,
of the London School of Economics

Jacques-François Thisse,
of the Université catholique de Louvain

Gianfranco Viesti,
of the Bocconi University.

EUROPEAN INVESTMENT BANK

Editors' Introduction

During the last year the Chief Economist's Department of the EIB has conducted a number of studies along a regional development theme. The research programme has included a review of the theoretical and empirical evidence relating to convergence in Europe, together with an assessment of the impact of regional development policies. The programme has included case studies with outside collaborators on the experience of a number of regions in Greece, Italy and Spain. These have compared regions of difference performance in each country in an attempt to identify the relative importance of geography, initial conditions, and policy on economic growth.

In parallel, the Evaluation Department of the EIB has undertaken a number of ex-post studies of the effectiveness of the Bank's projects in contributing to regional development. The most recent study of projects in Italy and Portugal was performed in collaboration with PA Consulting Group.

As part of this overall effort a conference, "Regional development policy and convergence in the EU", was held at the Bank on 20 January, 2000. Details of speakers are given on the opposite page. As always, thanks are due to Heather Halahan-Gibson and Michèle Schmitt for conference organisation.

Given the importance of the subject to the EIB, we have decided to devote two editions of the EIB Papers to regional development. This edition gives the broad overview of the policy issues (see the paper, "What diagnosis for Europe's ailing regions?" by Hurst, Thisse and Vanhoudt), together with the case studies and the findings regarding project selection. In a way, this tries to respond to the main themes raised by the President in the Preface.

Another edition ("Regional convergence in Europe: Theory and empirical evidence", Volume 5, Number 2, which has been published simultaneously) is devoted to the intellectual framework for thinking about regional disparities. The questions addressed in that edition relate to the first few points mentioned by the President: what does economic theory and the empirical evidence tell us about the forces that lead to convergence or divergence? What is the motivation for government intervention: is it to increase equity or efficiency? What issues does government intervention raise? The broad conclusion is that there are likely to be market failures that justify policy intervention on efficiency grounds, but that designing the appropriate policy with this aim may be a complex matter. Some of what is done today may be better seen as income redistribution rather than anything else. This is also discussed further in the overview paper mentioned above.

We would like to take this opportunity to thank all of our collaborators. A special word of thanks is due to Professor Jacques-François Thisse of the Université catholique de Louvain who has helped us to design the overall research agenda.

Christopher Hurst and Patrick Vanhoudt

What diagnosis for Europe's ailing regions?

They answered as they took their fees,
"There is no cure for this disease."
Hilaire Belloc

Christopher Hurst

Jacques-François Thisse

Patrick Vanhoudt

1. Introduction

It is not so long ago that policy makers thought that excessive regional disparities would disappear automatically in the long run. Arbitrage possibilities arising from competition and factor mobility were expected to induce a more than average growth performance in lagging regions. Having the economic engine in a higher gear would eventually make these regions reach the standard of living realised elsewhere. Where convergence was not swift enough, most likely this could be accelerated by increasing public infrastructure. Governments responded by pouring huge quantities of concrete in lagging regions.

These views have recently changed. Indeed, fifty years of costly regional policies in the post-war period have led to not much more that the *status quo* (see Quah, 1996 and 1997). Over the most recent decades, for instance, income inequality among European regions has remained rather constant from an aggregate point of view. This is discussed further in *EIB Papers*, Volume 5, Number 2 ("Regional convergence in Europe: Theory and empirical evidence"). Some economists are now taking this as the natural, or at least as the global-capitalist order of things: the rich get richer and so do the poor, but without ever catching up.

However, to believe that the productivity gaps are immutable is a mistake. There are certainly some regions within Europe that started out at relatively low levels, but have now jumped ahead. Conversely, there are others that have been on the way down the income distribution curve. Given the complex dynamics of catching-up and falling behind that are at play at the regional level the only possible approach is to look at what has happened in some real-life examples. With this in mind, we draw on several case studies of regional development (both at the regional and project level) to define a range of subjects for further discussion. We should emphasise at the outset that the purpose of the paper is *not* to discuss the effectiveness of any existing agency or programme, but rather the principles that could guide regional development policy in general. The terms, "transfers" and "grants" are used loosely throughout the paper to mean all types of financial assistance, including tax breaks, loans and guarantees.

The paper is structured as follows: in the next section we discuss the motivation for policy. Externalities and market failures are needed to justify policy intervention from an economic efficiency point of view, and we discuss how geography can lead to these problems. The main message is that market failures do exist, and countering them is a complex matter.

Section 3 discusses who finances policy interventions. Within a particular country there are usually automatic transfers between regions due to federal taxes and social payments. It will become clear

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that in Europe regional development policy also implies a transfer of resources between regions: policy that is motivated by economic efficiency will bring with it an element of income re-distribution.

Section 4 turns to project level experience to see what type of investments have contributed to regional development. Not all projects are equally effective in this task and careful project selection is critical. The effectiveness of policy in changing location decisions must also be considered.

Section 5 looks at experience in several regions in Greece, Italy and Spain. A number of features distinguish successful regions from their unsuccessful peers, not least the quality of local public administration. Public programmes to support investment have not been uniformly successful, given, amongst other factors, their lack of adaptation to local conditions.

Section 6 then addresses the possible logic for policy intervention at the EU level. This is far from straightforward, given the re-distributive nature of regional policy. However, the institutional set-up of the EU gives scope for inter-governmental transfers as part of overall consensus building. The appropriate conditionality for the use of EU funds is also discussed. When funding is used to provide incentives to the private sector, the problem of dead-weight losses - that public funds may not actually change the real economy in any tangible way - becomes particularly important.

Section 7 introduces the issue of the enlargement of the EU to Eastern Europe, and discusses what this may imply for regional development policy. The paper concludes with a summary of the policy lessons that emerge from this broad picture.

2. Spatial market failures

Why are inequalities persistent over time? Does influencing the economic tissue in regions help them to converge? Is reducing inequalities efficient, feasible or even desirable? The companion edition to this *EIB Papers* (i.e. Volume 5, Number 2) sets out the theoretical framework for assessing these questions in more detail.

There are three market failures that may give rise to persistent regional imbalances.

In brief, there are three market failures that may give rise to persistent regional imbalances. A first one is substantial technological externalities. By this we mean that firms learn from one another how to do things better. As a result, newcomers will tend to locate in those areas where there is already innovative activity, as well as the larger market. A much quoted example of this is California's Silicon Valley, though the phenomenon of "benefits that are external to the firm" had already been observed by Alfred Marshall at the end of the 19th century in his *Principles of Economics*. Urban labour markets may work better (it is easier to find someone with the right skills), there is better access to a number of shared services (such as legal, accounting, advertising, and equipment repair), and there may be a more efficient resale market for assets. Within nations, this kind of externality may induce a core-periphery pattern of economic development. Lower transportation costs are likely to reinforce a pattern where firms cluster in some locations since this reduces the chances of losing business of

distant markets. Conversely, a desire by firms to relax competition on each local market tends to weaken clustering and the outcome may be too little rather than too much concentration.

This brings us to the second type of market imperfections - pecuniary externalities. As a result of the productivity differences outlined above, both skilled workers and capital will tend to flow to richer areas. Firms and workers do not, however, account for the impact of their re-location on the well being of those who stay put or of those who live in the region of destination. For instance, migration will put a downward pressure on the wage level in the region of destination while demand, and hence prices, will be boosted at the same time. It is thus possible that the economy becomes inefficiently organised.

We cannot say in general whether the combination of these externalities leads to excessive agglomeration or not. All this will depend on local circumstances, and trying to change economic geography can become very complex. For example, a new highway linking a lagging region may simply expose that region to increased competition from imports. The long-run effect, as businesses relocate away from the region, can be that jobs become scarcer – exactly opposite to what was intended.

There is a third reason why imbalances can prevail. In some cases a region does not take off because a minimum threshold of economic activity has not been established. No one knows how a new business would perform in such an area, as many prices are not known in advance. Lack of adequate information will then prevent the development of a network of service and intermediate goods suppliers, which leads, of course, to a vicious circle and persistent underdevelopment. Unfortunately, it is not clear that the information needed to counter this problem is available to governments, whereas all the other features mentioned above may also come into play. This makes the design of effective policy a challenging task.

In sum, the microeconomics of location decisions tells us that the possibility of incomplete markets and the associated co-ordination failure gives a general justification for regional policy from an efficiency point of view (in fact it is the only market failure that will always lead to unsatisfactory concentration), and that trying to change economic geography is a complex task due to the many technological and pecuniary externalities that may be at play.

Obviously, the optimal policy would be one where the economic agents responsible for a market failure also finance its correction. But where does this leave us if a co-ordination failure is the root of the regional problem?

3. The logic for regional development at the national level

Today, people in Europe tend to stay where they are despite wage differentials between regions (1). For example, a study by Obstfeld and Peri (1998) reports that labour mobility in Germany, Italy and the UK was only about one third of the US level. Their data is shown in Table 1. While

1) This is unlike the situation in the 1950s and 1960s, when some 12 million southern Europeans moved northwards.

Low mobility means that public spending for regional development must lead to transfers between groups, since the recipients are not the same as the contributors.

international comparisons of migration are difficult due to the lack of comparable data, this overall picture is confirmed by other studies. Important reasons for immobility includes the functioning of the housing market and a lack of information of job opportunities elsewhere. Low mobility means that public spending for regional development *must* lead to a transfer from one group to another, since the people who are net recipients (in the lagging region) are not the same as the net contributors (in the more prosperous region).

Why should one group wish to support another? Clearly, most societies agree that some sort of social safety net is needed for people that are unable to support themselves. It is also common that the wealthier are considered as more able to pay for these expenditures. Particularly within a l*ocal* community it may also be in the self-interest of the more prosperous suburbs to support their less fortunate neighbours. For example, poverty may lead to the under provision of some public goods and services – e.g. street lights, public parks and other public amenities – and may breed increased criminality and vandalism in the rich areas. By accepting a premium – i.e. paying a more than proportional share of the total bill – the prosperous are able to protect their property rights without having to resort to more expensive options.

Table 1. Average net interregional migration (% of regional population).

Period	USA	Germany	Italy	UK
1970-9	1.20	0.27	0.37	0.47
1980-9	0.84	0.34	0.33	0.26
1990-5	0.87	0.31	0.40	0.20
Average relative to USA	100%	32%	38%	32%

Notes: Figures are population-weighted averages over regions. German numbers are for western *Länder* only, leaving out Berlin

Source: Obstfeld and Peri, 1998

But how does the concept of social cohesion apply to regional development when we take a broader national view? A first observation is that the inequalities of average income that are found across space within in a particular country – say differences of two-to-one at the provincial or county level (2) – are dwarfed by the scale of other income inequalities that are found within regions.

Richer regions will naturally be ready to help fund projects that are in their own interest wherever they may be located. These include (3):

2) Such as the French régions *or German* Regierungsbezirke.

3) This list is not meant to be comprehensive. There are other public goods at the national level such as defence, and when large income differentials exist the fear of immigration may also motivate transfers. It is sometimes asserted that uniform geographical distribution of economic activity is in itself a public good, but it is hard to see why this would be so.

- when major transportation connections cross poorer regions; and,
- when pollution spreads across regions, or society attaches a particular value to the natural environment wherever it may be – in other words, when the environment is a public good.

Even if they are not motivated by the goal of minimising regional inequalities, it is rarely the case that richer regions can say that everyone must accept their own geographic situation.

Self-interest aside, it is probably fair to say that taxpayers in richer regions are unlikely to be highly motivated by the goal of minimising inequalities that exist across space. However, it is rarely the case that richer regions can say that everyone must accept their own geographical situation. What makes this impossible is unemployment and the existence of national fiscal solidarity.

It is common for lagging regions to have high and persistent unemployment, and for these patterns to have remarkable stability. For example, Daniel Moucque (in *EIB Papers*, 5(2)) notes that the 25 regions with the lowest unemployment in Europe have hardly changed with an unemployment rate steady at about 4 percent. This is likely to be close to a minimum given frictional unemployment. On the other hand, rates in the most affected regions remain at over 20 percent, and even show a tendency to increase. In fact the evidence does suggest that regional growth usually comes from increasing the productivity of those already in work rather than broadening the job market.

High levels of unemployment arise, at least partially, from rigidities in labour markets. While productivity rates are lower in poorer regions than in the richer core, wages may be influenced by factors at the national level, such as wage bargaining between unions and employers (e.g. see Faini, 1999) - the result is that workers in poor regions are priced out of the market (4). Regions with persistent unemployment may be a continual drain on the public purse due to entitlements to unemployment benefits and social security payments, also set at the national level.

Fiscal payments between regions may be in everyone's interest when they act as an insurance against asymmetric shocks that hit one region after another. This may be particularly the case if regional economic structures are dominated by sectoral specialisation and monopolist industries (5). In this case, the economic costs of restructuring may be very significant, and some form of insurance is a rational response. However, this has become a very one-sided affair for many European regions due to the rigidities we have just described. Because of this richer regions may be willing to make some additional payments to poorer regions in order to reduce unemployment. These may convert into quite large sums if unemployment is high and social benefits are generous.

Of course, this may be something of a chicken-and-egg problem. The reasons for low migration are complex, but at least one of the reasons is that relatively generous social security payments reduce the incentives to search for jobs in other regions. Consequently, the best option would be to deal with the malfunctioning of the labour market directly. Lower nominal wages in poorer regions would

4) In the US regional shocks usually lead to some unemployment, so markets are not fully flexible in that country either. However, unemployment subsequently returns to a steady equilibrium rate as the unemployed migrate to other regions (see Brauerhjelm et al., 2000, for further discussion).
5) Clearly, this will depend on the size of the regions in question.

not necessarily be unequitable since housing and commuting costs are often significantly lower than in rich urbanised areas. Nevertheless, labour market reform may not be on the political agenda. The political process may rather promote regional development transfers since voters are distributed through space, and voting decisions in the poorer regions may be influenced by public spending.

Avoiding the emergence of moral hazard at the regional level may mean that aid should include certain conditionality. We return to this issue later. At the same time, it should be recognised that claimants may argue that they deserve a share of the benefits that arise due to stronger agglomeration within a small number of regions. All this shows how complex the issue of interregional equity is.

The second best option of using public spending to change economic geography would still be desirable if it is at least effective in achieving its goal. However, we have already mentioned that the complex economic forces leading to agglomeration mean that the long-run outcome of some policies may be counter-productive (6). And, aside from issues of microeconomic structures, there are important institutional issues to be addressed. Let us start with a look at which types of projects have been successful in achieving regional development in the past.

4. Lessons from *ex-post* studies

Public money is involved and there are many groups that consider they have a say in a project's outcome.

The paper by Bertrand Rossert (this volume) looks at the *ex-post* experience of a number of projects. Rossert notes that two special features distinguish regional development projects from investments in other regions. Firstly, public money is involved and this means that there are many groups who consider that they have a say in a project's outcome (e.g. local government, unions, landowners, local industries, etc.). Unfortunately, these stakeholders are not well-defined at the start of negotiations. As some can effectively block the project going ahead there can be repeated rounds of inconclusive bargaining. There seems room for improvement here, and agencies supporting regional development should strive to identify all interest groups and to see that they are involved as partners at an early stage in the project cycle.

Secondly, local public administrations have a share of responsibility for project delays due to lack of management skills and organisational failures. Rossert notes that this includes a confusion between budgeting procedures and effective multi-year planning and incentive structures that encourage individuals to avoid taking responsibility. These organisational failures extend to public administration outside lagging areas. For example, there may be little co-ordination between public fund providers who, to complicate matters, also pursue different agendas. Rossert argues that "*it is not, as is sometimes heard, that too much money is going to the regions, but that money is spread too thinly on too many projects.*" This agrees with the fact that increasing returns are present in

6) They also mean that the final distributional outcome of a particular policy is hard to determine. There could also be distributional impacts within the population of a given region. Philippe Martin (in EIB Papers 5(2)) illustrates this by assessing the impact of removing policies that hinder the relocation of business from the periphery to the core (e.g. legal barriers to plant closure).

almost all activities, and suggests that efficient regional policies should have a small and well-defined set of targets (*7*).

The *ex-post* examination of project outcomes shows important differences due to the size of the new investment (relative to the local economy) and the presence that an investor already has in the region through prior investments. The projects that seem to have been most effective in developing regional economies are:

- Large investments that bring a completely new business to a region. Such investors are able to modify the environment in their favour and are typically in a position to make take-it-or-leave-it proposals to local groups.
- Small projects that are fully integrated into the local economy. These are often joint-ventures to upgrade existing companies. They must establish effective local networks to survive, and may have a backbone of relationships to build upon.

Conversely, the project managers of large investments that complement existing facilities in a well-established sector (such as infrastructure) will often be in a weak negotiating position with other groups and project design and implementation gets distorted as a result. Indeed, these companies may already be part of the problem rather than part of the solution. Small projects in new sectors will often try to minimise the group of stakeholders they must deal with by setting up "off-shore" operations. These may be of very marginal benefit to the local economy.

Subsidising only one agent to the point where she decides to proceed may be a very inefficient way of going about things.

There is a third critical dimension to this typology of projects: can policy be effective in changing the location decisions of investors? If regional development is due to a co-ordination failure - a working hypothesis in this paper - then subsidising only one private agent to the point where she decides to proceed may be an extremely expensive and inefficient way to go about things. This subsidy must compensate for all the risks that markets (labour force, suppliers, etc.) do not develop as hoped, and that local institutions may hinder project implementation. These risks may not be great when relatively small firms are the main investors and local companies are involved from inception (e.g. via a joint-venture), but they may be very significant when companies from outside the region are considering a major investment in a completely new sector. A corollary is that private sector investment decisions may only be changed if the public aid provided is significant with respect to the project costs.

Policy can be based upon granting investment subsidies to certain types of projects, but the entire business environment can also be affected by a range of other factors ranging from the standard of infrastructure to the skill level of the local population. In the next section we take a broader approach to try to see what combination of factors build success.

7) The European Commission holds a similar view with respect to geographical eligibility. For example, European Commission (1998, section 1) states: "Past experience shows that, to be effective in regional development terms such assistance should not be spread too thinly over areas which are too large or fragmented. We need to increase the concentration of Community part-financing if we are to reach a critical mass and have a significant impact…"

5. Twin stories

5.1 The case study approach

Taking a broader approach, what combination of factors builds success? What was different in those regions that failed to converge?

Would you expect two twins to run equally fast? Are there subtle differences that are not visible at first glance? What is the role of nutrition and exercise? In any country, there are regions that seemed to have been very similar to start with, but nonetheless have developed at very different rates. Clearly, it is a complex matter to try to identify the reasons why. Modern economic geography suggests that the explanation could well be the nature of the agglomeration processes which lie at the origin of regional imbalances. In order to gain more insight about what this means, we should look at what actually happened in a number of case studies to see if any common features can be identified. Three papers in this volume provide such studies for regions in Greece (by Yannis Ioannides and George Petrakos), Italy (by Rodolfo Helg, Giovanni Peri and Gianfranco Viesti), and Spain (by Andrés Rodríguez-Pose). Each study includes a region that has performed well (in national terms), and another which is lagging behind. The regions were chosen to cover a range of policy experiments, regional autonomy and geography. In the Greek case, both of the regions selected for study were relatively peripheral and had particular sectoral structures, so a third region was included as a benchmark. Note that all the studies deal with the catch-up by regions that were relatively less developed, rather than the problems of restructuring declining industrial regions. What then do our twin stories reveal?

5.2 Building strength

The "winners" in this particular competition are Crete in Greece, Abruzzo in Italy, and Navarre in Spain. At the risk of over-simplification we will try to indicate one or two points that the authors' emphasise in each case study.

Crete – Greece's most southern island – is one of the most successful regions in the country outside the metropolitan areas of Athens and Thessaloniki. A critical factor in the region's take-off was the development of the tourist industry, and this would not have happened without the construction of international airports. The tourism sector was linked into the local economy through networks of suppliers, permitting a relatively broad-based development of the regional economy.

The catalyst for the success of Abruzzo (which is on the Adriatic coast, at about the same latitude as Rome) was largely due to two main policy interventions. Firstly, regional investment incentives were similar throughout the Mezzogiorno. Abruzzo on the northern border of the assisted area benefited from what was essentially preferential treatment given the higher transport costs for locations further down the Italian peninsula. The north-south and east-west motorways allowed for a substantial reduction of transportation costs to main markets (though this did not improve the relative attractiveness of more southern regions). As a result, a number of small locally-owned plants, often sub-contractors for firms in the North, grew up in Abruzzo.

Secondly, investments from state-owned firms in Abruzzo were mainly in relatively human capital intensive industries, such as telecommunications and mechanical engineering. Interestingly this was because the lack of large ports in the region impeded the building of large petrochemical and steel plants – the strategy for much of the rest of the Mezzogiorno. As a result, Abruzzo was able to develop an economic structure based upon large "knowledge-based" factories and networks of small companies. Productivity growth was translated into job creation.

The Spanish region of Navarre lies on the French border. The two prime drivers here were the support of existing firms, particularly smaller enterprises (via favourable tax treatment and subsidies) and the attraction of foreign direct investment. Thanks to its financial and fiscal autonomy, Navarre has been able to grant special tax-breaks to encourage new investments, and this may have allowed better tailoring of the development strategy towards the region's needs.

5.3 Examining the weak

What was different in those regions that failed to converge – Peloponnese in Greece, Sicily in Italy, and Galicia in Spain?

The northern part of the Peloponnese is close to Athens, but much of the peninsula is mountainous with a thinly spread population and poor transportation connections. It is thus not surprising that firms are concentrated at the northern border. In spite of regionally differentiated national investment incentives – which made Peloponnese a favoured region – these measures failed to attract more or larger projects to the region. Policies that had aimed at exploiting local natural resources might have helped the south of the Peloponnese better. For instance, the failure of this region to fully take advantage of its coast line and historical heritage as a tourist resource, is at least in part due to poor or badly implemented policies. In fact, Ioannides and Petrakos conclude firmly that the poor quality of the public administration is the main reason behind the ineffectiveness of regional policies in Greece.

Thessaly, the third Greek region studied, is on the eastern coast of the mainland. Its industrial base was in sectors that have come under severe pressure from international competition. Industrial subsidies appear to have helped in this restructuring; however, the region has not developed the local processing of its agricultural products, and the growth of market services has been limited by the dominance of the Athens metropolis. Its relatively good administration, as reflected in its performance in implementing EU supported programmes, has allowed it to maintain an intermediate performance between the other two regions. In general, this third Greek study is in-line with the conclusions from the more clear cut success and failure.

In Sicily, on the other hand, too much emphasis was put on public expenditure. Helg *et al.*, document how this was used to fuel employment, but how, as a result, wages began to be unresponsive to productivity differentials. This became a major obstacle for the development of both private manufacturing and competitive services. In addition, as in most of the Mezzogiorno, the

investment by state-owned industries was concentrated on large-scale and heavy industries. Such capital-intensive industries failed to generate backward and forward linkages with local companies. Of course, this region had an additional handicap that discouraged an inflow of private investment, namely a relatively higher crime level and the presence of the Mafia.

Galicia is in the extreme north-western corner of Spain. Here too public spending was used to generate employment in public administrations, and there was over-investment in public infrastructure. This was a relatively easy strategy for regional politicians, but has yet to have much impact. The economic fabric in Galicia consists of many small companies employing a lower skilled workforce. These firms have little capacity to network with other firms in and outside the region, and there have been only meagre results from the Galician SME support program. Rodríguez-Pose concludes that an unfocused public administration has been unable to develop effective policies, despite the region's substantial fiscal autonomy.

5.4 Developing a region's comparative advantage

A uniform approach to development would have been ineffective.

As noted earlier in this essay, the impact of regional policy depends very much on the underlying externalities at play, and the case studies illustrate that a uniform approach towards development would have been mostly ineffective.

In two cases strategic infrastructure investment changed economic geography in a favourable way – this occurred with the airports in Crete and the motorways in Abruzzo. However, in many cases road building and the construction of other public works appears to have been used as a way to put people to work rather than anything else. To give an overly simplified example, a dense network of motorways would not have helped Crete to exploit its tourism potential any better. It is perhaps for this reason that Vanhoudt et al., (in *EIB Papers* 5(2)) find no links between public investment and growth from their panel data study. When taken to the extreme, as in Sicily, public spending drives up wages to the point where the development of the private sector is stunted.

Incentives by the regional and national governments to encourage domestic investment and to attract foreign direct investment were also helpful, as the cases of Abruzzo and Navarre clearly show. The sector and industrial organisation of large industrial investments was also key. In successful regions, these investments provided an export base while also increasing the demand for supplies from local sub-contractors. In the case of Crete the tourism sector played this role, illustrating that there are options even for remote locations. However, general investment subsidies set at the national level seemed to have benefited some regions more than others, due to varying local conditions.

As with public spending, investment subsidies may be counterproductive when poorly designed. Especially when firms know that they are entitled to repeated regional support, resources may be shifted to rent-seeking activities such as (political) lobbying, rather than to investing in productivity improvements or in exploring new markets. The incentive for these rent-seeking activities increases

in general with the size of the sunk-cost of the industry. This may partially explain why subsidies did not work very well in those regions with a bias towards capital-intensive heavy industries.

The importance of skills in the workforce also emerges in the Spanish and Italian success stories. This was particularly important in the development of SMEs as subcontractors to larger factories. However, human capital does not appear as a key issue in Crete, perhaps due to the nature of the tourist sector.

The dominant theme is the importance of local and regional public authorities.

The dominant theme in all three countries is the importance of local and regional public authorities. The success of policies implemented in the well-performing regions was to a large extent attributable to a much better oiled administrative machine. This is perhaps not surprising given the local knowledge needed to understand a region's strengths and weaknesses, and to help co-ordinate the development of new activities in a region.

6. Regional development at the EU level

6.1 The logic for EU policy

We have drawn a fairly coherent picture of what regional policy should be trying to do and why policy exists in the first place. But how do EU level transfers fit into the picture we have sketched out? Article 130a of the Amsterdam Treaty states that the *"Community shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions or islands, including rural areas"*, so a clear social cohesion objective exists. The Treaty also explicitly foresees that this will be achieved by financial transfers from the EU budget and through lending by the EIB.

The EU Structural Funds, at just under 1/2 percent of the Union's GDP, are the main source of grant aid for this purpose. The main focus for support is the so-called Objective 1 regions – areas which have incomes per capita of less than 75 percent of the EU average. The EIB lending for projects located in assisted areas was one-half of the Structural Funds last year. EIB loans are not explicitly subsidised, but a number of benefits (tax exemption, highest possible credit rating due to the support of member states, relatively lower return on equity vis-à-vis the private sector, etc.) are passed on to customers. The EIB can also compensate for the lack of development of financial markets in recipient regions, though the scope for this will be reduced in the post-EMU environment.

Also at the EU level we must consider the issues developed in Section 3. Why is EU intervention needed to deal with regional income gaps when there are much larger income differentials in the population of a particular country? This is even more an issue at the EU level, since social insurance is dealt with by national government - and there are not automatic fiscal transfers between countries due to unemployment differentials. At first sight, it is not clear why a group located, say, in a northern European capital city should wish to support another, completely unrelated community on a Mediterranean island. Indeed, one can think of much closer regions where there is no love lost between communities.

Why is EU intervention needed to deal with regional income gaps when there are much larger income differentials in the population of a given country?

It is also the case that the NUTS-2 regions used to assess eligibility for aid, based as they are upon administrative regions in each country, are far from being well-defined and comparable geographical units (8). What does it mean to say that the residents of Luxembourg (population, 0.4 million) are 3 times richer than those of Andalucia (population, 7.2 million), 2 1/2 times richer than Sicilians (population, 5.1 million), and more than 2 times richer than the residents of Attiki (population, 3.4 million)? The data for income inequality is further distorted by the fact that some regions are based upon the centres of major cities, and there is substantial cross-border commuting. While output is measured at workplaces, population is based upon residence. For example, Brussels has a population of close to one million, but the broader metropolitan area which can be considered as a self-contained labour market comprises over 3 million people (9).

Thisse (in *EIB Papers* 5(2)) develops another example: Ile-de-France (a NUTS-2 region) is formed by several *départements* of very varied income levels (such as Seine-Saint-Denis, a poor region, and Hauts-de-Seine, a much wealthier one), but each of which is individually comparable to NUTS-2 regions in some other countries (e.g. Belgium). Table 2 shows the ratio of incomes between the richest and poorest NUTS-3 region (equivalent to French *départements*) found within a given NUTS-2 level (in purchasing power adjusted per capita terms) (10). The dispersion alluded to before between NUTS-2 regions within a country is also shown. The problem of borders becomes more important at lower administrative levels, but the data does hint at a substantial variation of incomes within regions. These definitional problems are critical if policy is motivated by equity considerations.

Clearly, the issue of why EU intervention should be needed to deal with spatial inequalities could be avoided if transfers improve the welfare for everyone – much as we have suggested in the discussion of the local level above. Indeed, this is explicit in much of the language used to justify EU spending. For example, the European Commission (1996, p. 13) in its "First Report on Economic and Social Cohesion" states (11):

"Imbalances do not just imply a poorer quality of life for the most disadvantaged regions…but indicate an under-utilisation of human potential and a failure to take advantage of economic opportunities which would benefit the Union as a whole." [emphasis added]

Although there may be common benefits from completing communication networks or for improving the environment – these are straightforward cases – how could regional development *per se* be beneficial? In general we should start by discounting a Keynesian view that increased aggregate

8) NUTS stands for the Nomenclature des Unités Territoriales Statistiques, *the classification used in Eurostat's REGIO database. There are few exceptions to this classification for defining Objective 1 status for regions that qualified under a previous regime. In the following example, we use 1996 data and incomes are measured in purchasing power parity terms.*
9) Cheshire and Hay (1989) develop these issues further. The definition of an economic "region" is also discussed in Vanhove (1999).
10) Of course, this requires that the NUTS-2 level consists of at least two NUTS-3 regions. This is not always the case (e.g. among others: Stockholm, Brabant Wallon, Hamburg, Navarra, Algarve).
11) The Maastricht Treaty (Article 130b) initiated a regular reporting by the Commission on the progress made towards achieving economic and social cohesion. This is the first such report.

demand in the EU will benefit all members, not least because regional aid is not granted in a counter cyclical manner. Moreover, richer areas are often at full capacity, while resources in lagging regions remain under-utilised.

Table 2. Dispersion within NUTS-2 regions, 1996

Country	Maximum NUTS-3 spread	*...found in the NUTS-2 region of*	Minimum NUTS-3 spread	*...found in the NUTS-2 region of*	Ratio of maximum to minimum NUTS-2 region in the country
Germany	5.23	*Rheinhessen-Pfalz*	1.25	*Gießen*	3.11
UK	3.62	*Inner London*	1.08	*Cumbria*	3.16
France	3.53	*Ile de France*	1.04	*Alsace*	1.35
Portugal	2.89	*Norte*	1.91	*Alentejo*	1.46
Greece	2.76	*Dytiki Ellada*	1.11	*Sterea Ellada*	1.72
Netherlands	2.57	*Groningen*	1.11	*Gelderland*	1.79
Austria	2.24	*Oberösterreich*	1.16	*Vorarlberg*	2.33
Belgium	2.14	*Antwerpen*	1.20	*Vlaams Brabant*	1.70
Spain	1.58	*Castilla-la Mancha*	1.07	*Canarias*	1.82
Finland	1.44	*Uusimaa (suuralue)*	1.04	*Pohjois-Suomi*	1.75
Sweden	1.17	*Östra Mellansverige*	1.01	*Sydsverige*	1.33

Note: The spread is computed as the ratio of maximum to minimum PPP adjusted per capita income.
Source: Eurostat, REGIO database.

The mutually desirability of European transfers should be seen in the context of side-payments between governments to reach agreement on other matters.

The mutual desirability of European transfers should rather be seen in the context of side-payments between governments to reach agreement on other matters. This could be the case if there are economies of scale in some joint activity or if individual countries possess a veto on decisions (e.g. Treaties require unanimous decisions to be changed). Such payments can then still be in the net donor's interest even if there is not a great belief in pan-European income equality. Let us take an example. The creation of an integrated market may entail initial costs for some participating countries if their economies are less able to face the resulting competition. This would justify these governments running persistent deficits for a period of time. Unfortunately, such a policy response could be constrained by the parallel launch of a monetary union that requires balanced budgets if not surpluses to lower government indebtedness. The only practical solution to this dilemma may be for there to be transfers to the affected group (12).

12) Assessing the impact of the Single Market is a complex matter since adverse static shocks could be more than compensated by dynamic gains, due for example, to increased foreign direct investment (see European Commission, 1997, for some quantitative estimates). The European Commission (1990, chapter 9) gives a further discussion of the impacts of monetary union on the weaker EU economies.

To become more concrete, the Cohesion Funds, a supplement to the Structural Funds, were established by the Maastricht Treaty (Article 130d) for countries with:

- per capita GDP less than 90 percent of the community average (i.e. Greece, Ireland, Spain and Portugal);
- an agreed programme to "avoid excessive government deficits" (i.e. in accordance with Article 104c of the Treaty); and,
- to be used for environment and Trans-European transport networks.

The link between the creation of this new fund and the launch of EMU is clear, though the restriction regarding the types of eligible projects suggest that the donors were trying to ensure some further common interest.

If transfers play a broader political role, then why should a regional development label be attached to them? At the national level we have referred to the logic that regional development could be motivated by the on-going need to reduce social payments to lagging regions. By analogy, it could also be that having countries of dissimilar levels of development (or having some countries facing a steady fiscal drain due the presence of large lagging regions within their territory) decreases the likelihood of reaching a consensus on EU policies, which, in turn, raises the probability of having to make further side-payments in the future. Consequently, it would be in the interest of richer regions to use payments to boost growth in the poorer region, for this seems by and far the best pill to take against the hazards of institutional sclerosis.

Of course, the reasons for establishing EU regional development assistance are irrelevant for the agencies that are mandated to undertake this task. For them the issue is how to achieve this goal in the most effective way. What could this mean for tying conditions to the use of funds? If we look at this in general terms – rather than the technical details of any particular programme – some possible principles emerge.

6.2 Conditionality on the use of EU aid

The technical competence of local authorities may not be of the highest quality - hence the need for outside approval of investment plans.

While managers of EU aid may consider imposing conditionality on the use of funds to achieve economic development – approval of investment programmes and the like – this merits two comments. Firstly, they would not be necessary if there was full confidence in the recipient government's ability to use its funds. It presupposes that the manager of aid allocations knows better than the recipient how money should be spent. In this context, subsidiarity would suggest that relatively stream-lined conditionality should be used when dealing with EU governments. Secondly, money is fungible and, in so far as certain investments would have taken place anyway, transfers nominally intended for one purpose may simply free resources for other activities. The restriction that certain criteria should be met may not pose much of a binding constraint.

What happens when payments are made directly to local administrations, public companies, or to the private sector, rather than the coffers of the central government?

Consider local administrations first. A lesson that has emerged for the case studies of Section 5 is that local governments should be involved if policy is to be sufficiently fine-tuned. Unfortunately, the technical competence of local officials may not be of the highest quality. Indeed, a common theme in the case studies (including the *ex-post* project evaluations) is the correlation between poor regional growth and poor administration. Local politicians are more likely to be influenced by interest groups, and often the transparency of local decisions is less than at the national level. All this argues for the outside approval of investment plans.

The situation is much more complicated when aid is given to the private sector. A key issue is whether aid actually changes location decisions, or is a windfall used for other purposes.

An alternative approach is to address the problem (at least partially) at its roots through the training of public officials. This could come by requiring that a minimum percentage of the total aid package is used for this purpose, or by offering free technical assistance. Of course, advice can always be ignored, and the analysis of external consultants would have to be made available to the public if there is to be transparency over the reasons why particular choices were made.

Saint Luke's advice: *"Physician heal thyself"* should be immediately recalled at this point. As Rossert reminds us, it is often impossible to work out, *ex-post*, the level of public support that a project has received from national and European bodies. While such historical analysis does not necessarily reflect the situation today, it would be surprising if there were not scope for further improvement.

Dealing with state-owned companies (such as railways and toll road networks, etc.) may be very similar to local authorities, since staff skills in project design and implementation can be lacking. On the other hand, these companies may have a narrowly defined mission which is in-line with policy goals. This would mean that individual investments do not require detailed assessment once there is general confidence in management skills, particularly when there is a long-term relationship and funding is being provided on an regular on-going basis.

The situation is much more complicated when aid is given to the private sector. While EU competition law prohibits in principle all state aids that threaten to distort competition, it may be permitted for *"aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious unemployment"* (Article 92(3)(a) of the Maastricht Treaty) (13). As mentioned before, some large projects are successful because investors have sufficient negotiating power to overcome local lobbying and to drive a project forward. It is exactly this strength which generates the risk of regulatory arbitrage and a race to the bottom between public authorities trying to attract investment to their territory, and which justifies the surveillance of EU competition authorities (14).

13) From 1994 to 1999, 50.6 percent of the population of the EU-15 lived in areas eligible for such aid (European Commission, 1998), while from 1994 to 1998 some 57 percent of manufacturing aid was spent for regional objectives (European Commission, 2000).

14) There is not a uniform view on the degree of this problem. See, for example, Besley and Seabright (1999).

Furthermore, there is the problem that project promoters act in their own self-interest, and what is profitable is not necessarily helpful for regional development. This calls for a careful assessment of whether a project will actually lead to productivity growth in a lagging region or not. Here also there would appear to be a role for a specialised assessment by neutral outsiders.

The problem of dead-weight losses is also particularly acute with the private sector – in other words does policy actually effect location decisions? If a local authority wins a grant for something that was already decided (though the decision is not necessarily known publicly), the additional grant will be used by the local authority for other purposes. It is reasonable to suppose that this money will still be used to benefit the target community in some way. Though there are trade-offs due to technical capabilities, the difficulty of knowing whether any investment is truly additional can be a powerful reason for dealing directly with local communities rather than simply passing funds to the central government. The options for using funds for other purposes (including tax cuts) are simply more limited. Much the same logic applies to some public companies (15).

Now take the case of a large private sector company which would invest in a particular region even without public support. If the company then receives aid this becomes a windfall gain that can be used for any number of purposes. This could include financing investments in completely different areas or simply increased dividends. Here, the net contribution to regional development of the funding may be very small.

Given the critical role of the private sector in regional development that emerges from the case studies, this issue must be addressed. What can be done to ensure that the real economy is changed in some positive way by public aid? It is clear that this cannot happen with the *ex-post* financing of activities that have already been undertaken. It is even unlikely to happen with investments that are already underway, unless the project happens to be running into financial difficulties. In the extreme, it would require that the decision of a private investor to go ahead is taken simultaneously with the decision to provide aid, and that the availability of finance could be documented as a factor in the location decision.

7. The enlargement of the Union

The enlargement of the Union will much increase the dispersion of EU regional incomes.

The enlargement of the Union eastwards will much increase the dispersion of EU regional incomes. The average income per capita for the entire ten candidate countries from Eastern Europe is only 15 percent of the EU average at market exchange rates, increasing to about 30 percent when adjusted for purchasing power parity. The situation improves when the more developed northern countries are considered separately (incomes are about 20 percent of the EU average at market exchanges rates, and 40 percent at PPP), but the gap remains very large. There are also substantial regional inequalities within most Eastern European countries, with relatively higher prosperity in

15) Though to be exact one should say that the aid is being used to support agencies or companies with a mission for regional development, rather than for regional development projects.

urban centres and some EU border regions where the service sector has developed strongly. In some other regions there have been severe job losses due to the restructuring of traditional industries.

From the point of view of the EU, the entire region would be eligible for support under the usual Objective 1 definition. Not only that, but even under optimistic growth scenarios it will take decades for most of the region to converge to the EU average. With a clear path set out for membership these income differentials are an issue to be dealt with today as much as when formal membership actually takes place.

In a departure from previous practice, the EU has introduced the rule that no country may receive EU Structural Funds above 4 percent of its GDP. The total budget for the Structural Funds for the 2000-2006 period will not be increased despite the additional regional problem of enlargement – it will remain at the present size of 0.46 percent of EU GDP. While there are reasons for limiting the flow of funds into an economy – and more on this below – the recent EU budget negotiations do illustrate that regional development spending must be seen within a broader context. In this particular case, it is likely that the general view was that candidate countries stand to benefit substantially from EU enlargement anyway (16).

What should be done to accelerate the catch-up of the region to the EU? The paper by Margarethe Quehenberger (this volume) looks at experience in Eastern Germany. The reunification of Germany is certainly a special case, but as an almost textbook example of a "big bang" programme, it amplifies some of the key features of government intervention.

Market failures may not be due to geography, but because the transition to a fully efficient market economy has yet to be completed.

In brief, rapid wage growth in Eastern Germany has led to a major down-sizing of the manufacturing sector. A motivation for the high wage strategy, at least after the event, was the fear that there would be excessive emigration from the region. In fact, Sinn (2000) argues that the reason for the rapid growth in wages was due to employer-union negotiations that took place in 1991. At that time there were neither Eastern Germany private entrepreneurs nor strong Eastern unions. According to Sinn, wage negotiations were dominated by Western Germans (both employers associations and unions) whose over-riding concern was to avoid job losses is Western Germany. Rapid wage growth was agreed, as an extreme example of national factors influencing local wage setting in an undesirable way.

Capital subsidies have helped those industries which have remained in business to modernise their plant and equipment, and the construction industry has boomed. However, there remains large-scale unemployment, and this is likely to be exacerbated as investment subsidies are reduced and the construction sector shrinks to a more normal level. The social security system imported from the

16) In fact most of the gains from trade liberalisation with the EU have already been achieved via current Europe Agreements. In total, it has been estimated that further benefits from lower and harmonised tariffs may only be of the order of $1^1/_2$ percent of GDPin the candidate countries (see Baldwin et al., 1997). However, much larger benefits - possible an order of magnitude larger - would arise if increased credibility in macroeconomic stability caused interest rates to drop substantially.

West means there is a considerable risk that this will evolve into a long-term unemployment problem, especially since future growth will hinge on the development of more sophisticated market services and appropriate skills will become increasingly important. Germany does appear to have created the conditions where regional development will remain on the political landscape for years to come.

A first observation for Eastern Europe is that maintaining some wage flexibility will be critical. Given that there is a continuing need for the re-allocation of the workforce between sectors, the risk of workers getting stuck in persistent unemployment is very real. Too large capital subsides also clearly distort investment decision towards excessively capital-intensive activities - but this may do little for the unemployed.

Given the general context, assistance should focus on improving the allocative efficiency of the Eastern economies. There should be a particular role for the EIB due to the relatively underdeveloped markets for long-term debt in Eastern Europe. This market failure is not due to geography *per se*, but rather because the transition of the region to a fully efficient market economy has yet to be completed.

8. Conclusions

We should accept that some regional inequality is the normal state of affairs. Indeed, interregional growth may come at the cost of greater intraregional polarisation.

Looking forward, a number of studies foresee growing regional specialisation in Europe along the lines already seen in the US (e.g. *Commisariat général du Plan*, 1999, and Bruanerhjelm *et al*., 2000); this because the economic forces at play within the two zones will become more and more similar. Such a trend may not reinforce regional inequality if everyone finds something to specialise in. However, given that the scope for innovation varies according to sector, it is possible that there could be the polarisation of Europe into more advanced regions and poorer lagging regions in the long-run. There may also be increased mobility for the highly-skilled, but a continued lack of mobility for the lower-skilled workforce. Together with inflexible labour markets this situation could reinforce a very unequal distribution of unemployment. It is far from clear that the Single Market and EMU will actually help equalise Europe's regional income distribution.

Concentration of activity is at least partially due to spatial market failures. The most clear cut case is when there are incomplete markets and a co-ordination failure in creating new economic activities. Within a country there then is a logic for prosperous regions to help cure regional pockets of unemployment, at least until regional fiscal autonomy removes the burden of making social payments to their disadvantaged countrymen. Coming up with a motivation for EU intervention is less straightforward. The benefits of supranational support, i.e. inter-governmental transfers, should rather be seen a part of an overall consensus building exercise within a group of sovereign nations.

A general conclusion is that we should accept that some regional inequality is the normal state of affairs, much as society tolerates this within any given community. Indeed, the existence of an urban hierarchy is an almost universal phenomenon. If, as it seems, the existence of a major urban centre

or of a network of connected medium-sized cities is a major factor for growth, then not all regions can perform equally if only because historical accident has led to unequal urbanisation. This also means growth may bring with it local agglomeration – and *inter*regional convergence may come at the cost of greater *intra*regional polarisation.

The regional development studies, both at a project and regional level, highlight the following features:

- Key strategic infrastructure is essential. There appear to be cases when better communications, for example, can help shift economic geography to a new equilibrium. However, this certainly does not apply in a general way to public investment. A more critical attitude about launching new transport infrastructure would be welcome.
- Industry structure is probably as important. Large factories coming to the region must have an industrial organisation and use technologies that encourage the use of local sub-contractors and forward linkages to other local companies. The chances for this are increased if the local population, particularly those employed by SMEs, have a matching set of skills.
- Tourism can also play a similar role to large factories as the export base for a region. Indeed, having an unspoilt countryside, traditional town centres, and historical monuments is an asset rather than a liability.
- Not all projects can be equally effective in generating regional economic activity. It depends, amongst other factors, upon the range of stakeholders involved, and how negotiations with these stakeholders are managed. This seems to be affected by the size of a project vis-à-vis the local economy, and the sunk costs already incurred by a project promoter in the region.
- The quality of regional government is critical if development programmes are to be sufficiently fine-tuned to local conditions. Since the information needed to design good policy is very high, we can expect many mistakes. However, the mistakes seem to occur with disproportionate frequency for some authorities.

There are a rich range of factors to consider beyond the two standard indicators of the economic rate of return and the physical location of an investment.

How do we convert these factors into a set of criteria for project selection? Clearly, many aspects will call for qualitative judgements, but that does not mean that a relatively objective view cannot be taken. The list of issues to be considered includes:

- The forecasting associated with regional development projects is complex due to the significant change to the local economic environment that is implied. Still, good forecasting should be able to capture the co-ordination problems we have referred to and projects should be economically attractive when these forecasts are used as the baseline. It would be unwise to try to manipulate cost-benefit analysis in an *ad hoc* way in an attempt to capture other externalities (such as technical spillovers). Rather these should be addressed through the broad development strategy chosen.

- This leads to a critical issue: does the project fit into a coherent strategy to develop a region's comparative advantage? For example, large-scale public investment should be clearly justified within such a framework.
- Does this broad strategy include the development of human capital? In particular, does the local administration have a track record of poor performance? If so, what steps are planned to address this problem? There may be little point in pouring money over an area in which local government is unable to become more efficient.
- Is project implementation well thought out given its particular characteristics? As delays are endemic in some lagging regions, project appraisal should assess that the complete range of stakeholders, and the associated threats to the project, have been identified. This may require relatively early participation in the project cycle. Public support for some types of project could be contingent on external project audits when they become excessively delayed.
- Does the project stimulate demand for other local companies? Are associated policy measures needed to support the development of these companies?
- In fact, more generally, can the project be considered as a stand-alone activity, or would it be better to support a package of mutually reinforcing investments? This is particularly an issue when new businesses are introduced to an area.
- Does public support actually change location decisions? Is there the likelihood that the project would go ahead anyway? In this case the windfall from public support could be used for other purposes. For example, the refinancing of investments that are underway will support the beneficiary, but will not lead to regional development unless the beneficiary has a dedicated mission with that aim. This is a particularly acute issue with the private sector, since private companies naturally pursues their own profit-maximising goals.

EU institutions should assist with the exchange of best practices on these issues.

This list, which is not exhaustive, shows the rich range of factors to be considered beyond the two standard indicators of the economic rate of return and the physical location of an investment within a particular administrative territory. As in other aspects of economic life, one role for EU institutions is to assist with the exchange of best practices on these issues.

The dominant factor in regional development is the quality of local institutions. More attention should be given to this issue. Even with the best will in the world, outsiders cannot generate high regional growth. This being said, *bad policy at the local level can be reinforced by bad policy at the national and supra-national levels*. Excessive public spending seems to be particularly pernicious. In this volume of the EIB Papers the reader will come across examples where the policies that were adopted were in the end worse than having no policy at all - to quote Francis Bacon: "*The remedy was worse than the disease*". The minimum goal of institutions involved in regional development must at least be to ensure that they avoid that state of affairs.

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YUGOSLAVIA
BULGARIA
BLACK SEA
MACEDONIA
Drama
Xanthi
KOMOTINI
Serrai
Kavala
Alexandroupolis
SEA OF MARMARA
Thasos
Samothraki
Véroia
THESSALONIKI
ALBANIA
KOZANI
Katerini
Thermaikos Kolpos
Gökceada (T)
TURKEY
Limnos
Kerkira
CORFU
IOANNINA
Trikala
LARISA
AEGEAN SEA
THESSALY
Volos
Lesvos
MITILINI
Levkas
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Skiros
IONIAN SEA
Agrinion
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Kefallinia
PATRAI
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Ikaria
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Zakinthos
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ERMOUPOLIS
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Regional disparities in Greece: The performance of Crete, Peloponnese and Thessaly

Yannis Ioannides

George Petrakos

1. Introduction

Unequal spatial distribution of economic activity within countries continues to be important despite the significant progress of the world economy during the second half of this century. Interest in spatial processes and inequalities has recently been revived by the influential work of Barro and Sala-i-Martin (1991, 1992, 1995) and others on the trends of convergence or divergence across countries or regions, by the theoretical work of Krugman (1991) on geography and increasing returns, and by the work of Matsuyama (1995a,b) on cumulative processes in models of monopolistic competition. The recent literature is concerned with balanced development and has important implications for regional or development policies. Noteworthy in this context is the argument advanced by Kaldor (1970), namely that unequal regional development within a given country poses more serious intellectual challenges for policy than unequal development internationally. Several studies suggest that the existence of selective tendencies, convergence clubs as in Quah (1996), and asymmetric shocks in various economies have led to the persistence and exacerbation of spatial inequalities within the European Union.

A parallel literature was developed that examines in more detail the consequences of European economic integration – i.e. the Single European Act and the Treaty of Maastricht – on regional inequality. The majority of these studies predicted that the process of European integration would worsen existing regional inequalities. The reasons most frequently cited are location decisions of firms, geographic features and proximity of the various regions to major European markets, persistent differences in the structures of European economies, and existing differences in levels of technological and human capital development (EC, 1991, 1993, Amin *et al*., 1992, and Camagni, 1993).

A recent report (EC, 1999a) suggests that inequalities across member states of the EU declined in the 1988-96 period, but that intra-national inequalities have intensified, as the gaps between the most developed centres and the less developed regions with respect to per capita income growth rates and levels of income per capita have widened. Thus, it is feared that European economic integration may have been associated with a reversal of the process of regional convergence found by several studies in the 1970s and the 1980s.

The present study sets out to contribute to the debate on the causes and underlying factors of regional inequality by providing evidence from Greece. Section 2 provides a background discussion of Greek national performance and notes the particular role of the Athens metropolis. Section 3 presents trends in key regional indicators and reviews the literature on convergence within Greece. Section 4 gives a comparative analysis of the three regions of Crete, Peloponnese and Thessaly. Section 5 reviews the institutions for regional policy in Greece again with particular reference to the three case study regions. Section 6 presents the conclusions and policy implications of our study.

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2. Spatial economic structure and change in Greece

In discussing regional problems in Greece we are looking at cases of a "double periphery", of lagging regions within an economy that itself lags.

Greece's underdevelopment relative to the EU average qualifies it as an Objective 1 Region (O1R). These have per capita income levels of less than 75% of the EU average. As a result, in discussing regional problems in Greece we are looking at cases of a "double periphery", of lagging regions within an economy that itself lags behind the EU average.

2.1 Greece in the EU

Lyberaki (1993) and Petrakos and Pitelis (2000) have shown that Greece was converging towards the EU until the mid-1970s. It started diverging in the 1980s, and remained so until the mid-1990s. During the 1980s, the average annual GDP growth rate was 1.5% in Greece compared with 2.4% in the EU. In that same period, Greece was the only EU country in which most development indicators are not simply worse than the EU average, but also worse than any other single member. As a result, GDP per capita in Greece as compared to EU declined. Relative GDP per capita (EU=100), measured in ECU, increased in the 1960s, reaching its highest value in 1970 and decreased thereafter, with signs of stability in the mid-1990s and a trend reversal apparent in the late 1990s. In 1995, however, Greek GDP per capita in ECU was equal to 45% of the EU average, a figure considerably lower than that of 1981 (53%), 1971 (58%) or even 1961 (49%).

Greece's poor performance is attributed to several factors. First, the Greek economy is characterised by a sectoral composition reminiscent of LDCs, that is, a high share of agriculture and a low share of industry in GDP. Greece stands out in this regard among all the other Southern EU member states. Manufacturing is also concentrated in such traditional labour-intensive and light-industry sectors such as food, textiles and clothing. These, however, are also sectors that seem to be shifting internationally towards LDCs, because of the significant labour cost advantages to be found there. This has put Greece under double pressure. On the one hand, it is at a disadvantage in markets for modern manufactures compared to other highly industrialised EU countries, and on the other hand it is also at a disadvantage compared to low-wage countries in traditional markets for labour-intensive products. This double pressure, which emanates from increasing international competition, might have been an important factor in the decline of industrial activity in Greece and its concentration in inward-looking sectors.

Several papers have also blamed the performance of Greece on public policy choices. Alogoskoufis (1993) attributes Greece's sluggish performance to expansion of the public sector in the 1980s, arguing that accumulated deficits crowded out private investment. Lyberaki (1996) considers that the adoption of labour market regulation schemes such as wage indexation, collective bargaining and labour protection laws, especially in the 1980s, was responsible for increasing unit labour cost and for reducing flexibility at the firm level, during a time when the rest of Europe was deregulating. Finally, the anti-multinational corporation slogans and anti-EU rhetoric of the early 1980s may have also played a role, by discouraging foreign direct investment (FDI) in a period where domestic capital formation was declining.

Petrakos and Christodoulakis (1997) follow a different line of thought: They emphasise the impact of geography. They argue that Greece has had to cope with a uniquely unfavourable situation not

found elsewhere in Europe. That is, Greece's location in South-eastern Europe placed it far away from major markets and major European market centres, but a lack of common borders made it physically isolated from other Western European countries. Furthermore, as a result of the cold war, the country's borders were real barriers to communication and trade with neighbouring countries. These conditions distorted economic relations, with serious long-term implications for the economic structure and performance of the country. Isolation and distance from the European core and other Western European countries implied, in general, limited access for its domestic products to large foreign markets. The absence of economic interaction with its neighbours also generated serious disadvantages. Indeed, recent theoretical and empirical research has drawn attention to the importance of geographical factors, such as adjacency and proximity, for trade and development (Krugman, 1991, and Krugman and Venables, 1995). The "missing neighbours factor" in the trade relations of Greece played a key role limiting the country's export markets and thus its potential for export-led growth (Petrakos, 1997).

Distance from the more economically advanced countries of Western Europe may also explain why Greece's trade took on an inter-industry character during a period of extraordinary expansion of intra-industry trade (Petrakos, 1997). Theory suggests that countries trade more with their neighbours and that such trade usually takes an intra-industry character. The lack of trade relations with the other Balkan countries pushed Greece further towards specialising in inter-industry trade with the technologically more advanced western European countries. However, such trade worked rather unfavourably for the industrial development of the country. Greek manufacturing remains dominated by very small production units (Petrakos and Zikos, 1996), with over 93% of industrial firms with less than 10 employees. The average size is 5 employees per firm, by far the lowest in Europe. These small enterprises, often with traditional organisation, are clearly at a disadvantage in exploiting economies of scale.

2.2 Greek urban structure

An important feature of Greece is the dominance of the metropolis.

An important feature of Greece is the dominance of the metropolis. The region of Athens has doubled in size in three decades and now comprises nearly 40% of the national population (which is close to 11 million people). Thessaloniki comes second with about 800 000 inhabitants, while Patras, the third largest city of the country, has about 250 000 inhabitants. There are another three or four cities with about 150 000 inhabitants each, followed by several smaller cities typically serving as regional administration centres, with populations ranging from 20 000 to 80 000 inhabitants. Arguably, Greece is characterised by the most concentrated urban structure in Europe.

What factors have contributed to this highly skewed urban structure? Certainly, some of them are related to historically given 'initial conditions.' The gradual expansion of the Greek State from 1821 to 1945 through a series of independence wars has established Athens as the undisputed administrative centre. The influx of refugees from the 1922 war with Turkey helped solidify the pre-eminence of Athens in terms of population, economic activity, culture and entrepreneurship. However, other factors have also played significant roles.

For example, Petrakos and Tsoukalas (1999) found that the rising tertiary sector of the economy exhibited a strong preference for location in the metropolis, while the lack of industrial development did not provide pressures for deconcentration (to cheaper land and less congested areas). Petrakos *et al.*, (2000) also examine the apparent acceleration in the development of smaller cities in Greece during the last decade. It would have been a welcome development if faster growing smaller cities were evenly distributed in space. Their analysis shows, however, that they are largely satellites of the metropolitan centres of Athens and Thessaloniki. Thus, the Athens metropolis seems to have maintained or even increased its dominance on the rest of the economy.

In contrast to the international experience of industrial specialisation of small and medium size cities (Henderson, 1986, 1988), Greek cities exhibit limited industrial specialisation and have similar shares of employment in manufacturing regardless of their size (Petrakos and Economou, 1999). This is less of a paradox when we recognise that Greek manufacturing is mainly oriented towards local demand.

3. Regional inequalities in Greece

3.1 Recent trends

We start with the most recent data for the 13 NUTS II Greek regions. Table 1 shows regional GDP per capita in purchasing power parity terms for each Greek region as a share of the EU-15 average. The average figure for Objective 1 Regions (O1Rs) are also shown. Throughout the 1988-1996 period, only two or three Greek regions have figures above the O1R average or even the Greek national average (which is highly skewed due to the presence of Attiki, the Athens region, which is the largest and most developed region in the country). Moreover, some regions - such as Peloponnese - have failed to improve their relative position with respect to the EU-15 even in purchasing power terms.

Some regions such as Peloponnese have failed to improve their relative position with respect to the EU-15 even in terms of purchasing power parity.

Table 2 shows regional unemployment data for Greece. Several observations are in order. First, the unemployment rate in Greece has been lower than that of the EU-15 average, but moved closer to it during the last few years. Second, all Greek regional figures are well below the O1R average unemployment rate. Third, the best performing regions have been the island regions of Crete, the Southern Aegean and the Ionian Islands. What those regions have in common is tourism as the main activity of the local economy. The picture for the worst performing regions is mixed. It includes Attiki, Continental Greece (a region adjacent to Attiki that has suffered from industrial decline), Ipeiros (a relatively backward, remote and economically stagnant region), and West Macedonia (a border region that suffered heavily from industrial decline). Fourth, the regional dispersion of unemployment, as measured by the coefficient of variation, shows a downward trend.

However, there are several factors that must be taken into consideration in interpreting Greece's unemployment performance. To remind the reader of only a few, Greece has a low, by EU standards, labour force participation ratio, a high share of population that is still employed in agriculture, and a dualistic industrial sector that offers opportunities for sporadic, irregular or part-time employment.

Table 1. Regional GDP per capita (in PPS), EU15=100

	1988	1989	1990	1991	1992	1993	1994	1995	1996
East Macedonia, Thrace	52	53	52	53	55	57	59	60	61
Central Macedonia	58	58	57	58	61	64	65	66	67
West Macedonia	63	63	61	61	59	60	60	61	62
Thessaly	54	57	54	56	56	58	60	61	63
Ipeiros	43	42	39	40	41	43	43	43	44
Ionian Islands	55	54	52	53	55	59	60	61	62
West Greece	48	50	48	50	51	55	56	57	58
Continental Greece	72	72	68	68	64	66	65	65	65
Peloponnese	58	57	55	56	56	57	58	58	58
Attiki	61	62	61	62	66	72	73	75	77
North Aegean	44	41	41	43	45	48	49	50	52
South Aegean	68	67	65	66	68	73	74	75	75
Crete	57	64	61	62	64	68	71	72	72
Greece	**58**	**59**	**57**	**58**	**60**	**64**	**65**	**66**	**68**
Objective 1 Regions	63	64	64	65	65	68	69	69	69
EU-15	100	100	100	100	100	100	100	100	100

Source: European Commission, 1999a

Table 2. Unemployment rates, percentage

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
East Macedonia, Thrace	9.0	6.7	5.1	4.8	6.9	6.6	7.4	9.2	9.6	8.3
Central Macedonia	6.8	6.6	5.7	5.5	6.4	7.9	8.2	9.1	8.9	9.2
West Macedonia	6.0	5.7	9.0	7.2	7.4	9.8	9.1	13.2	16.3	13.8
Thessaly	6.9	6.5	7.0	6.2	7.3	7.2	6.9	7.6	7.6	7.5
Ipeiros	5.0	4.0	2.8	8.8	7.4	7.6	8.0	7.2	11.2	10.5
Ionian Islands	3.4	2.8	3.1	3.5	2.5	3.8	3.4	5.3	5.5	6.2
West Greece	7.2	7.2	6.9	7.8	8.6	9.4	10.5	8.2	8.6	7.9
Continental Greece	6.9	5.9	5.8	6.3	10.8	9.5	10.6	9.2	10.3	12.0
Peloponnese	5.8	4.8	5.2	5.0	7.3	5.8	6.3	6.0	6.4	7.5
Attiki	10.0	8.5	7.9	8.9	9.7	11.1	11.1	11.0	11.9	11.6
North Aegean	5.4	5.9	4.2	7.9	4.8	4.3	7.0	4.9	7.1	7.1
South Aegean	5.2	4.4	4.3	3.2	3.5	4.5	3.5	4.8	4.9	4.3
Crete	3.5	2.4	2.2	3.6	3.3	3.5	3.8	4.1	3.4	4.3
Greece	**7.7**	**6.7**	**6.3**	**6.9**	**7.8**	**8.6**	**8.8**	**9.1**	**9.7**	**9.6**
Objective 1 Regions	15.6	14.5	13.5	13.3	13.9	16.3	17.6	17.5	17.7	17.2
EU-15	9.0	8.3	7.7	8.2	9.2	10.7	11.2	10.7	10.8	10.7

Source: European Commission, 1999a

Greece has a national agricultural employment share which is twice that of other Objective 1 regions and four times that of the EU-15 average.

Table 3 allows us to compare basic structural characteristics across Greek regions. It presents the shares of primary, secondary and tertiary employment for each region. Greece has a national agricultural employment share which is twice that of the O1Rs and four times that of the EU-15 average. With the

exception of Attiki, and the South Aegean islands (including the island of Rhodos), all other regions have shares of primary sector employment ranging from 25% to 45%. The regions with the highest shares in the secondary sector are West Macedonia (a region with a heavy concentration of energy production), Central Macedonia (including Thessaloniki, the second largest Greek urban agglomeration), Continental Greece (a region in the immediate proximity of Attiki) and Attiki. The two large metropolitan regions and the islands (which specialise in tourism) have the highest shares in the tertiary sector.

Table 3. Sectoral distribution of employment, 1997, percentage

	Agriculture	Industry	Services
East Macedonia, Thrace	40.0	17.8	42.2
Central Macedonia	19.6	25.6	54.9
West Macedonia	23.3	33.0	43.7
Thessaly	38.7	17.5	43.8
Ipeiros	30.6	20.4	50.0
Ionian Islands	26.7	16.0	57.3
West Greece	41.6	17.6	40.8
Continental Greece	31.7	27.3	41.0
Peloponnese	43.5	16.9	39.6
Attiki	1.0	25.3	73.8
North Aegean	23.6	20.0	56.4
South Aegean	10.2	20.4	69.4
Crete	37.9	12.3	49.8
Greece	**19.9**	**22.5**	**57.7**
EU-15	5.0	29.5	65.6
Object 1	10.8	27.5	61.7

Source: European Commission, 1999a

3.2 Studies of regional convergence or divergence

What does the economic literature tell us about Greek regional convergence trends over the longer term? Petrakos and Saratsis (2000) and Michelis *et al.*, (1996) have examined the convergence of regional inequalities at the NUTS III level and have found that inequalities were reduced in the 1970s and the 1980s. Giannias *et al.*, (1997) also report a reduction in the dispersion of a number of welfare indicator at the Greek NUTS II level. On the contrary, Siriopoulos and Asteriou (1998) found no evidence of convergence to steady-state growth paths, though these different results may well be influenced by data problems.

A number of recent papers have examined the spatial structure of Greek industry. Melachroinos and Spence (1997) noticed a sharp change taking place in the 1980s in terms of the geography of industrial development. The major industrial centres of the country seem to attract capital-intensive manufacturing activities, while peripheral regions seem to attract labour-intensive activities. In fact, Fotopoulos and Spence (1999) show that the spatial distribution of new manufacturing plant openings in Greece is affected by initial conditions related to high labour productivity, past growth performance, population density (which they interpret as indicating agglomeration economies), availability of skilled labour and public spending on infrastructure.

Petrakos and Saratsis (2000) have provided the most systematic analysis of the evolution of regional inequalities in Greece. Using regression analysis, they investigate the behaviour of regional inequalities during the business cycle. Petrakos and Tsoukalas (1999) also test the correlation between regional inequalities and macro-economic performance. Their findings support the hypothesis that economic development in each business cycle begins from the two major poles of economic activity, Athens and Thessaloniki. This intensifies inequalities since the spread to the rest of the country is by no means immediate.

While European level evidence indicates that disparities tend to diminish in periods of strong economic expansion, the findings for Greece tend to indicate the opposite.

Thus, while European-level evidence indicates that disparities tend to diminish in periods of strong economic expansion, the findings for Greece tend to indicate the opposite. A possible reconciliation of these two apparently contradictory findings could be that economic expansion is more likely to lead to regional convergence in advanced countries with a spatially integrated economic base, while it is more likely to lead to regional divergence in less advanced countries with strong spatial imbalances and a dualistic economic base. This shows that dealing with the less developed regions in Greece is a difficult problem, as the spatial fragmentation of the productive base does not allow for any significant spillover effects to take place.

4. Economic performance in Crete, Peloponnese and Thessaly

With this background, this section looks at three (NUTS II) regions in more detail. They are Thessaly, a centrally located region, Peloponnese, the southern most part of the Greek mainland, and Crete, which is an island. Peloponnese is included in our analysis because of its relative backwardness and recent stagnation, Thessaly because it is undergoing structural change, and Crete because of its superior economic performance (1).

4.1 Population and geography

The three boxes summarise a few key features of these regions. They are relatively small by EU standards. Thessaly is the largest of the three regions, with a population of 742 000 in 1997, followed by Peloponnese, with 670 000, and by Crete, with 560 000. There is a highly unequal regional distribution of human capital in Greece, with Attiki dominating the three regions (see Table 4). However, the difference between the three case study regions are not substantial.

Table 4. Percentage of population with post-secondary education

Regions	1971	1981	1991
Crete	1.62	1.96	5.57
Thessaly	1.40	1.90	5.54
Peloponnese	1.54	2.04	5.03
Attiki	4.02	5.52	9.34
Greece	2.37	3.30	6.86

Source: National Statistical Service of Greece, Regional Statistics.

1) We have avoided extreme cases of success (such as the metropolitan region of Attiki) and of failure (such as the region of Ipiros), as the factors behind their success and failure are rather obvious. Success in Attiki is mainly related to the process of tertiarisation of the economy, while failure in Ipeiros is related to remoteness and isolation caused by territorial morphology and poor transportation infrastructure. Peloponnese as a NUTS II region excludes the Prefecture of Achaia, which occupies Peloponnese's northwestern corner and historically belongs to it.

Box 1. Crete

Crete is the largest island in the Greek archipelago, and the country's southernmost region. It is bounded by the Aegean Sea in the north and the Libyan Sea in the south. It contains diversified terrain with high mountains and deep gorges along with valleys and coastal plains. In total mountains cover 49% of the land area (and another 28% is semi-mountainous). Its main city is the fourth largest in the county; however, most of the population live in very small towns and villages.

Surface :8 340 km^2
Population: 559 300 inhabitants (1996)
Population density: 67.1 inhabitants per km^2
Largest cities (1991 population): 1. Irakleio (126 907); 2. Chania (68 066); 3. Rethymno (24 064); 4. Agios Nikolaos (8 574).

Crete has developed an economy based primarily on tourism and agriculture. It contains the important archaeological site of Knossos. Tourist developments are mainly located along the northern coast where road communications are also the most developed. It is arguably Greece's most successful region outside the metropolitan areas of Athens and Thessaloniki. GDP per capita in 1996 stood at ECU 13 215 per person (in PPS terms).

Average annual growth rate of GDP (1989-95): 1.95%
Agriculture as a share of GDP (1994): 31.2%
Manufacturing as a share of GDP (1994): 12.7%
Services as a share of GDP (1994): 56.1%

Participation rate (1999): 58.8% (men: 61.1%; women: 49%)
Unemployment rate (1998): 7.1%
Educational attainment of population, aged 25-59 (1997): Less than high school degree: 58%; with high school degree: 28%; with a college degree: 14%.

All three regions under study are characterised by a relatively low rates of urbanisation. The urban population as a share of the total ranges from 35% to 45%, compared to the EU average of about 70%. Two more characteristics concerning the spatial distribution of economic activity within the three regions deserve mention. First, the urban systems in each of those regions differ considerably. Thessaly has two relatively large urban centres of about 150 000 people each (the 5^{th} and 6^{th} in the national ranking) and two smaller cities with about 50 000 and 30 000 each, respectively. Several towns of about 10 000 each make up the remainder of its urban system. Peloponnese lacks a major urban centre. Its largest city has no more than 50 000 people (15^{th} in the national rank), while there are another 4 cities with populations ranging from 10 000 to 30 000. Most of its population lives in very small towns and villages. Crete falls somewhere between Thessaly and Peloponnese. It has a large urban centre of about 150 000 (the 4^{th} in the national rank), a second with a population of about 60 000, and two or three more with populations ranging from 10 000 to 25 000 people. Low rates of urbanisation and the few relatively large cities have consequences for the composition of human capital, and suggest little scope for local agglomeration economies.

Box 2. Peloponnese

Peloponnese is at the southernmost part of the Greek peninsula, separated by narrow isthmus from the mainland. Although principally mountainous (50% of the land area is mountainous, with another 30% semi-mountainous), it also contains valleys with cultivable land. It lacks an urban area of any size.

Surface : 15 510 km^2
Population: 671 400 inhabitants (1996)
Population density: 43.3 inhabitants per km^2
Largest cities (1991 population): 1. Kalamata (45 292); 2. Corinthos (27 412); 3. Tripoli (22 463); 4. Sparti (15 531); 5. Nafplio (11 897).

While agriculture is an important factor in the local economy, industry has developed in the northern region close to the metropolitan area of Athens. Though it has a substantial coast line and hosts many archaeological sites (e.g. Epidavros), tourism has not been extensively developed. Much agriculture, particularly in the mountainous south, is involved with olive growing and sheep rearing. The regional economy has stagnated in the second half of the twentieth century and continues to be dominated by rather traditional economic structures. GDP per capita in 1996 stood at EUR 10 627 per person (in PPS terms).

Average annual growth rate of GDP (1989-95): -2.76%
Agriculture as a share of GDP (1994): 30.5%
Manufacturing as a share of GDP (1994): 23.2%
Services as a share of GDP (1994): 46.3%

Participation rate (1999): 50.7% (men 61.9%; women: 39.8%)
Unemployment rate (1998): 8.1%
Educational attainment of population, aged 25-59 (1997): Less than high school degree: 62%; high school degree: 26%; college degree: 11%.

The second feature is that both Thessaly and Peloponnese are characterised by geographical divides. In Thessaly, the eastern plain is more urbanised and developed. This also applies to the northern part of Peloponnese, near Athens. The other parts of Thessaly and Peloponnese are mountainous and rural. Agriculture here involves olives and sheep rearing, with limited scope for future development.

A final comment concerns the distance of the three regions from the major economic centres of the country and from international markets. Peloponnese is closer to Athens than the other two regions. Especially its northern and most developed part could be considered to be at an advantage with respect to proximity to markets. Several industries from Attiki have crossed the regional border and located in the northern part of Peloponnese in order to combine benefits of investment incentives (which are not available in Athens) with a short distance to the metropolis.

Box 3. Thessaly

Thessaly lies in the middle of the Greek peninsula, and is bounded by the Aegean Sea on the east and mountain ranges that separate it from Epiros on the west. Much of its land area is arable plain. Thessaly is crossed by the main north-south national highway that connects the two metropolitan areas of Athens and Thessaloniki. Its two largest urban areas rank as the fifth and sixth largest in the country.

Surface :14 050 km^2
Population: 741 800 inhabitants (1996)
Population density: 52.8 inhabitants per km^2
Largest cities (1991 population): 1. Volos (115 744); 2. Larisa (113 090); 3. Trikala (46 962); 4. Karditsa (30 289).

Thessaly is distinguished by its agriculture and manufacturing. The latter is important in the regional economy, although it has declined in the 1980s and the early 1990s. There is intensive agriculture on the eastern plain; however, most produce is exported to other regions for processing. GDP per capita in 1996 stood at EUR 11 429 per person (in PPS terms).

Average annual growth rate of GDP (1989-95): 0.27%
Agriculture as a share of GDP (1994): 34.5%
Manufacturing as a share of GDP (1994): 22.4%
Services as a share of GDP (1994): 43.1%

Participation rate (1999): 52.1% (men: 64.7%; women: 39.9%)
Unemployment rate (1998): 10.7%
Educational attainment of population, aged 25-59 (1997): Less than high school degree: 64%; high school degree: 22%; college degree: 14%.

Thessaly lies in the middle of Greece. It is about 3-4 driving hours away from Athens and 2-3 hours away from Thessaloniki. These distances may have exceeded a threshold, allowing the development of two large urban centres and a significant industrial base. The eastern part of Thessaly is crossed by the main north-south national highway, providing relatively good access to the large markets of Athens and Thessaloniki. Access to the western and north-western part of Greece, however, is limited due to poor east-west transportation links, and a mountain range separating eastern from western Greece. Another disadvantage of the region is that despite its size, urban population and export potential, it lacks a major airport.

Crete is an island quite isolated from the mainland. This has, on the one hand, led to a relative autonomy of its regional market and, on the other, prompted an early search for policies to overcome isolation. As a result, in addition to an effective system of sea links with Athens, Thessaloniki and the major islands, Crete already has two airports with scheduled domestic and international flights, and numerous international charter flights during the tourist season. Exporters of agricultural products use air freight with an increasing frequency. Therefore, Crete has found

ways to overcome considerably its distance from the mainland, and to improve its access to major domestic and international markets.

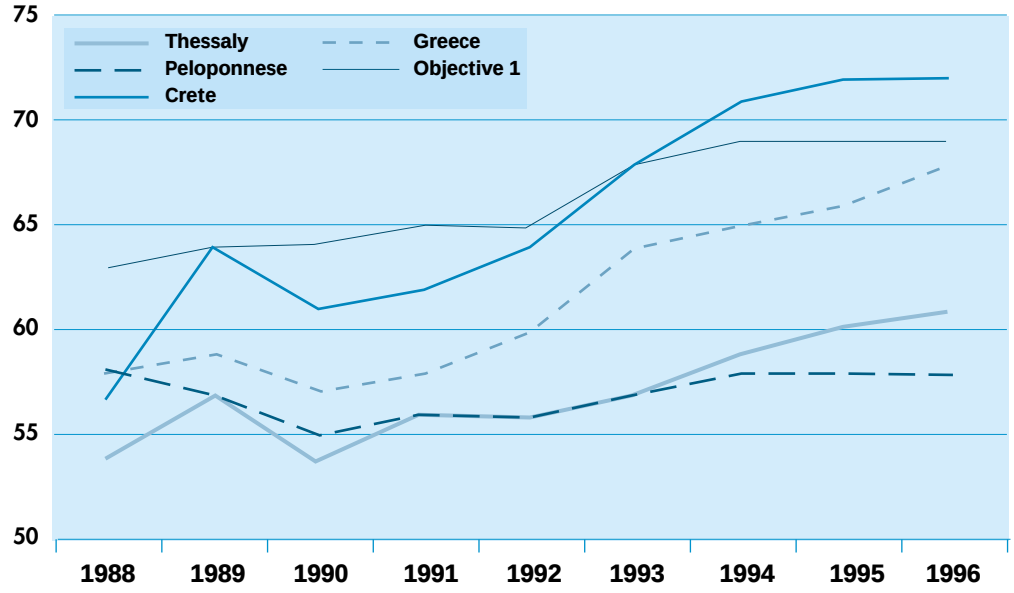
Geography and transport infrastructure have affected the three regions in different ways.

Overall, geography and transport infrastructure have affected the three regions in different ways. Geography would seem to confer Peloponnese an advantage with respect to the Athens metropolitan market, and Thessaly an advantage in the sense of being a central place in Greece. Territorial morphology and poor transport infrastructure, however, limit these advantages for the southern part of Peloponnese and the western part of Thessaly, those regions' less developed areas. Nonetheless, Crete seems to have developed effective transportation links and thus has overcome its geographic isolation.

4.2 Comparative performance of the three regions

Figure 1 (which is based on Table 1) plots gross domestic product per head in purchasing power parity relative to the EU-15 average. Crete has made most progress, having increased on this scale by 15 percentage points. Thessaly has reduced its distance from the EU average (by 7 percentage points), while the Peloponnese has made no progress at all. In terms of the national average, Thessaly has slightly declined while Peloponnese has deteriorated by as much as 10 percentage points.

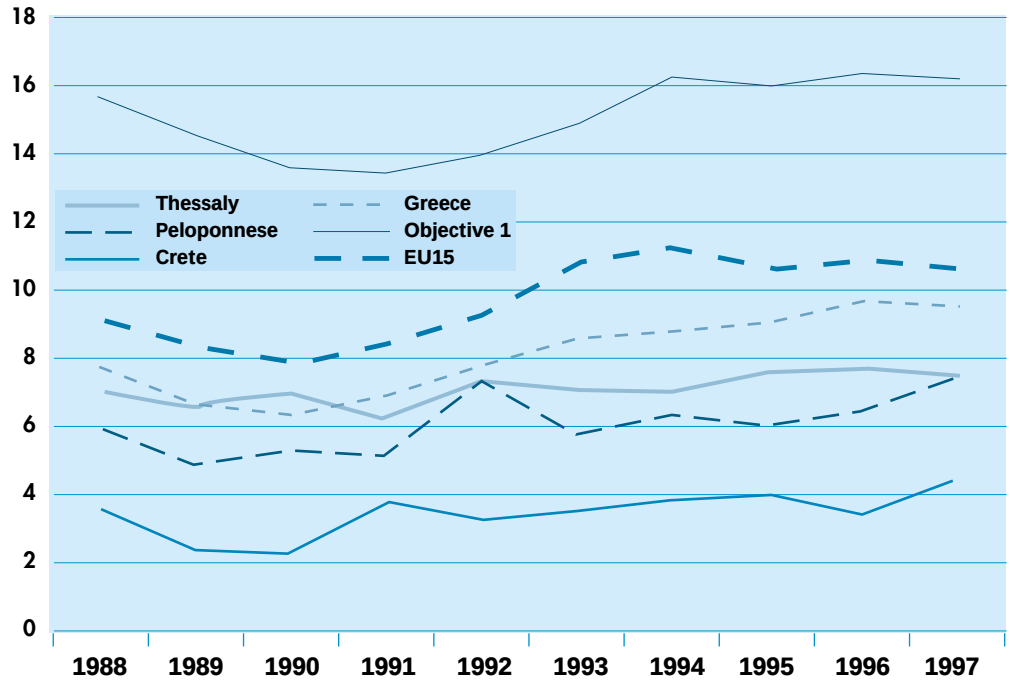
Figure 1. GDP per capita in PPP, EU-15 = 100



Source: From Table 1.

Figure 2 presents unemployment data. Among the three regions, Thessaly has the highest unemployment figure, due to the decline of its industrial base during 1988-97. Peloponnese has slightly lower rates than Thessaly's, while Crete has much lower, and generally stable, unemployment rates throughout the period.

Figure 2. Unemployment rates, percentage



Source: From Table 2.

Figures 3 and 4 combine productivity and employment data to give an overall picture of relative performance. Productivity changes are in relation to EU average, while employment changes are in percentage terms. Following Camagni (1993), we can link the first (upper, right hand side) quadrant of the figures with a "virtuous economic cycle", as relative productivity growth is associated with employment growth. The second (lower, right hand side) quadrant may be interpreted as "assisted development," as employment growth is associated with a relative decline in productivity. The third (lower, left hand side) quadrant may indicate a "vicious economic cycle", as declines in productivity are associated with employment cuts. Finally, the fourth quadrant may be interpreted as "economic restructuring", as employment cuts lead to relative productivity growth.

During 1988-93 (Figure 3), Greece, O1Rs and Crete all combined positive productivity changes with positive employment changes in a "virtuous economic cycle". Thessaly combined positive relative productivity growth with negative employment growth. It faced this "economic restructuring" as many of its firms belonged to sectors that have been under severe pressure from international competition, including textiles, metallurgy, clothing and automobiles. Peloponnese lies at the margin, combining positive growth with zero employment growth.

During 1993-97 (Figure 4), the picture changes considerably. Crete continues to do better than O1Rs, but does not dominate Greece. The other two regions have switched quadrants. Thessaly has moved from the "restructuring'' phase to the "assisted development" phase, possibly thanks to the policies aimed at combating rising unemployment in industrially declining areas. On the other hand, Peloponnese has moved to the "vicious cycle" quadrant, experiencing a deterioration of its position in relative terms.

Overall, Crete clearly stands out because of its better performance throughout the entire period. On the other hand, Peloponnese stands out for its poor achievement.

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Figure 3. Productivity and employment change, 1988-93

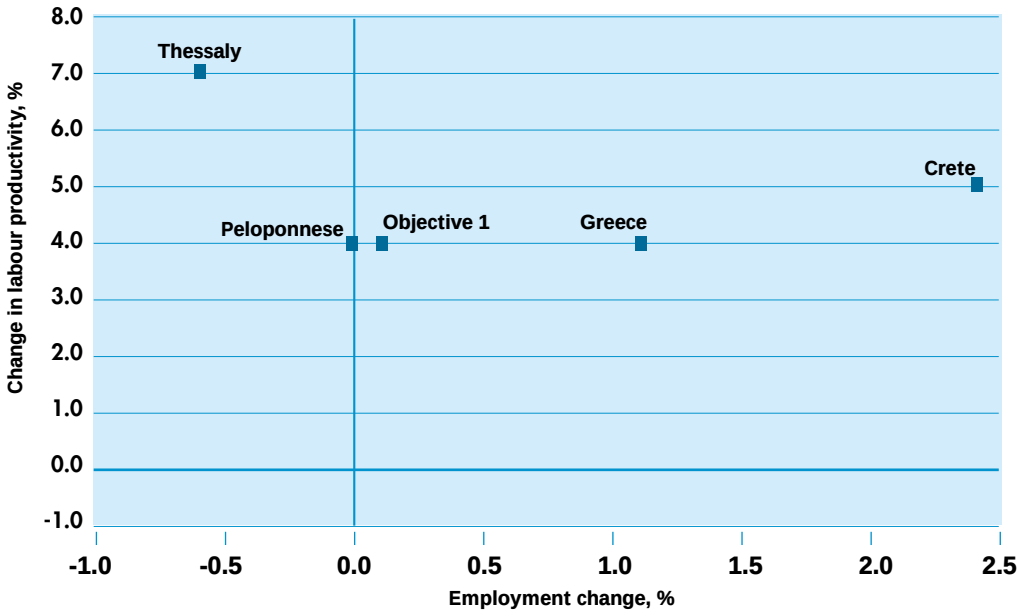
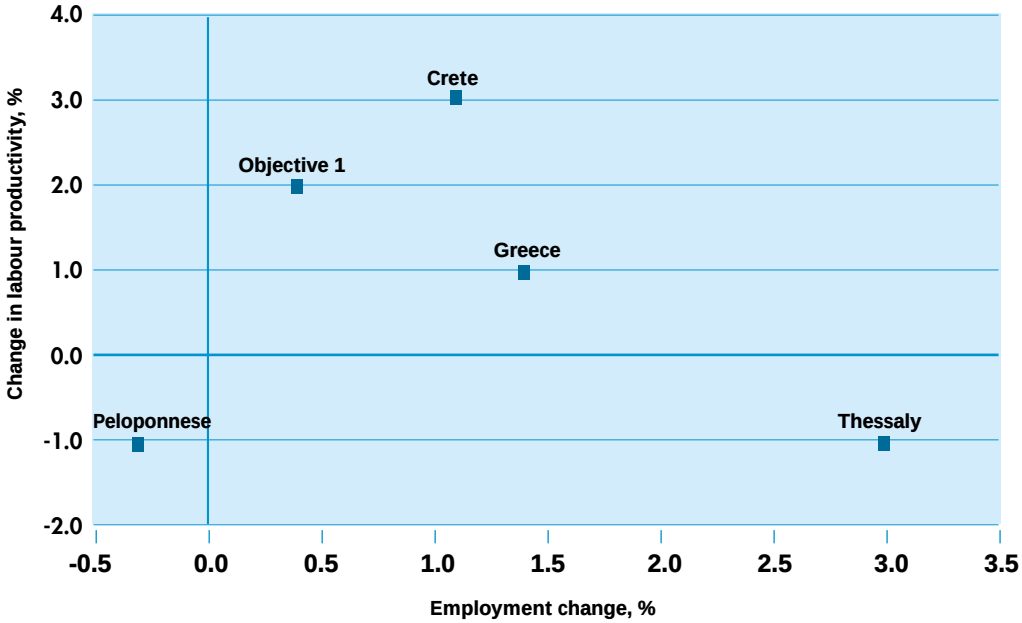


Figure 4. Productivity and employment change, 1993-97



4.3 Firm size and sectoral factors

One explanation of the different performance comes from economic structures. Table 5 reports firms size in each of the region. Thessaly has by far the largest industrial base, though it has been hit by crisis. Linkages with agriculture have not been fully exploited. Though there is intensive growing of industrial agricultural products on the eastern plan, most products are exported to other regions as raw materials.

Table 5 shows that Peloponnese has almost the same average industrial firm size as Thessaly, though firms are concentrated in the northern part (near Athens), and there is a low overall firm density. Industry in the southern and central parts of the region tends to be small traditional units basically serving local demand. As in the case of Thessaly, local processing of agricultural products - which would increase local value added - is very limited. With the exception of firms serving the needs of the Athens metropolitan area, the industrial export base of the region is small. A serious impediment to further industrial development is the lack of urban services, as the cities of the region have not grown during the last few decades, perhaps because of the agglomeration shadow of Athens. Towns are very small and not conducive to industrial development.

Crete is quite different, and appears to be more of a service economy (it has more firms in trade and services, and considerably higher turnover for these firms than seen the other two regions - see Table 5). This difference has arisen from the development of tourism. Large-scale investment in hotels in Crete has taken advantage of good climatic conditions (a prolonged summer session), sunny beaches, clean waters and picturesque villages and transformed the island to an international summer resort. Tourism in the Peloponnese is run typically from outside the region and involves day trips from Athens to visit historical monuments. Thessaly's tourism is primarily domestic, as it lacks the advantages of a prolonged summer season and historical monuments. In both regions accommodation differs from Crete, in that it is provided mostly by small-scale family-run businesses that offer limited services and recreation facilities. Figure 5 summarises the tourist capacity of the regions.

Table 5. Firm size, 1994

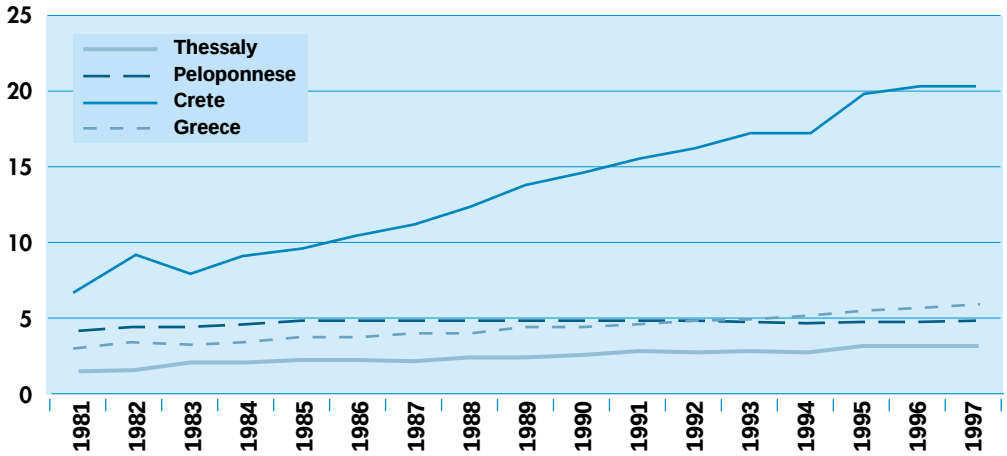
	Number of firms	Turnover (million GRD)	Turnover/firm (million GRD)	Turnover/1000 residents (million GRD)
Industry and Construction				
Thessaly	2,571	298,495	116.1	406
Peloponnese	1,594	184,446	115.7	278
Crete	2,305	205,808	89.3	375
Greece	51,190	10,720,410	209.4	1026
Trade and Services				
Thessaly	2,821	112,989	40.0	153
Peloponnese	2,424	82,050	33.9	125
Crete	3,609	285,024	79.0	518
Greece	49,913	6,947,398	139.2	667

Source: National Statistical Service of Greece, Regional Statistics

Crete presents the best available - although far from ideal - example of a regionally integrated economy.

The other two sectors in Crete either serve local demand, or feed the tourist industry with local inputs. Thus, Crete presents the best available - although far from ideal - example of forward and backward linkages among sectors and the best available example of a regionally integrated economy.

Figure 5. Hotel capacity: Number of beds per 100 inhabitants.



5. Regional policies in Greece

What was the impact of regional policy on these outcomes? After sketching the institutional framework in Greece, we discuss the application of investment support schemes, the effectiveness of EU programmes, and the impact of public investment.

5.1 The institutional framework

Historically, Greece has been characterised by a highly centralised system of public administration. All important decisions about the allocation of funds and the provision of regional infrastructure have been made centrally by the national government in Athens.

Regional administration (at the NUTS II level) did not exist prior to the mid-1980s. The heads of the regional administration units are appointed by the national government, while the regional councils mainly advisory bodies are made up of local public officials, such as prefects, mayors and representatives of professional organisations. Despite local participation, regional administration is not really an autonomous layer of government, but rather a branch of the central government administration, with a specific mission related to EU programmes.

Prefectural Administration (the NUTS III level, *nomoi*) was until 1994 also a branch of the central administration, with Prefects appointed by the government. Since 1994, the prefect and the prefectural council are elected in local elections, and in that sense they do comprise a new form of local government. This institutional change should be seen as a positive development towards governmental decentralisation. However, many unresolved issues, including the division of responsibilities and above all intergovernmental fiscal relations, generate tensions among the different levels of public administration and limit the potential contribution of local administration to promotion of local and regional development.

The bottom layer of administration are cities, towns and villages (NUTS V). This is the oldest form of local administration in Greece, with mayors and city councils being elected by their constituencies to administer the local provision of public services and infrastructure. This level is the most experienced and best funded. However, its ability to deal with local problems has been hampered, until recently, by the existence of numerous villages with very small populations ranging from 100 to 500 residents. Problems of fragmentation and ineffectiveness of the lower level administration have been addressed by recent legislation (the Kapodistrias Project), that imposed compulsory consolidation of small municipalities (in close proximity to one another) into larger administrative units. This was met, of course, by fierce opposition.

The organisation of public administration has hampered the effectiveness of regional policy.

In sum, certain aspects of public administration hamper the effectiveness of regional policy. First, despite recent efforts to decentralise, the lower levels of administration are either appointed by the central government, or are dependent on it financially. Second, local government is both under-funded and highly fragmented. Even if many problems, such as funding and jurisdictional and legislative conflicts, had been addressed, public administration would still not be very effective, as it lacks sufficient scale to ensure efficient provision of public goods and to implement local development policies. Moreover, in prefectures that contain large urban centres, there is no clear division of jurisdiction between the mayor and the prefect. Because of these problems, there is growing support in favour of administrative reform, which should reduce the number of administrative units at both the NUTS II and NUTS III level. More specifically, it is argued that the number of prefectures should be reduced to about 30 (from 51, at present) and the number of Regions should be reduced to about 6-7 (from 13, at present).

Despite these problems, Greece has, during in the 1990s, launched a number of important regional initiatives aiming at mobilising local resources and fostering growth. Several prefectures, regions, or even municipalities designed development plans intended to draw on local strengths and to address the restructuring of their local economic base. Of course, several of these plans were rather naïve, and lacked realistic objectives and clear policy instruments. Nonetheless, the fact that local initiative was mobilised to a fairly large extent and in a far more organised manner than ever before augurs well for the future.

5.2 Regional investment incentives

A main avenue of support for lagging regions has come through subsidies for new private investment. The framework for public assistance to business investment in Greece is currently provided by Law 2601/98 of 1998, though similar legislation was first passed in 1982 (2).The assistance provided includes grants, loans, interest subsidies and tax allowances. The country is divided in four support zones, designated by A to D, and each prefecture is assigned to one of these zones. Zone A includes Athens and Thessaloniki. Here firms receive practically no support. Assistance increases from Zone B to Zone D.

There are a number of other eligibility criteria in addition to location. Investment projects qualify if they exceed a minimum size, take place in particular sectors of the economy (initially industry and mechanised agriculture, but in the latest legislation services and trade were also included), and satisfy certain conditions in terms of production processes adopted (new technologies, environmental protection, etc.) and of new employment created.

2) I.e. Law 1262/82 of 1982 which was subsequently amended by Law 1892/90 of 1990.

Several papers have attempted to examine the impact of investment incentives on regional development. Petrakos *et al.*, (1993) show that regional investment incentives constitute the least important factor in attracting investment and increasing employment, while Petrakos and Tsoukalas (1997) conclude that incentives can be effective in attracting investment only in combination with the special facilities provided by designated "Industrial Areas." Georgiou (1991) argues that the influence of incentives on the redistribution of investment in favour of the most heavily favoured areas was probably not decisive. Petrakos and Saratsis (1999) reached similar results, as they found no evidence that higher regional investment incentives lead to higher growth rates of GDP per capita. In fact, the failure of regional investment incentives to promote development in favoured regions is apparent as the regions most favoured by the incentives continue to be the least developed ones, nearly 20 years after the introduction of the first comprehensive investment law (Law 1262/82). Even if the incentives do contribute to the creation of new jobs in those regions, as reported by Vagionis and Spence (1994), it is by no means certain that this will lead to faster economic growth.

Table 6 presents the classification of the prefectures of Thessaly, Peloponnese and Crete according to investment support zones they belong to, and the assistance they receive for investment projects. This table shows that the most favoured region is Peloponnese, which has most prefectures in the highly subsidised Zones C and D. The least favoured region is Thessaly, which has two of its prefectures (though counting for more than 60% of the population) in Zone B. Crete is between the other two.

Table 6. Classification of the prefectures of Crete (CR), Peloponnese (PE) and Thessaly (TH), according to investment incentives zones

Zone	Period 1983-90 Law 1262/82		Period 1990-98 Law 1892/90	
	Rate of subsidy	Prefectures	Rate of subsidy	Prefectures
A	0	-		0
B	10-25%	Magnesia (TH) Larisa (TH) Iraklio (CR) Korinthias (PE)	15%	Magnesia (TH)+ Larisa (TH)*+
C	15-40%	Trikala (TH) Karditsa (TH) Chanion (CR) Rethimnou (CR) Lasithiou (CR) Lakonias (PE) Argolidos (PE) Arkadias (PE)	25%	Part of Larisa (TH) Trikala (TH) Karditsa (TH)** Chanion (CR) Rethimnou (CR) Lasithiou (CR) Lakonias (PE) Argolidos (PE) Arkadias (PE)**
D	20-50%	Mesinias (PE)	35%	Mesinias (PE) Part of Karditsa (TH) Part of Arkadia (PE)

* Except for a small part in zone C. ** Except for a small part in zone D.

+ Partly characterised as industrially declining regions after 1996 and receiving further support (zone D)

Source: Ministry of National Economy, Greece

Tables 7 and 8 present the resulting sectoral and regional distribution of private investment projects that have received assistance. During the period from 1982 to 1990 (Law 1262/82), Crete was the recipient of 13% of total investment at the national level, while Thessaly and Peloponnese have received about 5-6% (Table 7). Investment activity in Crete was heavily concentrated in the tertiary sector of the economy (tourism), accounting for 21% of the total investment made in this sector. Crete also attracts investment projects that are larger than the national average and nearly double in size than those in Thessaly and Peloponnese.

The picture in the second period 1990 to 1995 (Law1892/90) differs from that in the first in several important ways (see Table 8). First, Thessaly received a higher share of total investment than Crete, though Peloponnese is still last in the list. Second, we see that Crete now focuses more on industry than services. Third, Thessaly has managed to attract relatively larger investment projects than the other two regions, especially in industry and agriculture. The industrial decline that hit Thessaly in the late 1980s and early 1990s generated pressures for restructuring, which have apparently been facilitated by the investment incentive laws and especially their provisions for special assistance to industrially declining regions.

It is clear that the investment incentives have not succeeded in directing more, or larger projects to Peloponnese, which is the region furthest behind.

Table 7. Distribution of private investments, 1982-90 (Law 1262/82), percentages

	Investments (regional shares)			
Sector	Primary	Secondary	Tertiary	Total
Greece	100	100	100	100
Crete	5	6	21	13
Peloponnese	8	7	3	5
Thessaly	13	7	5	6
	Investments (sectoral shares)			
Sector	Primary	Secondary	Tertiary	Total
Greece	8	46	46	100
Crete	3	22	75	100
Peloponnese	13	62	25	100
Thessaly	16	51	33	100
	Average size of investments (Greece=100)			
Sector	Primary	Secondary	Tertiary	Total
Greece	100	100	100	100
Crete	97	52	122	108
Peloponnese	100	75	59	64
Thessaly	64	90	64	64

Source: Ministry of National Economy, Greece

Table 8. Distribution of private investments, 1990-95 (Law 1892/90), percentages

	Investments (regional shares)			
Sector	Primary	Secondary	Tertiary	Total
Greece	100	100	100	100
Crete	5	4	14	6
Peloponnese	6	4	4	4
Thessaly	9	7	3	6
	Investments (sectoral shares)			
Sector	Primary	Secondary	Tertiary	Total
Greece	3	78	19	100
Crete	3	51	46	100
Peloponnese	5	76	19	100
Thessaly	5	86	10	100
	Average size of investments (Greece=100)			
Sector	Primary	Secondary	Tertiary	Total
Greece	100	100	100	100
Crete	134	68	114	86
Peloponnese	67	63	103	67
Thessaly	130	151	48	122

Source: Ministry of National Economy, Greece

Overall, Crete and Thessaly have attracted larger amounts of private investment than Peloponnese. Crete is preferred by services, although a recent shift in favour of manufacturing is evident. Thessaly is preferred by industry and especially larger-scale industry. It is clear that the structure of investment incentives has not succeeded in directing more, nor larger, projects to Peloponnese, which is the region furthest behind.

FDI has tended to concentrate primarily in the Athens and Thessaloniki regions.

Foreign direct investment (FDI) is often though to play a particular role in economic growth, particularly when there is scope for technological "catch-up". Unfortunately, there are only a few studies of the regional distribution of FDI in Greece. Papandos (1999) has compiled data from the Ministry of National Economy (MNE) for the period 1988-1991. This is shown in Table 9. During the 1988-1991 period, the bulk of FDI went to Zone A, which includes the Attiki and Thessaloniki prefectures (and where there is no special assistance under the investment incentives legislation). The regions of Thessaly, Peloponnese and Crete received less than 1% of FDI each. This distribution is largely explained by the sectoral distribution of FDI, which includes mostly services (such as banking and insurance) or trade.

Table 9. Distribution of inward FDI flows to investment zones, 1988-91

Year	Zone			
	A	B	C	D
1988	92%	5%	3%	-
1989	58%	20%	22%	-
1990	78%	22%	-	-
1991	87%	13%	-	-

Source: Papandos (1999), MNE (1994) and own calculation.

Unfortunately, the MNE has not collected information on the spatial distribution of FDI since 1991. The only data available now are from the Hellenic Centre for International Investment (ELKEDE, a newly established public service to foreign investors interested in Greece) and these only include projects in which the Centre itself had an active involvement. This data shows the border region of Thrace (a special border zone with higher incentives than even Zone D) has attracted considerable investment activity in the last few years. However, this must be interpreted with caution since the investment projects reported by ELKEDE do not include investments by some large investors (especially in the banking sector), who obviously feel they do not need assistance in deciding where to invest (3).

Overall, the data indicate that FDI (and especially projects attracted by the tertiary sector of the economy which are the majority) have tended to concentrate primarily in the Athens and Thessaloniki regions. They also indicate that the particularly favourable financial incentives granted to the region of Thrace may have started to pay off, by attracting some international investment activity in industry, perhaps also because of the opening up of Greece's northern borders. In any case, the regions of Thessaly, Peloponnese and Crete do not seem to benefit significantly from FDI. Apparently, FDI is mainly associated with the tertiary sector (services, banking, insurance, trade) which enjoys significant economies of agglomeration

5.3 Infrastructure

Funding from the central government also comes for public works. This is done via the Programme of Public Investment (PPI). Although PPI funds are supposedly allocated to regions according to "objective criteria," such as population or level of development, Crete has benefited to a greater extent. In 1995, Crete received GRD 79 million per 1 000 inhabitants, 44% more than Thessaly, and almost double the figure for Peloponnese. A similar discrepancy can be seen over a number of years.

The evidence does not point to an impressive regional impact from infrastructure investment.

It is often argued that infrastructure constitutes a necessary precondition for regional development. However, the evidence does not point to an impressive regional impact from infrastructure investment. Vickerman *et al.*, (1999), for example, observe that regional development policies aimed at creation of infrastructure in lagging regions have not been very successful in reducing regional disparities in Europe. A number of attempts have been made to evaluate regional

3) For example, the magnitude of the annual FDI inflow in the 1988-91 period as reported by MNE is around GRD 140 billion, while the annual sums in the 1996-1998 period reported by ELKEDE is only around GRD 30 billion.

infrastructure policies in Greece. Several papers (e.g. MNE, 1993, and Petrakos *et al.*, (1993) report evidence that better infrastructure is associated with higher levels of development. Petrakos and Saratsis (1999), however, investigated the impact of the initial level of regional transport infrastructure on the rate of growth of GDP per capita and found no significant effect. These seemingly contradictory results may be because the existence of good infrastructure is associated with higher levels of development, but it does not ensure further improvement, since this depends on additional economic and structural factors.

We have already noted that a critical factor for Crete was the establishment of effective transportation links to overcome its geographic isolation. In particular, the building of the two international airports permitted the development of the international tourist industry. On the other hand, the existence an airport in the southern part Peloponnese with regular flights to Athens has not so far worked out as a major transport link.

5.4 EU programmes

A number of large EU-funded infrastructure projects are under way -it is not clear whether they will eventually have favourable impacts on all of the regional economies involved.

The support from the EU has also been substantial. For example, from 1989 to 1993 the EU's First Community Support Framework (CSF I) spent ECU 1.9 billion in Greece, or some 2.7% of Greek GDP. The Second Community Support Framework (CSF II) for the following six year (1994-99) was some ECU 3.0 billion or 3.7% of Greek GDP.

Table 10 gives the allocation of funds under the CSF II to the three regions under examination. It shows each region receiving from ECU 730 to ECU 810 per head. The regions have exhibited a different mix of priorities in development policies, but there is generally a significant role for infrastructure, human development, and tourism.

Table 10. The allocation of CSF II Funds to Crete, Peloponnese and Thessaly, 1994-99

	Crete	Peloponnese	Thessaly
Share of national population	5.2%	5.9%	7.1%
Share of regional CSF II funds	6.0%	6.7%	8.5%
Total funds for the 1994-99 period, ECU	435 300	440 300	560 900
Funds per head, ECU	810	727	767
Allocation of funds, percentage:			
Rural development	13.0%	9.1%	17.1%
Infrastructure	23.2%	11.9%	16.6%
Industry	4.9%	0.6%	3.6%
Human resources	23.3%	17.9%	19.4%
Urban development	0.4%	2.0%	1.4%
Investment	-	16.2%	11.1%
Support of SMEs	5.7%	0.5%	0.3%
Environment	9.8%	6.3%	8.2%
Local Development	6.6%	13.8%	15.7%
Tourism	12.2%	20.6%	6.5%
Total	100.0%	100.0%	100.0%

Source: Community Support Framework of Greece (1994-1999).

Note, however, that only 30% funds for this period (1994-99) were allocated directly to the 13 Greek regions. The remaining 70% were allocated via multi-sectoral national-level programmes that included some very large projects. In several cases (notably the Athens Metro), these have favoured Athens. A number of other large transport projects under way are likely to have impacts on the three case study regions. They will improve the accessibility of central and southern Peloponnese to Athens and to the rest of Greece, and the accessibility of (mainly western) Thessaly to Athens and Thessaloniki. Although these projects are expected to contribute to the national economy, it is not clear whether they will eventually have favourable impacts on all of the regional economies involved. Indeed, adverse effects are also possible. Improved transportation networks linking large urban centres may intensify disparities, as it will be easier for producers in centrally located regions to invade peripheral markets previously protected by remoteness.

There is by now a growing body of information on the effectiveness of these programmes. For example, the implementation of the CSF I has been analysed by Economou (1997), Bougas (1994), Lyberaki (1996), and others. The CSF I was associated with a lower than desired impact on GDP growth in Greece, and registered, in fact, the lowest impact among all EU countries with comparable development problems and programmes. While the impact of CSF I on the annual GDP growth rates of Spain, Portugal and Ireland has been estimated by the European Commission at 0.7%, 1.0% and 0.7%, respectively, for Greece it is only 0.3%. These differences are despite the fact that the EU contributions for Greece were comparable to those for Portugal (where it was 3.1% of GDP), and greater than those for Spain (0.8% of GDP).

Factors that might explain the failure of CSF I to have a substantial impact include the fact that the CSF "Regional Operational Programmes" were actually not much more than lists of unrelated programs selected by a clientist political process. Second, they were dominated by small projects. Such fragmentation satisfied political needs or popular demand, but had only marginal economic effects. Third, several of the projects had small budgets and remained incomplete after the end of the Programme, thus having minor impact. "Soft" initiatives, networks, innovative actions and supportive services that encourage synergies were also largely absent5. Another important issue is often the lack of clear policy objectives at the regional level.

The Greek experience provides ample support for the notion that planning for development at the regional level depends critically on the quality of regional and local administration.

Crete has reportedly designed its CSF Regional Operational Programmes in a relatively more effective and coherent way than Thessaly, while those of the Peloponnese have been criticised as being vague and lacking specific goals (KEPE, 1997). At the implementation level, a recent report (EC, 1999c) suggests that Crete and Thessaly are among the regions that have done best in this connection (along with Attiki), while Peloponnese is experiencing delays in some parts of its programmes. The Greek experience provides ample support for the notion that planning for development at the regional level depends critically on the quality of planning know-how and on the quality of human resources, that are employed by regional and local administration and are engaged in the planning process.

4) To be fair, there is ample scope for learning-by-doing and catching-up in the implementation of the CSFs in Greece. CSF II is estimated by the European Commission to have a significantly higher impact on GDP growth (~1%) than CSF I (~0.3%) and a better internal structure. Unfortunately, its impact on regional disparities in Greece has not been discerned yet.

6. Conclusions

This paper has established a baseline of information for understanding the economic performance of the regions of Greece. We have stayed away from factors that go beyond economics and geography broadly construed. Perhaps, as we are about to conclude, it is appropriate to venture briefly into history. Crete, Peloponnese and Thessaly, the three regions that the paper has focused on, do have regional identities of their own that go back in history. Peloponnese is one of the founding regions of the modern Greek State, Thessaly joined Greece fifty years later in 1878, and Crete joined Greece in the early 1900s. They are not mere administrative subdivisions.

The literature we have reviewed has identified a number of factors in operation that have influenced the prospects of Greece for balanced regional development. A first finding points towards a possibly adverse impact of European integration on the regional industrial base of Greece. This has become apparent in regions with concentrations of larger (by Greek standards) industrial enterprises. The case of Thessaly, and other regions, which have experienced de-industrialisation in recent years, suggest that the process of economic integration might have had pronounced effects upon the regional concentration of manufacturing activity. Although similar tendencies are also apparent in Attiki and to some extent in Thessaloniki as well, the rapid increase of the tertiary sector of those two metropolitan areas has helped offset possible impact on employment, which was not the case in at least some of the other regions.

A second finding concerns the dependence of regional inequality on the business cycle. This finding explains at least part of regional convergence patterns during a decade of recession in the Greek economy. It also implies that economic recovery begins mainly in the major centres of economic activity and does not diffuse automatically to the periphery. This generates a policy problem that is hard to tackle, as the efforts aiming at national convergence to EU-average levels may be accompanied by undesirable increases in disparities among the regions of the country.

A third finding concerns the characteristics of those regions which have done relatively better. The evidence shows that a critical share of manufacturing, presence of capital intensive enterprises and of high quality human resources, and the development of tourism, are factors conducive to regional growth in Greece.

While these findings apply generally, our specific analysis of the characteristics of Crete, Peloponnese and Thessaly have revealed a number of additional factors that have contributed to differences in performance among the three regions. Initial conditions with respect to geography and climate may have lasting effects on the structural characteristics. This is in agreement with the notion, recently reaffirmed by the theories of new economic geography, that regional economic development is a path-dependent process.

The analysis has raised an interesting issue with respect to the role of geography in economic development. Although distance from the major world markets is always a disadvantage, proximity can be considered an advantage only under specific conditions. That is, by applying the results of Krugman and Venables (1995) in a regional context, we can argue that proximity to large markets (or metropolitan regions) facilitates growth only if differences in development levels and structures are not too pronounced. Otherwise, it leads to a penetration of product markets by the more

dynamic enterprises of the more advanced region. These differences may explain why Peloponnese has failed to take advantage of its proximity to Athens, but Athens has taken advantage of its proximity to Peloponnese. It appears that distance from Athens has enabled Thessaly and Crete to offset the "curse" of proximity to the metropolis and to develop minimum urban infrastructure.

Lack of spatial and sectoral integration of the economy at the regional and national levels appears also to be hampering performance. As noted before, the process of economic growth has been known, in general, to be associated with increasing regional disparities, because linkages between the metropolis and periphery are poorly developed. Finally, policies (or the lack of policies) have played a role. The success of Crete in overcoming geographical isolation, by developing effective transportation and by taking advantage of its potential in tourism is a noteworthy lesson. The failure of Peloponnese to fully exploit its historical heritage as a tourism resource is at least in part due to poorly designed or implemented policies.

Table 11 illustrates these points in a qualitative fashion, with a ranking of the three regions on a relative scale of 1 to 3 with respect to a number of factors that include initial conditions, market processes and policies. Although this scoring method is rather crude, and alternative rankings (such as including different factors or assigning special weights to the most important of them) would affect results, the relative ranking is telling. Peloponnese rarely receives the top ranking (three stars) and Crete rarely receives the bottom ranking (one star). Thessaly is in an in-between position, often nearer the top rather than the bottom of the scale.

Table 11. Factors influencing the performance of the regions

Factors Influencing performance	Relative Rating		
	Thessaly	Peloponnese	Crete
"Economic variables & initial conditions"			
Agricultural development (traditional/extensive versus mechanised/intensive)	***	*	**
Local processing of agricultural products (forward linkages to industry)	**	*	***
Industrial development (small-scale versus large-scale)	***	**	*
Services (development of tourism)	*	**	***
Overall structure, and degree of regional integration of activities	**	*	***
Urbanisation	***	*	**
Location & accessibility to Athens	**	***	*
"Policy variables"			
Investment support for the private sector	**	***	*
Strategic transport links	*	**	***
Public investment	**	*	***
Demonstrated capacity to effectively implement development programmes (e.g. CSF)	**	*	***

*** Highest relative rating * Lowest relative rating

Regional policy must be sensitive to the needs and special circumstances of regions. It will probably not succeed unless current administrative structures are reformed.

Regional policies implemented the last two decades have not succeeded in reversing the highly concentrated pattern of spatial development in Greece. Yet, despite - or because of - all these conditions, the role of regional policy in Greece is today as important as ever. Perhaps, we have learned three lessons from the Greek experience. First, regional spending must be sensitive to the needs and special circumstances of regions. Second, regional policy must enhance the capabilities of local governments and civic organisations to exercise initiative. And third, regional policy will probably not succeed unless governmental administrative structures of Greece are reformed, by the design of more efficient administrative units and by the improvement of the human resources available to local and regional administration. This should have major consequences for the design and implementation of future Regional Programmes.

Addressing the broader questions associated with regional policy requires a better understanding of the behaviour of individuals and firms and their responses to policy variables. Thisse (2000) argues persuasively that the design of regional policy must account creatively for the underlying economic fundamentals that are responsible for perceived "regional imbalances." In a second best world, some regional imbalances are inevitable, and others are desirable. In addition to the problems we have already identified, the design of regional policy in the Greek context would be facilitated by a better understanding of these macroeconomic foundations. However, such analyses have yet to be conducted.

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Abruzzo and Sicily: Catching up and lagging behind

Rodolfo Helg

Giovanni Peri

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1. Introduction

Would you expect twins to reach different heights? The comparison is perhaps not so accurate, but in the early 1950s Abruzzo and Sicily were economically very similar. Both were "full members" of the underdeveloped Mezzogiorno, with little industry, few natural resources, poor transport infrastructure, high agricultural employment and a low standard of living. Yet, while Abruzzo has managed a substantial catch-up, Sicily has remained a lagging region. Consider regional GDP per capita compared to that in the North of Italy as the single most powerful indicator of this. From the early 1950s to the mid-1990s, Abruzzo increased its relative position by almost 25 percentage points. Over the same period, Sicily managed to climb up by only 2 percentage points relative to the north.

This paper assesses the determinants of the diverging paths between these regions. It is organised as follows. After having provided a broader overview of the development of the Mezzogiorno in the next section, Section 3 focuses in more detail on the performances of Abruzzo and Sicily. Growth accounting exercises will show that the role of total factor productivity growth - technological change - had a much more important role in Abruzzo than it did in Sicily. At the same time, Abruzzo had a much broader based development, including a range of manufacturing activities and market services. Development in Sicily was much more specialised, and relied heavily on investment in a few capital intensive industries. Section 4 discusses the implications of these different development strategies, and tries to identify the role of government policy in the process. Section 5 summarises and concludes.

2. The development of the Mezzogiorno

No discussion of regional performance in Italy can proceed without first putting it in the context of the North-South divide in the country. At the end of WWII, the South, or Mezzogiorno (1), was well behind Italian average development levels. Income per capita was only one-half of the northern Italian average, and with agriculture still accounting for 55% of employment (compared with one-third in the Centre-North), the degree of industrialisation had reached barely one third that of the rest of the country. One quarter of the population was illiterate, and no more than one-quarter of houses were equipped with drinkable water (2). Southern Italy, with a population of 17 million, was the largest underdeveloped area of Western Europe, and the magnitude of this regional imbalance within the original European Community of the Six was a key reason for the establishment of the EIB.

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1) The Mezzogiorno includes 8 regions (Abruzzo, Molise, Campania, Basilicata, Puglia, Calabria, Sicilia and Sardegna). Some parts of the three regions belonging to Centre Italy (Lazio, Marche, Toscana) were also targeted for special development policies.

2) Podbielski (1978), table 25; data for illiteracy refers to the population older than 6.

No discussion of regional performance in Italy can proceed without first putting it in the context of the North-South divide in the country.

Before the creation of modern Italy in 1861, the South was a separate political entity, the Kingdom of Two Sicilies, and the causes of its severe underdevelopment were deeply rooted in geography and history. Southern Italy was poorly endowed with natural resources (such as water or productive land) and far away from the more developed European countries. In addition, the policies of the Bourbon monarchy that reigned before unification did not help the region's development very much.

Nearly all the efforts of the early unified Italy, both during the "liberal" (1861-1913) and the fascist period (1922-1945), were devoted to the industrialisation of the North (Pescosolido, 1998; see also Bevilacqua, 1993, for a the history of Mezzogiorno). Import-substitution development policies (1887-1913) did achieve the industrialisation of north-western regions, but also damaged some export-oriented sections of southern agriculture. One should not think, however, of southern Italy as an homogenous underdeveloped region: large differences existed, for example, between more fertile coastal areas and mountainous inland areas (3), or between the cities and the countryside.

2.1 The first period of Italian regional policy for the Mezzogiorno: 1951 to 1973

The development of the Mezzogiorno was one of the top priorities of the early post-war governments (see D'Antone, 1996). A new policy for development was started with the creation of a special institution, the *Cassa per il Mezzogiorno* (i.e. the Mezzogiorno Fund). This was devoted to "pre-industrialisation", and included spending for public works in agriculture and for infrastructure (such as water canals, railways and roads) (Podbielski, 1978). The total expenditure of the *Cassa per il Mezzogiorno* was around 0.8% of Italian GDP during the 1950s and 1960s (see Table 1).

Table 1. The expenditures of the *Cassa per il Mezzogiorno*, in percent of Italian GNP

Year	
1951-55	0.75
1956-60	0.84
1961-65	0.75
1966-70	0.77
1971-75	1.14

Source: SVIMEZ (based on Istat and *Cassa per il Mezzogiorno* data), as in Podbielski, 1978, Table 5.

These were years of extraordinary development for the Italian economy and in particular for the manufacturing industry, though these developments largely by-passed the Mezzogiorno. During the 1950s, as much as 86% of new fixed gross industrial investment took place in the Centre-North (Cafiero and Padovani, 1989). Employment in the industrial sector rose from 10.0% to 12.3% of the population in the Centre-North, but only from 3.4% to 3.5% in the Mezzogiorno.

In 1958, a second phase of development policies began and a new goal was attributed to the *Cassa per il Mezzogiorno* - the industrialisation of the region. The idea was that, having created the preconditions for development, a direct stimulus for manufacturing was needed. A new system of incentives for industrial investment was introduced, including a capital contribution to the investment of small and medium sized firms (extended in 1959 to all firms). Infrastructure policy also

3) For example Rossi-Doria (1982) made a famous distinction between the "bone" and the "meat". See also Bottazzi (1990).

The idea was that a direct stimulus for manufacturing was needed. State-owned companies were explicitly given this goal.

changed. The effort was also devoted to the creation of industrial parks. By 1962, some 25 such areas had been opened (Wolleb and Wolleb, 1990, p. 253). Moreover, state-owned firms, the *Partecipazioni Statali*, had to locate 40% (4) of their total investment and 60% of their new plants in the Mezzogiorno. These companies (5) were seen as "national champions", with the mission of endowing the Mezzogiorno with larger, more capital-intensive and technologically advanced factories. It was hoped that these would then act as growth poles for the whole economy, along the lines described by Perroux (1955). Thus, these state-owned companies were explicitly given the goal of pursuing "national utility" over and above their own profits (6). Their political and economic role involved a close control by government in investment decisions.

In addition, industrial investments in the South were also favoured by labour cost advantages. In the 1950s and 1960s, labour costs were substantially lower in the Mezzogiorno (around 55% of the Centre-North in 1951). The wage differential was 10% larger than the productivity differential, so that Mezzogiorno also offered lower unit labour costs. National wage agreements during that period explicitly included different wage levels for southern regions (the so-called *Gabbie salariali*). In the 1960s, both wage and productivity differentials vis-à-vis the Centre-North declined, but a cost advantage remained: at the beginning of the 1970s wages were around 70% of the Centre-North average, while productivity was around 80% (Siracusano *et al.*, 1986).

A large wave of manufacturing investments consequently reached the Mezzogiorno. Some were made by private firms, both Italian and foreign, but the role of public sector firms was particularly important (7). A census in 1977 of all manufacturing plants in the Mezzogiorno with more than 10 employees reported for instance a total employment of 518 000 (Cesan, 1978). Locally-owned firms accounted for 46% of employment, public sector companies for a substantial 28%, and non-local private firms for 26% (of which 7% foreign). However, the location of state-owned companies was strongly biased in favour of Campania, the region of Naples.

New industries were introduced into the area. As a result, employment in agriculture went down from 3.8 million in 1951 to 1.7 million in 1974, but grew substantially in all non-agricultural sectors, and especially in manufacturing (from 0.5 million to 1 million), construction (from 0.4 million to 0.7 million) and market services (from 1 million to 1.5 million).

These investments significantly changed the structure of the manufacturing sector. As transport costs declined and the national market became integrated, industries oriented to local demand, organised mostly on small artisanal production, were largely displaced by imports of industrialised products from the Centre-North (Faini, 1983). For example, the food industry accounted for one-third of southern manufacturing employment in 1951, but only for one-sixth in 1971.

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4) This fraction applied after 1964; in 1957-64 the share was 20% (Podbielski, 1978, page 49). Moreover, 20% of all government purchases were reserved for southern firms.

5) The state-owned companies were the following: IRI (a conglomerate born after the banking crisis of the 1930s) and ENI (founded soon after WWII to secure oil procurement). Between 1958 and 1962 three more were founded: Egam (mining), Eagat (thermal resort) and Efim (engineering and railway materials, but subsequently a broader conglomerate).

6) See Barca and Trento (1997).

7) One has to remember that the role of the Partecipazioni Statali *was very large in the whole Italian economy. In the mid-1970s the Mezzogiorno represented only around one fourth of total* Partecipazioni Statali *employment. A history of the* Partecipazioni Statali *is given in Barca and Trento (1997).*

The net impact on the labour market was, however, mixed, and the all time low unemployment rate in 1963 (around 4%), was due to the massive migration of population rather than to job creation. Between 1952 and 1961, some 2 million people left the Mezzogiorno (45% to the Centre-North and 55% abroad). After the mid-1960s, total employment increased slightly, but labour force was also increasing due to a higher participation rate. Unemployment reached 9% in the mid-1970s despite the continuing migratory outflow (Siracusano *et al.*, 1986, Figure 1.3b). Another 2.2 million people left the region between 1962 and 1974 (three-quarters to the Centre-North, especially to the cities of the Italian "industrial triangle" such as Turin, Milan, Genoa).

Nonetheless, the Mezzogiorno was catching up. Per capita income went from one-half that of the Centre-North in 1950 to 60% in 1974 (8), and this happened in a period in which Italian per capita income increased at a rate of about 3.5% per year. The southern investment to GDP ratio went up from 21% in 1950 to around 30% in 1973-74 (9). Social transformation was also massive; peasants and farmers were 55% of the southern population in 1951, but only 19% in 1983, while the share of urban middle classes went up from 22 to 45% (Sylos and Labini, 1985, Table 4).

Industrialisation was very distorted towards capital-intensive industries, and large state-owned firms had acquired a key strategic role.

In spite of this success, the industrial development in the Mezzogiorno was smaller than the government had hoped for. It had overemphasised the potential of industrial mobility among Italian regions (Siracusano *et al.*, 1986). Industrialisation was also very distorted towards primary, capital-intensive industries and to some mechanical engineering, with a consequent influence on the size distribution of plants. Large state-owned firms had acquired a key strategic role. This would prove very important in the subsequent period.

2.2 From 1974 to 1992: After the first oil shock

Things changed in the mid-1970s. The economic recession after the first oil shock hit Italy severely. The crisis had a clear impact on development priorities, giving northern industry the first place on the political agenda. If some 54% of all Italian industrial incentives went to the Mezzogiorno from 1971 to 1979, the Centre-North received 63% of the total over the period from 1980 to 1987 (La Noce, 1989).

Gross fixed investment in industry, that had been soaring at more than 11% per year between 1952 and 1974, decreased at a 15% yearly rate between 1975 and 1978. The overall investment to GDP ratio in the Mezzogiorno went down from around 30% in 1973-74 to 20% in 1984 and never returned to previous levels. Moreover, some of the industries developed in the South went into deep trouble: higher energy prices lowered the competitiveness in the chemical and metallurgy industries, most of which had been located in southern regions. The public sector took the role of rescuing troubled companies in order to prevent their bankruptcy and the subsequent loss of jobs. For example, huge investments made in the Mezzogiorno by private firms such as SIR and Liquichimica (chemicals) proved to be non-profitable; and their plants were taken over by ENI. After 1971, IRI and ENI reported large losses and their indebtedness increased substantially.

8) Siracusano et al., *1986, Figure 1.1. The authors also note, quite interestingly, that the income difference was fluctuating cyclically, being larger in peaks (because manufacturing was concentrated in the North) and smaller in troughs.*
9) Investment (in ITL of 1973) per employee in 1961 was 593 000 in the Mezzogiorno and 825 000 in the Centre-North. By 1971, these figures were 1 636 000 for the Mezzogiorno and 804 000 for the Centre-North (Siracusano et al., *1986).*

As a result the connection between the public sector (the *Partecipazioni Statali*) and political parties became very close (Barca and Trento, 1997). To quote Sylos-Labini, 1985, p.20: "*The worst feature of the system was the rising collusion between administrative and political power on the one side and enterprises supplying goods and services to the state via public procurement on the other side. This rising collusion, not rarely mixed with corruption, brought not only a worsening of political and civil life but also a waste of resources (...). This was the main problem of public policy in the Mezzogiorno*". Also, infrastructure expenditure became progressively less dictated by technical considerations and more by local political necessities.

Public spending fuelled employment, but wages began to be unresponsive to productivity differentials.

Public spending fuelled employment, either directly (public institutions) or indirectly (via an income effect on the demand for non-tradable local services). For example, it has been estimated that the increase in public employment between 1970 and 1989 represented almost two-thirds of the total increase of employment in the South (Bodo and Viesti, 1997). The labour market was deeply influenced by this, and wages began to be unresponsive to productivity differentials. At the beginning of the 1980s, the Mezzogiorno lost its unit cost advantage with respect to the rest of the country (Siracusano *et al.*, 1986). This created no problem for public employment and for sectors with no inter-regional competition, but it was a major obstacle for the development of both private manufacturing and competitive services.

To compensate for this trend a new policy had already started in 1968. Labour costs in the Mezzogiorno were reduced through credits for social contributions (the so called *fiscalizzazione degli oneri sociali*). These *fiscalizzazione* became a major part of the financial flows towards the Mezzogiorno: while they represented 31% of all public expenses for the industrialisation of the Mezzogiorno in 1973, the share had gone up to 78% by 1984 (Siracusano *et al.*, 1986). The result was that most funds were used to defend the jobs of the existing workforce rather than to create new employment.

After the first oil shock, migration also ceased. Only some 200 000 people left the Mezzogiorno between 1975 and 1984 - these flows went essentially to zero after the mid-1980s. Because employment continued to increase less than the labour force, which also grew due to the increased participation of women, the unemployment rate reached 20% at the end of the 1980s.

Thus, for close to two decades the public policy response to the problems of the Mezzogiorno was mostly based on increasing current public spending. This was in line with national policies: throughout the country, public employment boomed, welfare payments increased rapidly, and public debt soared. Rather than creating the condition for an autonomous, market-oriented, development, a large part of the southern economy essentially became dependent on public resources (Trigilia, 1992, and Bodo and Viesti, 1997).

Again, not all the Mezzogiorno experienced the same. Some areas attracted inward investment and industrial development was sustained. In other areas, clusters of locally-owned firms developed, both in manufacturing and in tourism. The regions and provinces that were able to take off with a development process represented, however, a minor part (around 25%) of the whole region (Bodo and Viesti, 1997).

2.3 After 1992: Maastricht and fiscal prudence

Respect of the Maastricht Treaty dramatically changed Italian fiscal policy. The reduction of public funds led to stagnation in the Mezzogiorno.

The whole scenario altered in the early 1990s. Respect of the Maastricht Treaty dramatically changed Italian fiscal policy, and many public companies were privatised. Development policy was restructured as well. The *Cassa per il Mezzogiorno* was suppressed in 1992 and the complete set of policy instruments for regional development was re-designed. For example, incentives for new investments in the Mezzogiorno were substituted by a new scheme covering all "depressed areas" of the country.

The resulting significant reduction in public spending led to a stagnation of the economy of the Mezzogiorno, with an average annual growth rate from 1993 to 1996 of only 0.3%. Because population growth in some regions in the Mezzogiorno exceeded this rate, their per capita income gap relative to the rest of Italy even increased (see Table 2). The cuts in public investment spending also made the investment rate very weak. In 1997, gross fixed investment accounted for only 16.6% of southern GDP, against 21.2% in 1992 (see Figure 1). In the 1980s the investment to GDP ratio had never dropped below 21%.

Labour market performance in the Mezzogiorno continued to deteriorate through the 1990s: between 1993 and 1996, some 330 000 jobs were lost. Even with a labour force participation rate that was 12 percentage points lower than the European average, unemployment was twice the European average.

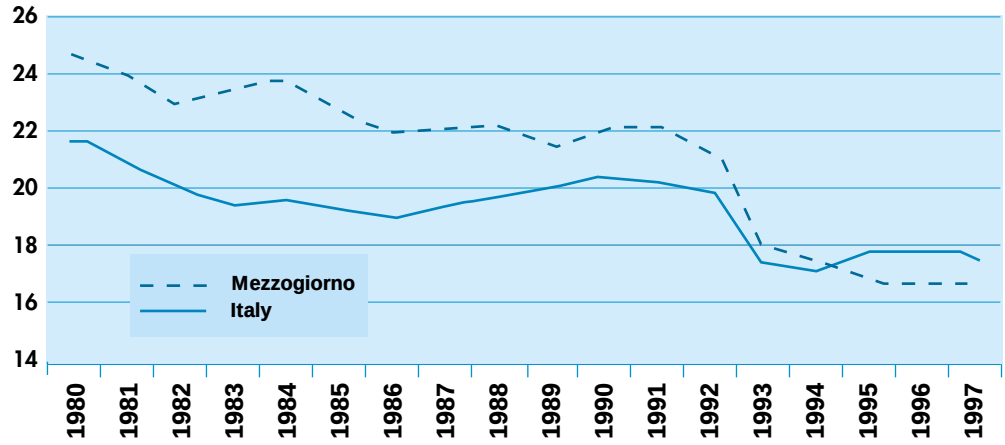
Table 2. GDP per capita, in purchasing power parity

	Average 1988-90 EU-15=100	Average 1994-96 EU-15=100	
Abruzzo	89	90	↑
Molise	79	77	↓
Campania	69	66	↓
Puglia	74	71	↓
Basilicata	64	68	↑
Calabira	58	59	↑
Sicily	67	66	↓
Sardinia	74	74	=
Italy	102	102	=

Source: Eurostat

Fortunately not all the changes in the period were for the worse. Positive signals came from exports which increased from about 5% of the Mezzogiorno GDP in 1992 to over 8% in 1997 (or a doubling of the total value of exports). This strong increase was matched by an important change in export structure. In particular, Mezzogiorno export growth was associated with a significant increase in consumer goods (clothing, footwear, furniture, mainly produced by companies concentrated in some industrial districts) and in the mechanical and transport equipment sectors, i.e. in many of the sectors where there has been success in the North. Internal differences increased significantly, with some areas signalling new positive trends, and others lagging behind.

Figure 1. Gross fixed investment as a percentage of GDP



Source: Istat

3. The performance of Abruzzo and Sicily

The choice of a winning region is straightfoward: Abruzzo has been the fastest growing Italian region. Although not the worst Italian region, Sicily highlights many of the key features of a typical southern performance.

In fact, we have already noted that diversity has existed in the Mezzogiorno for decades. In this section we explore these different performance records in more detail with two case studies. The choice of a winning region to highlight this diversity is relatively straightforward: Abruzzo has been the fastest growing Italian region, with an average annual growth of GDP of 4.3% from 1970 to 1995. In fact, it was the first region in the European Union to lose its "Objective 1" status (i.e. an administrative term used for regions with a per capita income lower than 75% of the EU average), despite starting off from a very low position. Although not the worst Italian region, we have chosen Sicily to illustrate poor performance. It recorded an average annual growth of GDP of 3.0% from 1970-95, close to the average for the Mezzogiorno. Indeed, Sicily highlights many of the key features of a typical southern performance.

More detail of the two regions are given in Boxes 1 and 2.

3.1 Diverging performances

Just how differently did these two regions perform? Figure 2 illustrates the growth rates of GDP in Abruzzo and Sicily, as compared to the average of the Mezzogiorno and of the Centre-North. In the 1960s, Sicily was doing even better than Abruzzo, and was catching up with the rest of Italy. However, over the following three decades, the performance of Sicily has steadily worsened. In 1951, Abruzzo's per capita income was 53% of the northern Italian one, while Sicily's was 56%. In 1971 this percentage had become 65% for Abruzzo, and 61% for Sicily. In 1994, while Abruzzo had grown to a respectable 76% of the average northern Italian per capita income, Sicily had regressed to only 58%.

An important difference is that the employment rate has grown much more in Abruzzo than in Sicily. Figure 3 clearly shows that the percentage of the population that is in work in Abruzzo converges towards the average northern level, while the figure for Sicily is stuck at the average southern Italian level. This implies that in spite of a similar level of labour productivity between the two regions

Box 1. Abruzzo

Abruzzo is the northernmost region in the Italian Mezzogiorno. It shares borders with Lazio (to the west), Marche (to the north) and Molise (to the south). Its eastern border is the Adriatic sea. The coastal area is plain while its central and western areas are mountainous. Some 30% of its whole area is a wilderness, protected as a national park. It is connected via motorways running along the eastern seaboard, and across the country to the rest of Italy. There are no major urban areas.

Area: 10 794 km^2
Population: 1 249 054 inhabitants
Population density: 115.7 inhabitants per km^2
Largest cities : 1. Pescara (246 155 inhabitants); 2. L'Aquila (156 565 inhabitants);
3. Teramo (111 953 inhabitants).

Abruzzo has the highest per capita GDP among the Italian Mezzogiorno regions, and it has consistently been the best performing region in income per capita growth in Italy for almost three decades. In 1996 it recorded a per capita income of 20 973 euro (in PPS terms), i.e. about 10% lower than Italy's average standard of living.

In addition, Abruzzo has the highest participation rate in the Italian Mezzogiorno, and an unemployment rate that is close to the national average. Migration rates are, as in the rest of Italy, very low. Although the region has a share of agricultural employment that exceeds the Italian average, this share is converging towards the mean. The manufacturing sector is not extremely specialised, and includes mechanical products and some fashion industries.

Average growth rate of real per capita GDP: 1% (1990-1996)
Agriculture: 8.9% of total employment (1997)
Industry: 32.5% of total employment (1997)
Services: 58.7% of total employment (1997)

Participation rate: 45% (1999) (men: 59%, women: 32.1%)
Unemployment rate: 9.5% (1998)

Educational attainment of population aged 25-29 (1997): less than high school degree 55%; with a high school degree 35%; with a college degree 9%.

throughout much of the 1950-1990 period (see Figure 4), the per capita GDP of Abruzzo has been diverging from that of Sicily (see Figure 5).

The success of Abruzzo has been based on putting a greater share of its population to work.

Thus, the success of Abruzzo has been based on putting a greater share of its population to work. Box 3 shows that this is mainly due to job creation rather than demographics. Indeed, over the considered time span (1970-90) there has actually been net migration into Abruzzo, putting further pressure on the job market. Conversely, in Sicily emigration has contributed one-third of the modest increase in the employment rate (10).

10) Figure 2 shows that this was a period of relatively stable trends in the employment rate.

Box 2. Sicily

Sicily is an island at the southernmost tip of the Italian peninsula. It has coastal plains, with a major mountain (the volcano Etna) in the area of Catania. It is endowed with a wealth of historical and archaeological sites and has many beaches. Its main connection with the mainland is by ferry across the Straits of Messina.

Surface: 25 706 km^2
Population: 4 966 386 inhabitants
Population density: 193.19 inhabitants per km^2
Largest cities: 1. Palermo (818 356); 2. Catania (608 249); 3. Messina (236 183)

Per capita GDP in Sicily is the third lowest in Italy (only Calabria and Campania performed worse in 1996), and it has been stagnating for most of the last two decades. GDP per capita stood at 15 399 euro in 1996 (in PPS terms), implying that the standard of living in Sicily was roughly 25% lower than the one achieved in Abruzzo, and approximately 35% lower than the average Italian one.

Sicily still has a large share of employment in the agricultural sector. The manufacturing sector is not very dynamic nor developed, and is very specialised in industries characterised by large sunk costs, such as ship-building and petrochemicals. The service sector is predominantly made of personal and public services.

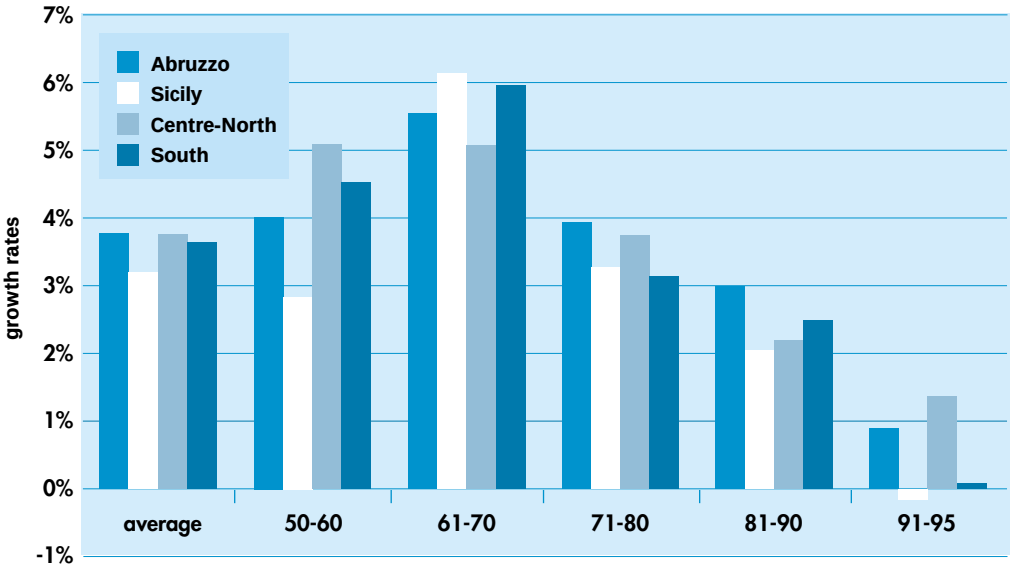
Average growth rate of real per capita GDP: 0.1% (1990-1996)
Agriculture: 12% of total employment (1997)
Industry: 20.1% of total employment (1997)
Services: 67.9% of total employment (1997)

The participation rate in Sicily is very low, especially among women. The unemployment rate is among the highest in Italy and Europe. There is still a tendency towards positive out-migration.

Participation rate: 41.9% (1999) (men: 60.6%, women: 24.9%)
Unemployment rate: 25.6% (1998)

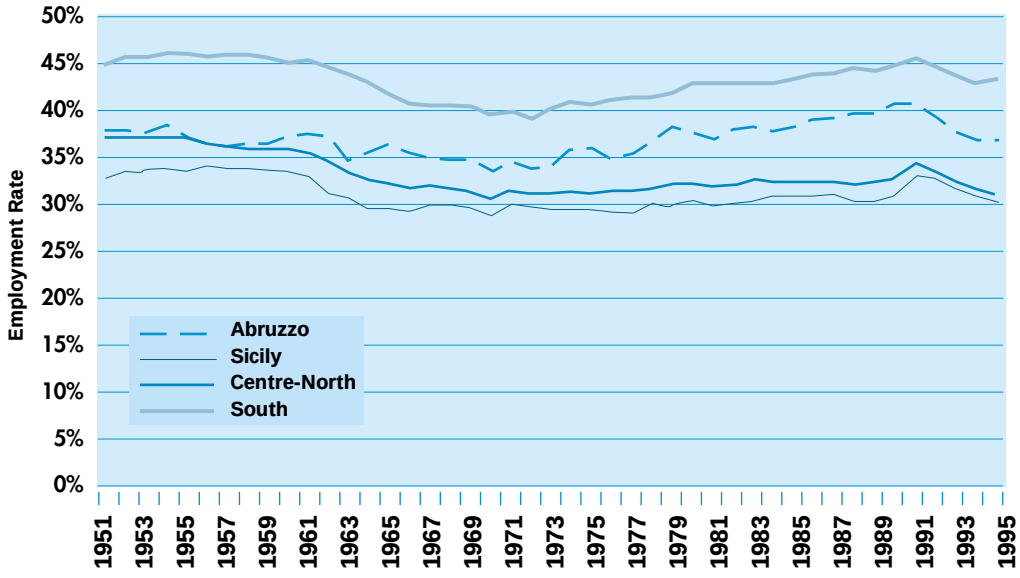
Educational attainment of population aged 25-29 (1997): less than high school degree: 64%; with a high school degree: 28%; with a college degree: 8%.

Figure 2. GDP growth rates



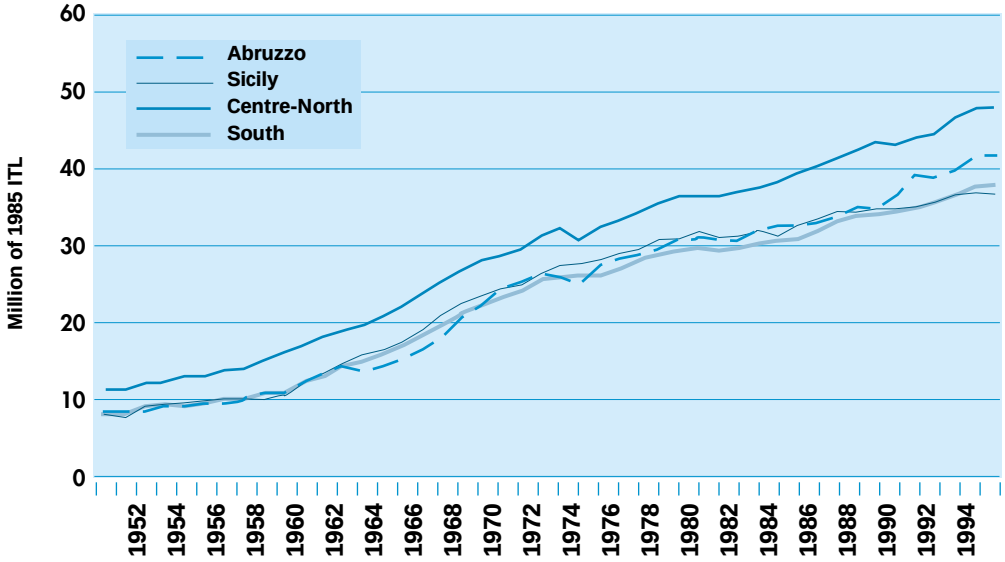
Source: calculations by the authors based on data from Istat, *Conti economici Regionali* and *Annuario statistico Italiano*, various years, and Tagliacarne (1999).

Figure 3. The employment rate



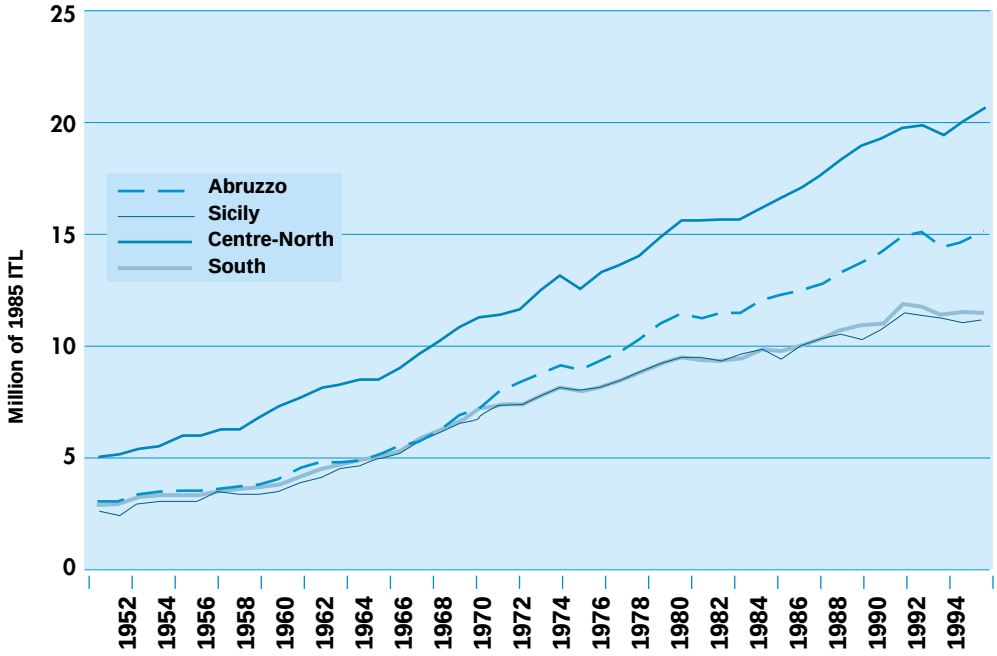
Source: calculations by the authors based on data from Istat, *Conti economici Regionali* and *Annuario statistico Italiano*, various years, and Tagliacarne (1999).

Figure 4. GDP per worker



Source: calculations by the authors based on data from Istat, *Conti economici Regionali* and *Annuario statistico Italiano*, various years, and Tagliacarne (1999).

Figure 5. GDP per capita



Source: calculations by the authors based on data from Istat, *Conti economici Regionali* and *Annuario statistico Italiano*, various years, and Tagliacarne (1999).

Table 3 shows the sectoral composition of employment in the two regions in 1997. Employment growth in Abruzzo has been mainly due to employment in services, but the industrial sector has also made a significant contribution. In Sicily, industry was severely effected in the 1980s and 1990s, and employment in that sector has shrunk. This has been compensated with a large shift to employment in services. In particular, the public administration (non-market services) in Sicily has been an important source of new jobs. Box 3 shows this decomposition in more detail.

Table 3. Employment shares by sector, percentage, 1997

	Agriculture	Industry	Services
Abruzzo	8.9	32.5	58.7
Sicily	12.0	20.1	67.9
Italy	6.5	31.7	61.8

Source: EC (1999).

Sicily has not been able to generate sufficient employment in competitive sectors.

In short, this broad overview tells a rather clear cut story about the two case study regions. Abruzzo, an excellent performer in GDP growth relative to the other Italian regions, has enjoyed a strong industrial sector and a very good performance of its employment growth. Sicily, on the contrary, after promising performance in the 1960s, has not been able to generate sufficient employment in competitive sectors.

3.2 Growth accounting

It is natural to ask what are the factors behind the relative growth of competitive sectors. Relying on the well known techniques of growth accounting we will decompose the growth in productivity per worker in these sectors into the contribution of investment and of technological change (total factor productivity growth, TFPG). The decomposition is as follows:

$$\ln\left(\frac{Q_t}{L_t}\right) - \ln\left(\frac{Q_{t-1}}{L_{t-1}}\right) = \theta_K\left[\ln\left(\frac{K_t}{L_t}\right) - \ln\left(\frac{K_{t-1}}{L_{t-1}}\right)\right] + TFPG_{t-1,\,t}$$

where Q_t is aggregate value added in a particular sector in year t, K_t is the aggregate physical capital input, L_t is the aggregate labour input, and $TFPG_{t-1,\,t}$ is total factor productivity growth. Consequently, Q/L denotes labour productivity while K/L is the capital-labour ratio, and the differences in their logs are equivalent to their rates of growth. The weighting coefficient, θ_k, is the average share of capital in sector i.

Let us first note, however, that in aggregate terms there is not a large difference in investment rates in Abruzzo and Sicily (see Table 4). After 1970, Abruzzo maintains an aggregate investment rate slightly above the southern average, while Sicily falls slightly below this figure.

Table 4. Investment as a percentage of GDP

Period	Abruzzo	Sicily	Centre-North	South
1960-1970	29%	29%	27%	32%
1971-1980	32%	30%	22%	31%
1981-1993	25%	23%	20%	24%

Box 3. Decomposing growth and employment generation

Job creation versus demographics and migration

The increase in the employment rate in a region could be due to three components: employment may have increased, or the population may have decreased due to natural demographics, or there may have been out-migration. The contribution of each of these components can be decomposed as follows:

$$\frac{\Delta(E/Pop)}{E/Pop} \cong \frac{\Delta E}{E} - \frac{\Delta Pop_{demo}}{Pop} + \frac{NetOutMigration}{Pop}$$

where E is employment, Pop is total population, ΔPop_{demo} is the variation of population due to demographic factors, and "net out migration" is the net contribution of migration. Applying this formula to data for the period from 1970 to 1990 we get the following results:

	Yearly employment growth		contribution of job growth	contribution of demographics	contribution of migration
Abruzzo	1.0%	=	1.2%	-0.1%	-0.1%
Sicily	0.3%	=	0.6%	-0.4%	+0.1%

This shows that the employment rate has grown much faster in Abruzzo than in Sicily, though part of the explanation is that demographic pressures have been greater in Sicily. However, while outward migration (+) from Sicily has contributed positively to the employment ratio of that region, there has actually been migration (-) into Abruzzo.

Sectoral shifts

Which sectors have been at the source of employment growth? This can also be decomposed into the contribution from agriculture, industry, market services, and non-market services. The formula is as follows:

$$g^Y = sh_{Agr}\, g^Y_{Agr} + sh_{Ind}\, g^Y_{Ind} + sh_{MS}\, g^Y_{MS} + sh_{NMS}\, g^Y_{NMS}$$

where g^Y is the total regional growth rate of employment, g^Y_i is the growth rate of employment in sector i, and sh_i is the share of that sector in total regional employment. Clearly, a sector may also give a negative contribution if its employment has decreased. The results of this exercise with data from 1950 to 1993 are:

	Yearly employment growth (1950-93)		contribution of agriculture	contribution of industry	contribution of market services	contribution of non-market services
Abruzzo	0.2%	=	-0.80%	+0.16%	+0.65%	+0.19 %
Sicily	0.07%	=	-0.48%	- 0.04%	+0.46%	+0.13 %

A similar exercise, decomposing of the growth rate of total GDP into the contribution from each sector, yields:

	Yearly GDP growth (1960-93)		contribution of agriculture	contribution of industry	contribution of market services	contribution of non-market services
Abruzzo	4.1%	=	+0.12%	+1.40%	+2.09%	+0.49%
Sicily	3.9%	=	+0.28%	+0.78%	+2.10%	+0.74%

Thus, both regions show substantial job destruction in agriculture. The major difference comes from the role of the industrial sector versus non-market services in creating alternative jobs and growth. In Abruzzo the industrial sector is an important contributor to growth (one-third of the growth of GDP) and has provided significant new jobs. Non-market services have given a much smaller contribution to growth (11% of total growth) and has not created more jobs than the industrial sector. On the other hand, the industrial sector in Sicily has destroyed jobs and provided a much smaller contribution to GDP growth (20% of the total). Non-market services have been an important net creator of jobs and has given a contribution to GDP growth of the same magnitude as the industrial sector.

The results of the growth accounting exercise are given in Tables 5 and 6. Table 5 shows the growth rate in labour productivity in the manufacturing sector, together with the relative contribution of capital and of total factor productivity growth (TFPG). Table 6 shows the same information for market services. Three facts emerge from this analysis:

1) For the manufacturing sector we clearly see that the contribution of capital to labour productivity growth is large in both regions, at between 1.5% and 1.7% per annum from 1970-1994. This is much above the figure seen in more advanced regions. For example, over the same period, the contribution of capital to labour productivity growth is 0.7% per year in Veneto and 0.6% in Lombardia.

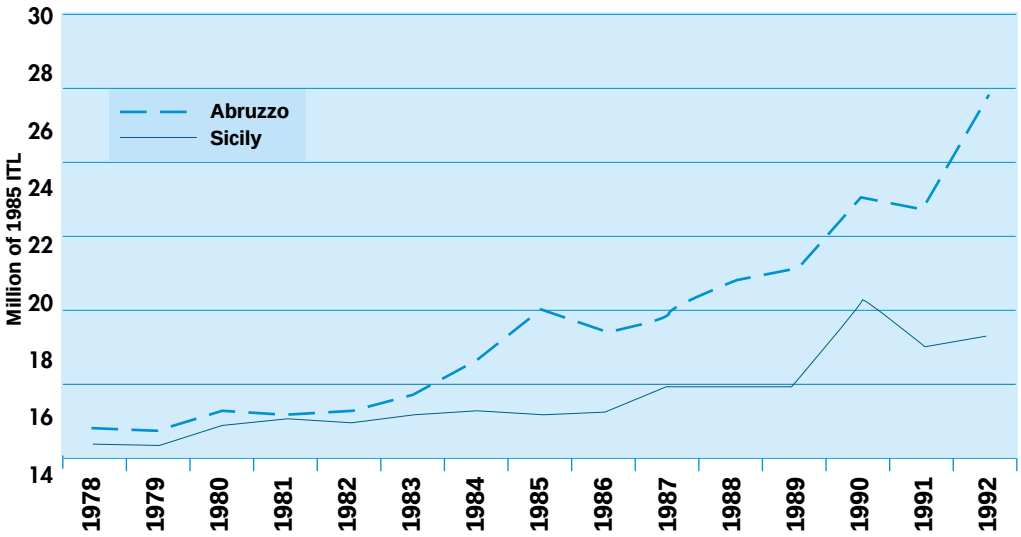
Total factor productivity growth is much larger in Abruzzo than in Sicily.

2) Nevertheless, the role of total factor productivity growth is much larger in Abruzzo than in Sicily. Abruzzo is not only investing capital, but is also improving its technological frontier. However, it still lags regions like Veneto and Lombardia, in which most growth comes from increases in TFP (2.7% a year and 2.6% per year, respectively).

3) Finally, looking at market services, we see a similar picture to that for manufacturing. An important contribution to labour productivity comes from an increase in the capital stock in both regions. However, over time (except for the recession in 1981-85) Abruzzo has been able to offset a decrease in the growth of capital with TFP growth. Sicily has been less able to do this, suffering as a consequence lower growth rates of labour productivity.

The second and third results above are suggestive of the important role that technological progress and enhanced human capital (both captured as TFP in this analysis) may play in the growth of Abruzzo. Figure 6 indeed shows that R&D spending per industrial worker has been increasing much faster in Abruzzo than in Sicily, especially after the mid-1980s. As regards to human capital, in 1997, 35% of the population aged 25-29 in Abruzzo was holding a high school diploma (and 9% graduated from college), compared with only 28% in the same Sicilian age-group (8% for college graduation).

Figure 6. Spending on research and development per industrial worker



Source: Istat, *Conti economici Regionali* and *Annuario statistico Italiano*, various years.

Table 5. The decomposition of the growth of labour productivity in manufacturing

Abruzzo	Average yearly growth of labour productivity	Contribution of capital per worker	Total factor productivity growth
1970-94	2.9%	1.5%	1.4%
1970-75	0.6%	1.1%	-0.5%
1976-80	4.7%	1.1%	3.6%
1981-85	3.7%	2.2%	1.5%
1986-90	1.9%	1.1%	0.7%
1991-94	3.1%	2.0%	1.0%

Sicily	Average yearly growth of labour productivity	Contribution of capital per worker	Total factor productivity growth
1970-94	2.3%	1.7%	0.6%
1970-75	3.1%	2.3%	0.7%
1976-80	1.3%	1.2%	0.1%
1981-85	0.8%	1.7%	-0.9%
1986-90	5.6%	1.9%	3.7%
1991-94	1.1%	0.9%	0.1%

Table 6. The decomposition of the growth of labour productivity in market services

Abruzzo	Average yearly growth of labour productivity in market services	Contribution of capital per worker	Total factor productivity growth
1970-94	2.0%	1.0%	1.0%
1970-75	2.2%	1.2%	1.0%
1976-80	2.9%	1.0%	1.9%
1981-85	-0.2%	1.4%	-1.6%
1986-90	4.2%	0.8%	2.4%
1991-93	2.6%	0.5%	2.1%

Sicily	Average yearly growth of labour productivity in market services	Contribution of capital per worker	Total factor productivity growth
1970-94	1.6%	1.0%	0.6%
1970-75	2.4%	1.7%	0.7%
1976-80	2.9%	0.9%	1.9%
1981-85	-1.1%	0.8%	-0.2%
1986-90	2.5%	0.7%	1.8%
1991-93	1.1%	0.5%	0.6%

3.3 The evolution of production structures

The lack of technological progress in Sicily is also suggested by economic structures.

The lack of technological progress in Sicily is also suggested by economic structures. The detailed distribution of employment for the two regions is reported in Tables 7 and 8. Abruzzo turns out to be more similar to the Italian average than Sicily. This is captured by the higher rank correlation between the employment structure in Abruzzo and Italy (0.94), than between Sicily and Italy (0.86) (11).

The higher specialisation of the production structure in Sicily can be observed in Table 8 where a single sector (retail distribution) accounts for 23% of total employment. Two other non-industrial sectors have shares higher than 10% (building and civil engineering: 13%, and transport services: 11%). In fact the construction industry is one of the few sectors to show growth in employment share over the last few decades. While the retail distribution sector is also the largest in Abruzzo (16% of employment), it has been steadily declining in importance since the 1960s. Conversely, the employment share of mechanical industry has passed from 5% in 1951 to 15% in 1991.

A notable feature in Sicily is the decline in importance of food, beverages and tobacco (from 11% to under 5%), footwear and clothing (from 8% to under 2%), and wood and furniture (from 6% to 2%). These are sectors (sometimes called *Made in Italy* products) where there has been international specialisation in Italy (see, for example, Iapadre, 1996, and Brasili *et al.*,1999). Thus, Sicily appears weak in those sectors where Italy is normally strong.

11) The Spearman rank correlation coefficient has been computed on the basis of the 33 sectors that represent the lowest level of aggregation in the tables.

This is also reflected in the exports from Italy that originate in each region. In 1998, Abruzzo accounted for 2% of total Italian merchandise exports and Sicily for 1.6%. However, during the 1990s, Abruzzo's share has increased (from 1.3% to 1.9%) while that of Sicily has declined (from 1.9% to 1.6%). At a more detailed level, Abruzzo accounts for approximately 7.5% of Italian car exports, 3% of other transport equipment, 2.8% of plastic and rubber products, and 2.6% of precision machinery exports. Sicily's contribution to Italian exports is concentrated in the transformation of natural resources, and it has a share of more than 45% of Italian exports of refined petroleum products. Its share of manufactured exports products is relatively limited: it generates 2% of car exports, 5% of exports of other transport equipment, and 2% of the exports of chemicals products. Clearly, this bias is mainly the result of investment by publicly-owned companies in the region.

To sum up, Abruzzo has been able to create more jobs in the industrial sector and in market services through generating steady productivity improvements. This ability, due at least in part to increasing schooling, has constituted the foundation for a sustained period of growth. Sicily, on the other hand, although with similar initial conditions, has not been able to develop a diversified, private base of the economy. It has relied on giving workers more and more capital in selected sectors to support growth.

4. Regional policies in Abruzzo and Sicily

How did this come about? First one has to disregard the suggestion that initial conditions were some how different. In the early 1950s, Abruzzo was, like Sicily, a "full member" of the underdeveloped Mezzogiorno. It had few natural resources, no large cities, and poor transport infrastructure. GDP per capita was low (essentially the same as Sicily's), agriculture was poor (the territory of the region is mostly covered with mountains), but accounted for a very large share of employment. In brief, there were no basic differences in development between the two regions.

Differences in performance emerged in the 1970s. What happens after appears as a continuation of the trend started in that decade. Three main factors appear to have been key for the economic development of Abruzzo:

1) There were inflows of investment, paralleled by the development of clusters of local firms (12).

2) Infrastructure was able to increase overall productivity of manufacturing through significantly reducing transport costs.

3) Better performing social institutions seem to have been important.

Let us consider each of these in turn.

4.1 Industrial development

Investment incentives appear to have been more successful in Abruzzo than in Sicily.

Our data show that the development of a competitive and dynamic manufacturing industry is at the heart of the regional development of Abruzzo. Investment incentives appear to have been more successful in supporting this in Abruzzo than in Sicily. For example, in the 1970s payments to Abruzzo in terms of incentives per head of population were 55% more than Mezzogiorno average, while in Sicily they were 43% smaller (Malfatti, 1987, Table 2). Moreover, investments in Abruzzo covered a larger range of industries than in Sicily, spanning mechanical engineering, *Made in Italy*

12) See Mutti (1994), page 452; Felice (1996); Costantini and Felice (2000).

consumer goods and building materials (13). Table 9 shows the distribution of investment benefiting from incentives by region. From 1987 to 1990, almost one third of this investment in the Mezzogiorno went to Abruzzo.

Table 7. Employment by sector in Abruzzo, percentage of total

	1951	1961	1971	1981	1991
Food and beverages	11.5	6.5	4.6	3.9	5.4
Tobacco	1.6	0.2	0.4	0.2	0.3
Leatherand leathergoods industries	0.1	0.1	0.8	1.2	1.4
Textiles	1.9	1.7	1.5	1.5	1 6
Footwear and clothing	9.5	7.6	7.4	8.2	9.1
° Clothing	na	5.8	6.5	7.4	8.2
° Footwear	na	1.8	1.0	0.8	0.9
Wood and furniture	5.6	4.8	3.9	3.2	2 7
Paper, printing and publishing	0.8	1.5	1.2	1.5	1.8
Photographic and cinematographic laboratories	0.2	0.2	0.2	0.2	0.1
Manufacture of metal articles	0.0	0.2	0.5	0.7	0.7
Mechanical industry	5.0	5.6	8.8	13.4	14.8
° Non-electrical machinery	na	1.0	1.8	3.1	4.6
° Electrical machinery	na	0.1	2.6	4.2	3.5
° Instrument engineering, office machinery	na	0.1	0.1	0.3	0.7
° Repairs of mechanical goods	na	4.2	4.1	3.8	3.2
° Manufacture of means of transport	na	0.3	0.3	1.9	2.8
Manufacture of non-metallic mineral products	4.2	5.6	6.2	4.9	3.8
Petrochemical industry	1.7	0.9	1.1	1 3	1.3
° Chemical industry	na	0.9	1.0	1.2	1.1
° Petroleum refining	na	0.0	0.1	0.0	0.1
° Man-made fibres and cellulose for textile	na	0.0	0.0	0.0	0.0
Processing of rubber	0.1	0.2	0.1	0.6	0.4
Processing of plastics and other manufacturing products	0.3	0.7	0.5	1.2	1.3
° Processing of plastics	na	0.0	0.4	0.9	0.7
° Other manufacturing products	na	0.7	0.1	0.4	0.6
Building and civil engineering	13.7	12.3	15.2	13.3	13.2
Production and distribution of eletricity and gas	1.1	1.0	1.4	1.3	1.1
Water supply	0.2	0.3	0.2	0.1	0.0
Wholesale distribution	2.8	4.9	4.1	4.2	3.5
Retail distribution	19.7	25.0	22.4	18.7	15.8
Hotels and catering	5.6	5.2	5.1	5.7	4.9
Transport	6.0	9.3	7.8	7.5	7.5
Banking and finance	1.1	1.1	1.2	1.6	2.1
Insurance	0.1	0.2	0.5	0.6	0.9
Services for firms	1.5	1.3	1.2	1.1	1.9
Recreational services	0.6	0.5	0.3	0.7	0.4
Sanitary services and administration of cemeteries	2.2	2.8	3.3	3.0	3.8
Total	100	100	100	100	100

Source: ISTAT Census. Various years

13) The main inward investments were those of Siemens (electronics) and SIV (glass) in the 1960s; three FIAT plants in the 1970s; Italtel and Texas Instruments in the 1980s (see Mutti, 1994, and Piattoni, 1999).

Table 8. Employment by sector in Sicily, percentage of total

	1951	1961	1971	1981	1991
Food and beverages	10.1	5.9	4.2	3.0	5.4
Tobacco	0.4	0.2	0.1	0.1	0.1
Leather and leather goods industries	0.3	0.1	0.1	0.1	0.1
Textiles	0.6	0.9	1.0	0.7	0.4
Footwear and clothing	8.3	5.8	4.0	2.4	1.4
° Clothing	na	3.6	2.9	1.9	1.2
° Footwear	na	2.2	1.0	0.6	0.2
Wood and furniture	5.5	4.3	3.0	2.6	2.1
Paper, printing and publishing	0.7	0.9	0.9	1.0	1.0
Photographic and cinematographic laboratories	0.2	0.3	0.3	0.3	0.3
Manufacture of metal articles	01	0.1	0.2	0.3	0.3
Mechanical industry	6.1	6.9	9.7	11.7	11.1
° Non-electrical machinery	na	0.7	1.8	2.6	2.9
° Electrical machinery	na	0.4	1.0	1.7	1.3
° Instrument engineering, office machinery	na	0.2	0.2	0.3	0.6
° Repairs of mechanical goods	na	4.4	5.2	5.5	5 3
° Manufacture of means of transport	na	1.3	1.5	1.6	0.9
Manufacture of non-metallic mineral products	2.6	3.7	3.0	2.8	2.5
Petrochemical industry	1.5	2.2	3.4	3.2	2.4
° Chemical industry	na	1.9	2.5	2.0	1.3
° Petroleum refining	na	0.3	0.9	1.1	1 2
° Man-made fibres and cellulose for textile	na	0.0	0.0	0.0	0.0
Processing of rubber	0.0	0.1	0.5	0.4	0.2
Processing of plastics and other manufacturing products	0.1	0.1	0.3	0.5	0.7
Processing of plastics	na	0.0	0.3	0.4	0.4
° Other manufacturing products	na	0.1	0.1	0.1	0.3
Building and civil engineering	7.8	8.9	9.6	10.2	13.2
Production and distribution of eletricity and gas	1.2	1.4	1.8	1.7	1.7
Water supply	0.4	0.5	0.4	0.4	0.4
Wholesale distribution	4.3	3.9	4.4	5.6	5.1
Retail distribution	23.9	27.4	27.0	25.5	23.2
Hotels and catering	4.3	4.8	4.5	5.0	4 9
Transport	9.2	11.8	11.4	11.5	11.0
Banking and finance	2.1	2.5	2.9	3.2	3.9
Insurance	0.1	0.2	0.5	0.7	1.0
Services for firms	2.4	1.9	1.6	1.9	2.5
Recreational services	0.9	0.8	0.6	1.3	0.6
Sanitary services and administration of cemeteries	4.4	4.4	4.5	3.9	4.6
Total	100	100	100	100	100

Source: Istat, Census. Various years

Table 9. Incentive induced investment in manufacturing, yearly average per period in constant 1990 ITL

	Abruzzo	Sicily	Mezzogiorno	Abruzzo as a percentage of the Mezzogiorno
1970-79	328.2	546.2	4235	8
1980-83	340.4	322.2	2209	15
1984-86	318.6	229.8	1857	17
1987-90	1047.0	274.9	3369	31

Source: SVIMEZ, as in Servidio (1992)

The incentives to invest in the Mezzogiorno, coupled with the increased transport costs of going further south, produced a strong concentration of investment close to the northern border of the assisted areas.

Certainly, Abruzzo had an important geographical advantage. The incentives to invest in the Mezzogiorno, coupled with the increased transport costs of going further South, produced a strong concentration of investment close to the northern border of the assisted areas. This is exactly where Abruzzo is located. Importantly, investments from state-owned firms were mainly concentrated in mechanical engineering and telecommunications since the lack of large ports in Abruzzo impeded the building of large petrochemical and steel plants.

So, in the 1960s, when Italian business was rapidly increasing production capacity and investment in the Mezzogiorno was strongly favoured by legislation, Abruzzo proved to be a suitable location for new plants. In the 1970s, labour disputes became widespread in the Northwest, especially in larger factories. Moreover, the demand for *Made in Italy* products became more volatile as a consequence of the oil shocks, creating problems for larger less flexible firms. Economies of scale at the plant level became less relevant. This favoured the relocation and sub-contracting of production, especially from north-western firms. The overall pattern of Italian industrialisation changed, and the development of small and medium sized locally-owned firms in north-eastern and central Italy, often in *Made in Italy* sectors, became much more important. Abruzzo and Puglia were the only regions of the Mezzogiorno to follow this trend. For example, in Abruzzo clothing and furniture firms grew up mostly as subcontractors. They clustered in selected areas, especially along the coast and close to motorways. These new companies replaced a declining textile industry that was producing traditional and poorer quality goods. Thus, the "Adriatic Belt of development", starting from Friuli and Veneto, extended to Abruzzo (Viesti, 2000).

The result was that Abruzzo developed a dualistic industrial structure, with large factories mostly in mechanical engineering, transport equipment and telecommunications, together with small locally owned plants, often subcontractors of northern companies.

As suggested by economic geography models, industrial development reached a critical mass and became self-sustaining. Local clusters of firms developed Marshallian "external economies", via the division of labour, backward and forward linkages, and technological spillovers. New investment was now attracted not only by government incentives, but also by local conditions, such as the skills of the workforce or the availability of subcontractors. This created a cumulative effect, as local incomes grew and fuelled consumption. When Italian public spending increased substantially in the late 1970s and 1980s, Abruzzo reacted differently from most other southern regions - since a local supply industry existed, the increased demand did not simply induce imports from the North.

Investment in Sicily had been heavily biased in favour chemicals and refinery products. These large plants did not induce the development of local subcontractors.

By comparison, the picture of what happened in Sicily looks much like the sketch of the Mezzogiorno presented in Section 2. Investment in Sicily had been heavily biased in favour chemicals and refinery products. As of the mid-1970s, these products represented around one fourth of regional industrial production, and most employment was concentrated in four large plants (Malfatti, 1987). These large plants did not induce the development of local subcontractors (14). Other investments in Sicily were aimed at the local market: private firms found Sicily less attractive as a location for investment for re-exporting also due to its distance from major markets vis-à-vis other southern regions. Local resources, such as the natural and cultural attractions for tourism and agriculture, were rarely exploited. Most local entrepreneurship was either involved with small firms in the food sector or in manufactured products for the construction industry (Busetta-Rosa, 1995; Mazzola and Asmundo, 1999). As of the mid-1980s, there was only one locally-owned firm with more than 500 employees, producing concrete (Malfatti, 1987, Table 1).

The response of local and national government to the crises of the 1970s made things worse. Most policies, especially by state-owned companies, were geared towards defending factories. When the employment situation worsened, public policy directly created thousands of assisted jobs. The inflow of public funds sustained local incomes. However, the increase in demand generated more imports than local production. The construction industry and non-tradable services were the only areas in which production and employment grew. As in most of the Mezzogiorno, one crucial fact was that endogenous industrial development was prevented also by high labour costs. The lack of manufacturing meant there was no development of a business services industry, and services to households became much more important.

The dramatic weakness of Sicilian economy became evident after the change of Italian fiscal policy at the beginning of the 1990s, when Sicily experienced a prolonged period of recession. Some signs of recovery, such as the growth of a semiconductor cluster in Catania (see Russo, 1997), have only just appeared at the end of the decade.

4.2 Infrastructure

The role of physical infrastructure in Abruzzo was crucial. With the help of the *Cassa per il Mezzogiorno* substantial improvements to transport, water and energy infrastructure were made. A motorway connecting Rome with the northern and the central areas of Abruzzo was built, as was the Adriatic motorway, linking south-east Italy with Bologna and the northern motorway network. These motorways were well connected within the region through a dispersed local road network. As a result, transport costs decreased substantially, especially towards Rome and the North. From L'Aquila one can be in the centre of Rome in one hour; from Pescara it takes a little more than one hour to reach Ancona, and three hours to be in Bologna.

But it was not only a matter of transport infrastructure. The first University of Abruzzo was created in L'Aquila in 1952 and three others followed in Pescara, Teramo and Chieti. Similarly, numerous hospitals were built. Abruzzo was fifteenth in the ranking of Italian regions in terms of hospital beds per person in 1954, but ranked third in 1990 (Mutti, 1994, Table 17).

14) An analysis of factors determining the intensity of backward and forward linkages with large firms in Italy is given by Florio and Capriati (1986).

The role of infrastructure in Abruzzo was crucial.

It is very difficult to reconstruct the total financial flows for infrastructure. One needs to sum up the expenditures of the *Cassa per il Mezzogiorno*, of different Ministries, and of a range of public institutions (such as *Anas* for roads or *Enel* for electric power). However, data on total public expenditure per capita continue to show that both Abruzzo and Sicily (and the rest of the South) receive fewer funds than the national average (for example, in 1997 total public spending was ITL 19.2 million per capita in Abruzzo, ITL 17.4 million in Sicily and ITL 22.1 million in Italy on average). Data from the Ministry of Treasury on the composition of public expenditure do, however, hint at different regional priorities. Though data for only one year must be read with caution, the figures in Table 10 are striking. In Abruzzo, capital expenditure represents more than 17% of all public expenditure in 1997, as compared to a Mezzogiorno average of 14%, and to 11% in Sicily.

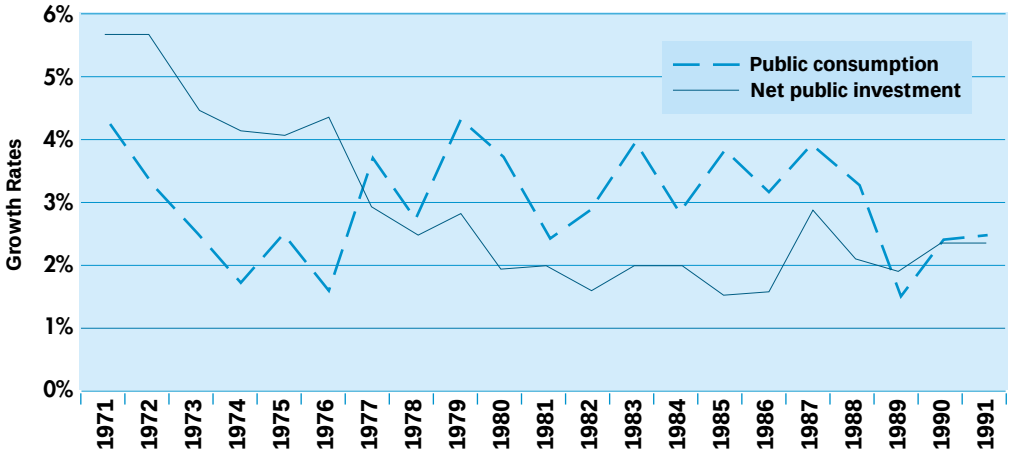
Table 10. Public expenditure, percentage distribution, 1997

	Abruzzo	Sicily	North	Centre	Mezzogiorno	Italy
Public employees	20.7	22.2	20.7	20.9	21.5	21.0
Purchase of goods and services	14.0	16.6	15.5	17.7	15.7	16.0
Transfers	27.9	29.1	30.3	27.0	27.1	28.6
Passive interests	15.8	16.6	17.7	19.4	16.3	17.7
Other	4.2	4.5	5.6	5.2	5.0	5.4
Current expenditure	82.6	89.0	89.8	90.2	85.6	88.6
Capital expenditure	17.4	11.0	10.2	9.8	14.4	11.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ministry of Treasury, unpublished data

Figure 7 clearly shows that the rate of growth of public consumption in Sicily overtook the rate of growth of net public investment in the mid-1970s (15). And from 1977 until 1989 the rate of growth of public consumption was extremely high, at between 3 and 4% in real terms. Figure 8 shows similar data for Abruzzo and the relatively closer movement of public investment and public consumption trends.

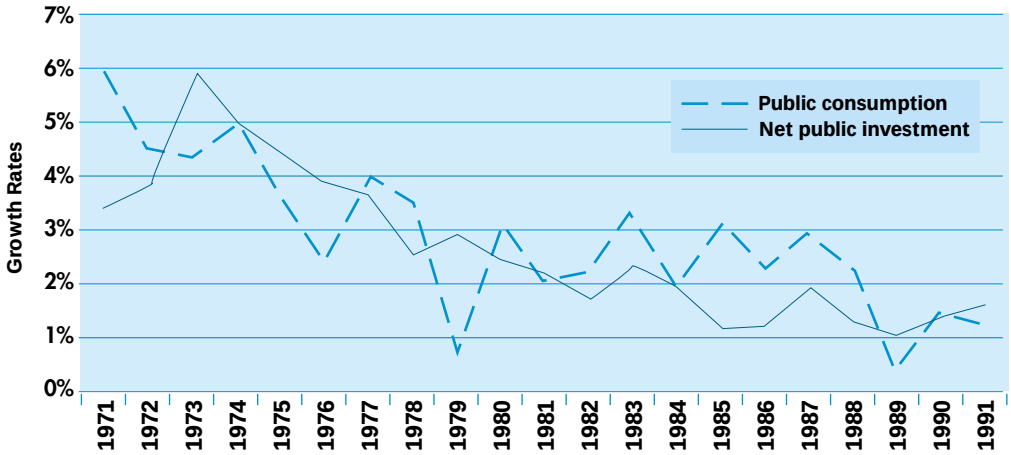
Figure 7. Public consumption and investment, Sicily



Source: Authors' calculation from Istat, *Conti economici regionali, Annuario statistco Italiano,* and *Le regioni in cifre*, various years.

15) Computed as: the change in the gross public capital stock, net of depreciation.

Figure 8. Public consumption and investment, Abruzzo, per annum growth rates



Source: Authors' calculation from Istat, *Conti economici regionali, Annuario statistco Italiano*, and *Le regioni in cifre*, various years.

4.3 Social capital

Social conditions, though often very difficult to measure, are also a basic ingredient for economic development. Institutions and social capital may determine a quite different economic performance for different regions (see North, 1990, and Coleman, 1990). For example, our analysis would seem to suggest better social capital in Abruzzo than in Sicily.

Unfortunately, no discussion of Sicily can avoid a mention of crime and the Mafia.

Unfortunately, no discussion of Sicily can avoid a mention of crime and the Mafia (16). In 1995, the number of murders per 100 000 persons was 7 in Sicily compared with 1.6 in Abruzzo (and the national average of 2.5), though the rates of robbery and theft were more similar (2 129 per 100 000 persons in Sicily and 1 981 in Abruzzo, compared to the national average of 3 190). Reported family violence was again significantly higher in Sicily (6.3 incidents per 100 000 in Sicily, 3.3 in Abruzzo, and 4.0 in Italy on average), suggesting greater social problems and a more violent environment.

While Abruzzo has always been one of the Italian regions with the lowest crime rate, the role of organised crime in Sicily has remained important. With the flow of public resources, organised crime penetrated the construction industry and controlled much public procurement. The Mafia had a role in discouraging private entrepreneurs through extortion and protection rackets.

5. Conclusions

In this essay we have presented the experience of two regions that had initially almost identical economic indicators. Nonetheless, they realised different growth paths: while Abruzzo has managed to catch-up with the Italian average, Sicily has remained a lagging region.

A closer look at both region's development strategies may explain at least part of the puzzle. The forces driving divergence seem largely related to changes in the industrial fabric, the accumulation

16) A history of mafia is provided by Lupo (1993).

of knowledge capital, and misallocation of public funds. In addition, geographic factors may have intensified the process to some extent.

To be more precise, we have documented five major differences in the diverging development of Abruzzo and Sicily after the first oil-shock:

- Employment growth in Abruzzo was primarily realised in the industrial and market service sectors. The development of a dynamic and competitive manufacturing industry played a major role in Abruzzo's success. As a result, this region was able to generate substantial gains in total factor productivity (technological change) so that productivity growth could be translated into more jobs.
- In addition, compared to Sicily, a larger fraction of the Abruzzean work force became skilled, more resources were spent on research and development activities, and the region become attractive for investors due to its network of suppliers. A critical mass was reached and development took on a self-sustaining process.
- Admittedly, Abruzzo had a geographic advantage over Sicily. The incentives provided to invest in the Mezzogiorno, coupled with the increased transportation costs of going further south, produced a strong concentration of investment closer to the northern border of the assisted areas. Consequently, Abruzzo benefited from a border effect, which was not present in Sicily.
- As in most of the Mezzogiorno, investment in Sicily became focused on high capital intensive industries, but these did not lead to the development of locally linked subcontractors. As a result, Sicily was not able to develop a diversified economic fabric. Moreover, the industrial sector in Sicily - which was severely hit by the oil shocks - created less job openings than it destroyed. The public sector (i.e. non-market services and public works) became an institution to absorb the otherwise unemployed.
- In Sicily, most public spending went to consumption rather than investment. In addition, rent seeking activities and crime thrived.

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F R A N C E
EUSKAL HERRIKO
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MURCIA
Huelva
SEVILLA
ANDALUCIA
Cartagena
Granada
Jerez de la Frontera
Malaga
Almeria
Cadiz
0 km 50 km 100 km 200 km 300 km
ALBORAN SEA
ALGERIA
MOROCCO
ATLANTIC OCEAN
ISLAS CANARIAS (E)
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El Aaiun

Economic convergence and regional development strategies in Spain: The case of Galicia and Navarre

Andrés Rodríguez-Pose

1. Introduction

During the Francoist period and the transition to democracy the Spanish economic panorama was dominated by convergence across regions (Suárez-Villa and Cuadrado-Roura 1993; Cuadrado-Roura *et al.*, 1999). Regions in the southern and western Spanish peripheries were catching up with the more developed regions of north-eastern Spain and Madrid. This process of convergence came however to a sudden stop in the late 1970s and early 1980s (Alcaide 1988; Mas *et al.*, 1995; Cuadrado-Roura *et al.*, 1995; Cuadrado-Roura *et al.*, 1999; Villaverde 1999). The slowdown in convergence was not exclusive to Spain. At a European level, several authors have pointed out that a similar exhaustion of the convergence process took place at the beginning of the 1980s (Armstrong 1995; Champion, *et al.*, 1996; Sala-i-Martín 1996; López-Bazo *et al.*, 1999; Rodríguez-Pose 1999).

The slowdown in regional convergence coincides with the oil shocks and with the beginning of the processes of economic restructuring and globalisation. However, in the Spanish case, these global economic processes were also accompanied by a profound political change, which not only implied the transition from a right-wing dictatorship to a fully-fledged democratic system, but also the passage from a centralised to a decentralised state. The transformation of Spain into a regionalised state in the early 1980s has had an important impact on the institutional framework behind policy-making.

In this paper, I will try to analyse the factors behind the lack of relative convergence in Spain since the early 1980s by focusing on two regions which have had different economic trajectories in the last two decades: Navarre, a region which, despite being located in the declining northern Spanish fringe, has managed to grow at a slightly higher pace than the rest of Spain; and Galicia, one of the regions which has undergone a relative decline since the beginning of the 1980s.

The paper is structured in four further Sections. The next section deals with the economic performance of Spanish regions since 1980, focusing specially on the problem of lack of regional convergence in recent years. Section 3 includes the reasons behind the selection of the two case studies, despite the fact that neither Navarre is the most dynamic, nor Galicia is the least dynamic region in Spain, as well as a description of the changing structure of the economies of the two regions. The fourth Section deals with the existing institutional framework for designing and implementing regional development policies in these regions, and with the assistance programmes actually implemented at the regional, national and EU levels. This is followed in Section 5 by a discussion of the factors behind the success and failure of regional development policies. Finally, the paper concludes with a brief discussion of how the experiences of these two regions can be generalised to other regions.

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2. Convergence or divergence across Spanish regions since 1980

The gap between the Spanish economy and that of the rest of the European Union (EU) reached it lowest point in 1975. In that year, Spanish GDP per capita measured in purchasing power standards was at levels of 79% of the EU average (Table 1). High economic growth in the 1960s and early 1970s had led to a rapid catch-up with the rest of Western Europe. However, from 1975 onwards and coinciding with the first oil shock, convergence with Europe came almost to a standstill. Two economic sub-periods are evident in the following years. First, between 1975 and 1985 the Spanish economy underwent a rapid relative decline. The gap with the EU in per capita GDP widened, and by 1985 Spanish per capita GDP represented only 70% of the average of the EU, almost 10 percentage points below the level 10 years earlier. After 1985, and coinciding with Spain's entry into the then European Community, the Spanish economy has once again experienced a relative catch-up. This process of convergence was strongest during the period of economic expansion between 1985 and 1991. Since then Spain has maintained its relative position at levels around 77% of the EU average, still below 1975 rates.

The slowdown in the convergence process with the rest of Europe of the late 1970s and early 1980s took place at the same time as a significant change in regional growth trends within Spain. The strong process of convergence across Spanish regions (Mas *et al.*, 1994; Raymond and García-Greciano 1994) and provinces (Dolado *et al.*, 1994; Mas *et al.*, 1995) since 1955 came to an abrupt end in the late 1970s (Suárez-Villa and Cuadrado-Roura 1993; De la Fuente 1996; Cuadrado-Roura *et al.*, 1999; Villaverde 1999). Between 1980 and 1995 the highest rates of growth were achieved mainly in tourist regions (the Canary and the Balearic islands) and by many of the traditionally rich service and industrial areas (Madrid, Rioja, Aragón, Catalonia, Valencia, and Navarre).

Only two regions which in 1980 had a GDP per capita below the Spanish average (the Canary islands and Estremadura) have grown above the Spanish mean during this period. In contrast, traditionally lagging regions have in general performed rather badly. Asturias, a region affected by a process of serious industrial restructuring, had the lowest rate of growth, followed closely by rural Galicia. The economic performance of other lagging regions, such as Castile and León, Castile-La Mancha, Andalusia and Murcia has also been poor (Table 2).

In addition to the reversal of the convergence trend, regional inequalities which had behaved in a counter-cyclical way, decreasing in periods of economic expansion, have become pro-cyclical in recent years, with many of the poorest regions performing relatively badly in years of economic growth. One of the consequences of recent trends has been greater economic polarisation. Wealth is becoming increasingly concentrated along the so-called Ebro (Rioja, Navarre and Aragón) and Mediterranean (Catalonia and Valencia) axes in the north-east, in Madrid, and in the two archipelagos. In contrast, the North, the Centre - with the exception of Madrid - and the South have suffered relative economic declines. The strongest decline took place in the regions in the northern Spanish fringe, along the bay of Biscay. Asturias, Galicia, Cantabria and the Basque Country were among the worst performers. The only exception is Navarre. In terms of employment the panorama is similar, and the northern fringe is once again the area most affected by employment decay.

Table 1. GDP per capita in Spain, Galicia and Navarre as a percentage of the EU-12 average, in purchasing power standards

	Spain	Galicia	Navarre
1975	79.2		
1976	77.3		
1977	76.1		
1978	74.5		
1979	71.5		
1980	70.9	60.3	89.7
1981	70.3	60.6	90.5
1982	70.7	61.5	86.7
1983	71.1	61.2	87.1
1984	70.1	60.6	85.8
1985	69.9	52.2	87.5
1986	70.1	55.3	85.1
1987	71.8	55.4	92.0
1988	72.5	56.8	89.6
1989	73.4	57.1	94.3
1990	74.3	56.6	91.8
1991	78.8	60.0	97.7
1992	77.0	58.9	95.1
1993	78.2	61.7	94.9
1994	76.7	60.0	92.5
1995	77.2	59.8	94.0

Note: There are slight discrepancies between the Eurostat data used in this table and the Spanish Regional Accounts data, used in the remainder of the paper, with respect to the evolution of the Galician GDP per capita in the first half of the 1980s. Both sources show a similar relative decline of regional GDP with respect to the Spanish average. However, the decline occurs in a more gradual way in the Spanish Regional Accounts than in Eurostat data.

Source: Own elaboration using Eurostat data.

Several interpretations have been put forward in order to explain the breakdown of regional convergence and the greater territorial polarisation of economic activity since the late 1970s. Some early explanations stem directly from endogenous growth arguments, focusing on the diffusion of technology, the concentration of R&D activities in some core regions, and external economies (Cuadrado-Roura 1990). Foreign direct investment (FDI) (Molina and Martín Roda 1995) and public investment (Mas *et al.*, 1994) have also been highlighted as possible factors for the reversal of convergence trends. Recently Cuadrado-Roura *et al.*, (1998 and 1999) have put forward the idea that convergence in productivity in Spain in the post-war decades was less connected to technological diffusion or to the rationalisation of production, than to the progressive homogenisation of regional productive structures. The 1950s, 1960s and early 1970s had been years of strong migration from lagging regions to core areas. Migration from poorer regions to richer areas entailed a transfer of employment from agriculture to industry and services. Such a sectoral shift in employment and productivity ultimately led to a reduction in regional disparities

(Cuadrado-Roura *et al.*, 1999). However, the oil shocks, the decline of employment in agriculture to almost European levels, and the adjustment linked to the transformation of the Spanish economy from a relatively closed to an open modern economy brought this sectoral adjustment process and interregional migration almost to an end by the late 1970s. The transfer of labour from agriculture to other sectors since the 1980s has been confined to a few regions, and most notably Galicia. In most other regions the sectoral adjustment process has adopted a different profile in the 1980s and 1990s: instead of a transfer of workers from agriculture to industry and services, the transfer has mainly taken place from industry to lower productivity jobs in services.

Table 2. Annual average growth rate of regional GDP and employment, percent

Region	GDP growth 1980-96	Employment growth 1980-95
Andalusia	2.21	0.85
Aragón	2.59	0.26
Asturias	0.88	-1.03
Balearic Is.	2.62	1.16
Canary Is.	3.62	1.29
Cantabria	2.11	-0.85
Castile and León	1.94	-0.26
Castile-La Mancha	2.30	0.28
Catalonia	2.59	0.79
Com. Valenciana	2.32	1.09
Estremadura	2.68	0.16
Galicia	1.45	-0.66
Madrid	3.06	1.58
Murcia	2.23	1.12
Navarre	2.56	0.55
Basque Country	1.81	-0.20
Rioja	3.03	0.37
Ceuta and Melilla	4.29	1.75

* Changes in percentages

Source: Own elaboration using Regional Accounts data.

It is somewhat ironic that the slowdown in convergence across Spanish regions has precisely taken place when more efforts are being made to tackle regional disparities.

It is somewhat ironic that the slowdown in convergence across Spanish regions has precisely taken place when more efforts are being made to tackle regional disparities. During the 1980s and 1990s, on top of the regional policies traditionally carried out by the Spanish state, the EU and regional governments have been active in designing and implementing policies whose main aim is the promotion of economic activity, and, in the case of national policies and the European regional policy, to achieve greater economic and social cohesion. Yet, with recent economic growth concentrated in some of the traditional economic cores, regional policies seem unable to curb growing disparities. In the next Sections I will analyse the impact of development assistance programmes implemented in two Spanish regions with very different recent economic trajectories (Galicia and Navarre), in order to assess to what extent these policies have contributed to the relative convergence or divergence of these regions.

3. Galicia and Navarre: Similarities and differences

The choice of Galicia (as one of the less dynamic regions) and Navarre (as one of the dynamic regions) may seem odd at first sight. As seen above, some Spanish regions have performed better than Navarre, while Asturias has performed worse than Galicia. However, there are several factors which make the more dynamic regions exceptional cases and eliminate them as possible case studies. For example, high economic growth in the Canary and Balearic islands is almost exclusively driven by their tourist sector. Madrid and Catalonia are too economically powerful and have attracted too much FDI to be compared with any of the declining regions. At the other end of the scale, Asturias' reliance on a heavy and largely publicly-owned industrial sector has meant that the economic trajectory of the region differs widely from that of the rest of the country.

In contrast, Galicia and Navarre are comparable in a number of ways: they are both medium-sized regions in the declining northern Spanish rim. Galicia is the westernmost region in the North, whereas Navarre occupies the eastern part of the fringe. They are regions that, despite having important urban centres, have a relatively dispersed population and show signs of demographic ageing, although these are more significant in the case of Galicia (Precedo Ledo *et al.*, 1994). A brief description of each region is given in Boxes 1 and 2.

Galicia and Navarre are both medium-sized regions in the declining northern Spanish rim. They share a high level of autonomy.

Galicia and Navarre also share a high level of autonomy. Galicia is one of the historical "nations" which make up the Spanish state. It has a strong sense of identity and its own language. As one of the historical nations – at the same level as the Basque Country and Catalonia – it achieved autonomy via Article 151 of the Spanish Constitution, which guarantees a high degree of self-rule. Navarre, although lacking the status of a "nation", is also characterised by a strong identity and very high levels of autonomy. It is a "Charter" region, which allows it to set up and collect its own taxes and to negotiate its contribution to the Spanish state directly with the central government in Madrid (1). It is, in fact, the region with the greatest financial autonomy in Spain as a result of its fully devolved fiscal system. This autonomy grants both Galicia and Navarre a greater margin of manoeuvre than other regions in the northern rim, such as Asturias or Cantabria, to implement their own regional policies.

Also, from a structural point of view, Galicia and Navarre are relatively diversified regions. In 1995, more than half of the total value added of both regions was generated by the service sector. Galicia – partly due to the size of its fisheries – had a larger primary sector, whereas the weight of the industrial sector in Navarre was relatively more important. However, differences increase when employment instead of gross value added is taken into consideration. Having almost 25% of the active population employed in agriculture, forestry and fishery (in 1995) makes Galicia the most agricultural region in Spain. Navarre, on the other hand, had a rate of employment in agriculture below the Spanish average, but its level of industrial employment, which hovered around 35% of the active population between 1980 and 1995, was twelve points above the 1995 Spanish average.

1) The reasons for these economic privileges lie in the fueros *or special economic charters granted to some Spanish kingdoms in the Middle Ages and respected henceforth by the Spanish state after unification at the end of the 15th century. Most* fueros *were suppressed in the early 18th century by the Bourbon dynasty. Only Navarre and the Basque Country have managed to survive until present.*

Box 1. Galicia

Galicia is located in the westernmost fringe of Europe (the "Finisterre" or Land's end). The Atlantic Ocean to the north, the Bay of Biscay to the west, and mountainous ranges to the east limit accessibility to the region. More than 30% of its territory situated at 600 m above sea level.

Surface: 29 575 km^2
Population: 2 724 544 inhabitants
Population density: 92.1 inhabitants per km^2
Largest cities: 1. Vigo (283 110); 2. A Coruña (243 134); 3. Ourense (107 965);
4. Santiago (93 584); 5. Lugo (86 620); 6. Ferrol (82 548); 7. Pontevedra (73 871).

Galicia has traditionally been considered an agricultural and fishing region. It still has the largest rate of employment in the agricultural, forestry, and fishery sectors in Spain. Since the 1960s, and as a result of development policies, parts of the region became industrialised. Large shipyards were located in the northern city of Ferrol, and a Citroën automobile plant was established in Vigo, already home of some of the most dynamic fishing and canning industries in Europe. However, the crisis of the 1970s provoked a steep decline which was especially severe in agriculture and in the leading industrial sectors (shipbuilding, automobile, metal products, machinery and equipment, and food industries). GDP per capita in 1996 stood at almost EUR 9 000, which represented 80% of the Spanish average.

Average annual growth rate of GDP (1980-96): 1.45%
Inward investment: 0.3% of regional GDP (1997)
Agriculture as a share of GDP: 7.6%
Manufacturing as a share of GDP (including construction): 34.1%
Services as a share of GDP: 58.3%

In terms of employment, Galicia was traditionally featured by a large underemployment in the primary sector and by having one of the lowest unemployment levels in Spain. The decline of employment in agriculture and fishing in the 1980s and 1990s has been accompanied by a rise of unemployment, which in 1998 stood at a rate of 17.3%, slightly below the Spanish average (18.8%).

Participation rate: 47.3% (1998) (men: 58%; women: 37.5%)
Unemployment rate: 17.2% (1998)
Educational attainment of population, aged 25-29 (1997): Less than high school degree: 70%;
with high school degree: 13%; with college degree: 17%.

Accessibility to markets in Galicia and Navarre is different. Another important difference comes from the skills of the working population.

Of course, there are a series of other greater dissimilarities. Accessibility to markets is different. Galicia, located in North-western Spain and surrounded by mountains to the East and by the sea to the North and West, has been relatively inaccessible in comparison to Navarre, which enjoys a more convenient location for European markets along the Paris-Madrid axis (2).

2) The distance to markets and the transportation costs associated to it are a significant handicap for the Galician economy. Santiago de Compostela, the capital of Galicia, is located 670 kms. away from Madrid, 1174 from Barcelona, 1610 from Paris and 1905 from Brussels. In comparison Pamplona, the capital of Navarre, is 407 kms. from Madrid, 437 from Barcelona, 840 from Paris and 1135 from Brussels.

Box 2. Navarre

Navarre is geographically located along the Paris-Madrid axis, east of the Basque Country. The Pyrenees form an important natural barrier to the north along the French border. The region is divided in three natural areas: the Pyrenees to the north, the hills and valleys of the north-west and west, and the plains or Riberas which stretch toward the Ebro valley to the east and south.

Surface: 10 391 km^2
Population: 530 819 inhabitants
Population density: 51.1 inhabitants per km^2
Largest cities: 1. Pamplona (179 281); 2. Tudela (27 526).

Traditionally considered as a rural region, Navarre has witnessed a significant increases in industrial employment since the 1960s. This development was initially based on local SMEs, but since the mid-1980s Navarre has been remarkably successful in attracting foreign direct investment. The establishment of the Volkswagen plant in Landaben is an indicator of this success. In addition, local firms have shown great economic dynamism. In rural areas there has been a relatively smooth transition from agriculture to industry and increasingly to services. As a result of these trends Navarre has become – with EUR 13 600 of GDP per capita – one of the leading Spanish regions.

Average annual growth rate of GDP (1980-96): 2.56%
Inward investment: 20.9% of regional GDP (1997)
Agriculture as a share of GDP: 3.7%
Manufacturing as a share of GDP (including construction): 41.4%
Services as a share of GDP: 54.9%

With a participation rate of the population in the labour market similar to that of Spain, Navarre stands out in Spain for its high level of industrial employment (48% higher than in the rest of Spain) and for a rate of unemployment which almost halves the Spanish average.

Participation rate: 50.6% (1999) (men: 63.5%; women: 38.3%)
Unemployment rate: 9.3% (1998)
Educational attainment of population, aged 25-29 (1997): Less than high school degree: 59%; with high school degree: 15%; with college degree: 26%.

Another important difference between Galicia and Navarre comes from the skills of the working population. Whereas, in the 1991 Population Census, Navarre had the highest level of educational attainment of the adult population (measured in years of schooling) and had the second lowest illiteracy rate (after Cantabria) in Spain, Galicia performed poorly in both indicators (Table 3). Only Estremadura, Andalusia, the Canary islands and Murcia fared worse than Galicia in terms of the overall skills of the population (Rodríguez-Pose 1998). Although with the creation of universities in A Coruña and Vigo, the university enrolment gap between both regions has narrowed since the late 1980s, the Galician ratio of university students enrolled in technical careers was less than half of that of Navarre. And the percentage of adult population with university degrees in Navarre (11%) was almost double that of Galicia (6%). This relative shortage of qualified and skilled workers in Galicia represents a serious handicap for productivity and entrepreneurship.

Table 3. Main regional educational indicators in Galicia and Navarre

	EDAT	ILRA	SCEN	VTEN	UNDE	UNEN	TECH	UNTR
Spain	6.51	3.91	85.7	35.7	7.7	33.0	0.23	34.8
Galicia	5.96	3.01	85.5	33.5	6.0	30.5	0.21	34.9
Navarre	7.67	0.96	95.0	26.6	11.0	36.7	0.52	33.6

EDAT - Educational attainment of the population in 1991 (measured in years of schooling).
ILRA - Illiteracy rate of adult population in 1991.
SCEN - Secondary school enrolment rate in the academic year 1990-1991.
VTEN - Percentage of students in vocational training with respect to students in secondary education.
UNDE - Percentage of the population with University degrees in 1991.
UNEN - University enrolment rate (1991).
TECH - Ratio of students in technical careers with respect to those in humanities and social sciences (1988-89).
UNTR - Percentage of unemployed following training courses (1991).

Source: Derived from Population Census and Consejo de Universidades data.

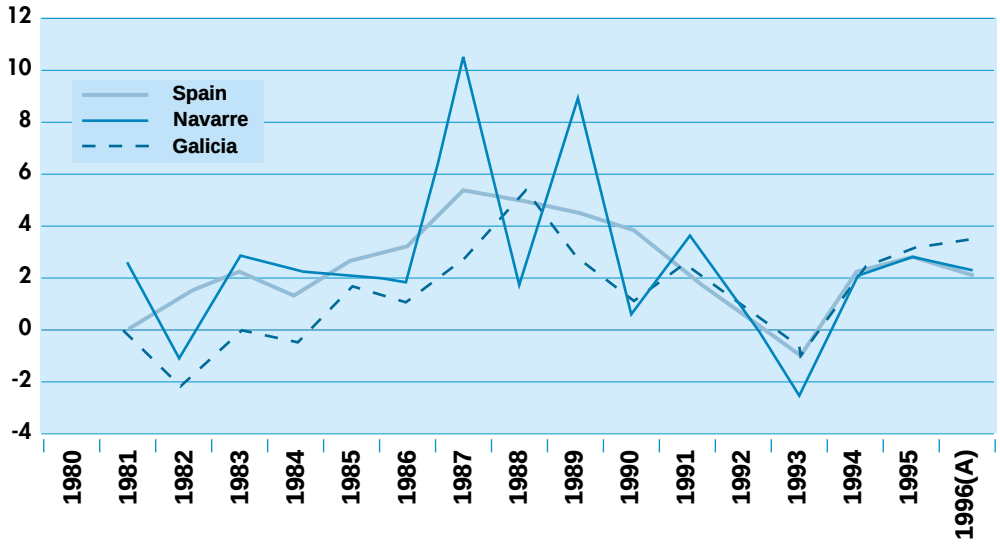
But perhaps the most important difference is the fact that Galicia is one of the few regions which has continued the structural adjustment of its production system throughout the 1980s and 1990s. Whereas the sectoral make-up of the GDP and employment of Navarre has followed the general Spanish trend of relatively little structural change, Galicia has witnessed a massive shift of employment from the primary sector to services and to unemployment.

3.1 The performance of the two regions compared

Galicia's growth performance in the two latest decades is illustrated in Figure 1. With the exceptions of recent years, its growth has generally been below the Spanish average. An important cause for this poor performance was the agricultural sector. The annual variation in Gross Domestic Product generated by agriculture in Galicia has suffered ups and downs, but has lagged behind the evolution of the sector in the rest of Spain. The years between 1985 and 1990 were particularly hard. Spain's membership of the then European Community was a serious blow for a sector which was neither competitive, nor differentiated enough to face the European challenge. The performance during the early 1980s of services, and of market-oriented services in particular, was also poor. Recovery, repair, trade, lodging and catering services, and transport and communication services had negative rates of growth between 1980 and 1986. In contrast to the evolution of the primary sector, Spain's membership of the EC led to a recovery of market-oriented services in the region.

Navarre performed slightly better than the Spanish average in the 1980s and early 1990s, although the depression of the early 1990s affected the region to a greater extent than the rest of Spain (Figure 1). The years which followed Spain's entry in the EC were particularly favourable for industry in Navarre. The metal products, machinery, equipment, and electrical goods, and the transport equipment sub-sector reaped the greatest benefits. The metal products sub-sector (which represents almost one-third of Navarre's industrial sector in terms of employment) grew at annual rates of 10% or above between 1985 and 1989. Growth in transport equipment was more volatile, but not less spectacular.

Figure 1. Annual change in real GDP in Galicia and Navarre.



Note: Domestic Product measured in 1986 Spanish pesetas, see note under Table 1.

Source: Own elaboration using Regional Accounts data.

The contrast between the performance of Galicia and Navarre is even stronger when employment is considered instead of GDP.

The contrasts between Galicia and Navarre are even stronger when employment instead of GDP is taken into consideration. As one of the most backward agricultural regions in Spain employment in the agricultural, forestry and fishery sectors in Galicia was always high (around 60% of the active population in the 1950s and 1960s). However, from the early 1960s employment started to decline steeply due to the passage from subsistence to commercial agriculture, together with restrictions to fishing in the traditional Galician fishing-grounds. The continued poor performance of agriculture after EC membership meant that some 220 000 jobs - or about one-half of the total - were lost in the primary sector between 1985 and 1995. In contrast to previous decades, other sectors were unable to create enough jobs to compensate. For example, 14 000 jobs were lost in industry and 12 000 in building and construction. Services were the only sector to expand, but there were significant differences in the behaviour of market services, on the one hand, and non-market services, on the other. Whereas employment in non-market services (i.e. public sector jobs) has almost doubled in size since 1980 (from 106 000 jobs in 1980 to 183 000 in 1995), market services grew only by 19% (Figure 2).

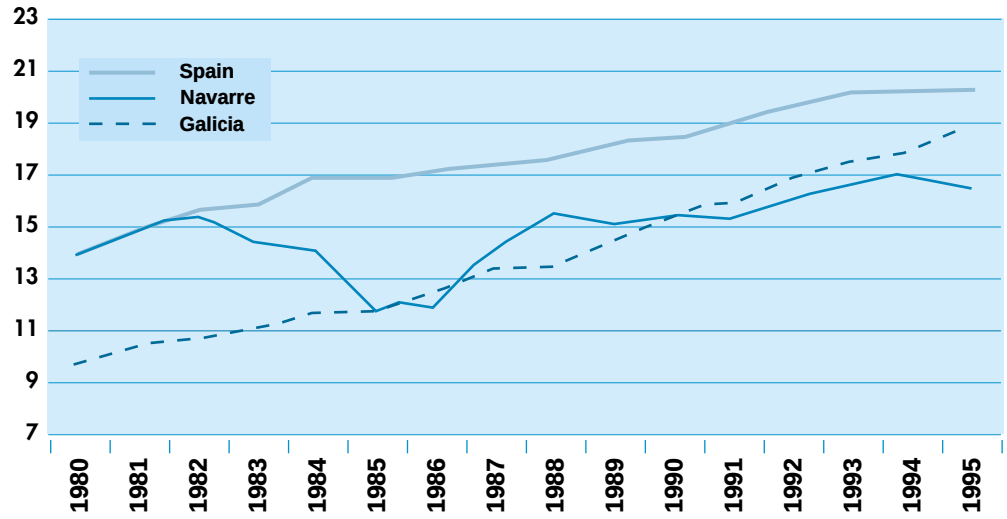
As a result, in the fifteen years covered in the analysis more than 100 000 jobs have been destroyed in Galicia and unemployment has risen sharply from being the lowest in Spain, with a rate of 12% in the early 1980s, to a rate of 19% in 1996 (Table 4).

Table 4. Unemployment rates, percentage

	1983	1988	1992	1996
Spain	17.4	20.1	17.8	22.3
Galicia	10.1	13.2	16.1	19.0
Navarre	15.7	14.1	10.5	11.0

Source: Eurostat.

Figure 2. Evolution of the share of employment in non-market oriented services, percent.



Source: Own elaboration using Regional Accounts data.

The evolution of employment in Navarre depicts a very different panorama from that of Galicia. Despite having an ageing population, employment in the region has expanded. From 1980 to 1995 employment grew by 8.5%; there were 15 000 more jobs in 1995 than in 1980. All sectors except agriculture have managed to generate employment or maintain jobs. Unemployment rates in Navarre have followed an opposite trend to those of Galicia, going from levels of 16% in the early 1980s to 11% in 1996 (Table 4). The loss of employment in agriculture (10 000 jobs) has been more than compensated by the expansion of the service sector (23 000 jobs created between 1980 and 1995). If, in the case of Galicia, there was a clear imbalance between the expansion of non-market services and the more moderate growth of market services, in Navarre the level of growth of both sectors is comparable. The number of jobs in market services increased by 28% and that of non-market services by 26% - well below the Spanish average - during the period of analysis.

3.2 Productivity

Labour productivity in Navarre was slightly above Spanish levels. Galicia's productivity has remained at levels of around 70% of the Spanish average.

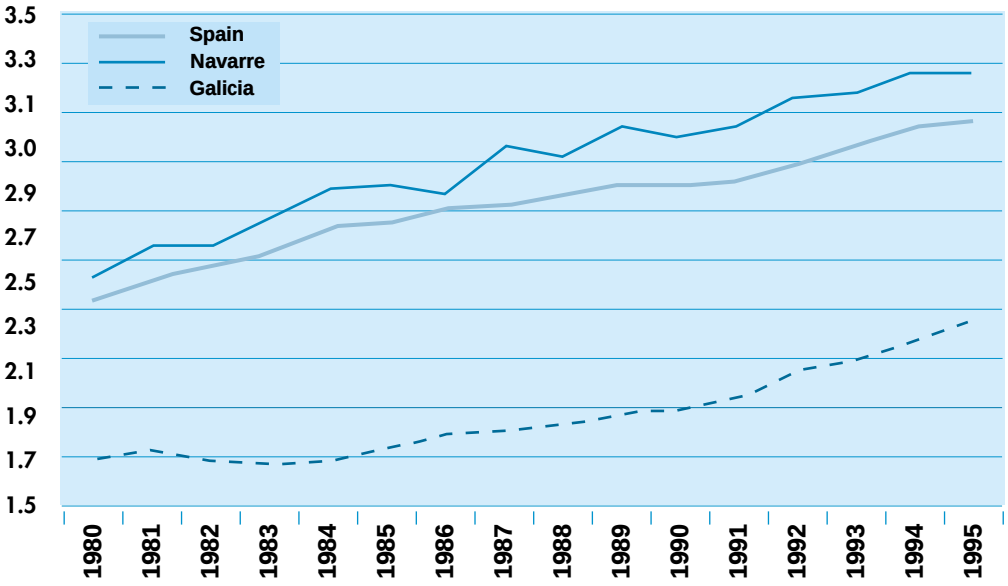
Differences in the employment structure of the two regions herald a significant gap in productivity levels. Labour productivity in Navarre was slightly above Spanish levels throughout the period of analysis, rising from 3% in 1980 to 6% above the Spanish average in 1995. Galicia's productivity has remained at levels of around 30% below the Spanish average since 1980 (Figure 3). The primary sector is responsible for most of the productivity gap between both regions. A worker employed in the primary sector in Navarre is three times as productive as a worker in the same sector in Galicia, and the gap has been growing in recent years. This gap in productivity is related to the structure of Galician agriculture, which was and, to a large extent, still is dominated by minifundios, small patches of land divided from generation to generation (3), and characterised by

3) Galician farms have an average size of 8.2 hectares, which is less than one third the average size of a Spanish farm. Navarran farms have an average size of 34 hectares (Encuesta sobre la Estructura de Explotaciones Agrícolas, 1993).

an ageing workforce and large female under employment. This despite some notable exceptions and recent improvements – has limited the capacity of the Galician agricultural sector to insert itself in international commercial circuits. Navarran agriculture is, by contrast, more dynamic and market-oriented.

The productivity gap in other sectors is smaller. In fact, the productivity per worker in industry is higher in Galicia than in Navarre. This greater industrial productivity is linked to the size of the energy, fuel and power sector. The location of several power plants, dams and an important refinery in Galicia imply that the energy sector represents about 9.5% of the region's GDP and almost a third of its industrial GDP, whereas the level of employment in the sector does not reach 1%. In comparison, the energy sector in Navarre is relatively small, not reaching levels of 2% of the region's GDP. Productivity levels in the energy sector in Galicia are 75% above those of the same sector in Navarre. However, when only manufacturing is taken into account, the picture changes, and productivity is 25% higher in Navarre than in Galicia.

Figure 3. Productivity (all sectors) in Galicia and Navarre, 1980-95.



Note: Productivity measured in million 1986 ESP.

Source: Own elaboration using Regional Accounts data.

Workers in the Navarran service sector are more productive than their Galician counterparts, but the gap has remained smaller than in the primary sector. Notably, the productivity of the Galician non-market service sector has declined by almost 10% from 1980 to 1995, as a consequence of the growth of low-skilled employment in sectors such as day-care services, and of the failure of non-market service salaries to keep up with inflation.

4. Policy effort to promote economic development in Galicia and Navarre

What policy efforts have been made in order to promote economic development in Galicia and Navarre? What has been done to prevent a further decline of the Galician economy? In this section of the paper I will present the different tiers of government involved in setting up and implementing assistance programmes in Galicia and Navarre. The following section will provide a critique of these policies.

4.1 The institutional framework for the implementation of development programmes

Spain's democratic transition and membership of the EU have introduced new institutional actors in the economic decision-making process. Devolution of power to the regions in the early 1980s and the implementation of an active European regional policy mean that, in the recent past, local, regional, national, and supra-national tiers of government have been actively involved in promoting economic development at the regional level. This represents a considerable change with respect to the situation prior to 1982-3, when territorial development was a prerogative of the Spanish state, with some local government involvement (Cuadrado-Roura 1987).

The introduction of new tiers of government has added complexity to the institutional framework of regional development policies in Spain.

The introduction of two new tiers of government has added complexity to the institutional framework of regional development policies in Spain (Table 5). Regional governments have taken centre stage in the process. Each autonomous community has set up its own development and foreign investment departments, whose main aims include the promotion of economic development and the attraction of FDI to the region. In addition, other regional departments, ranging from tourism to industry, have powers which indirectly contribute to enhance or curtail regional competitiveness. Galicia and Navarre are no exception to the rule and their respective regional governments have set up special development agencies for these purposes (Table 5).

Many of these agencies adopt the form of quangos. They tend to be public companies organically linked to different ministries or cabinets in the Galician and Navarran governments. Probably the most prominent development agency in Galicia is the *Instituto Galego de Promoción Económica* (IGAPE, Galician Institute for the Promotion of Economic Activity). The main aims of this agency - linked to the Galician Ministry of the Economy - are to promote local and foreign investment in the region; to provide financial support for small and medium-sized enterprises (SMEs) by subsidising loans; as well as to implement other measures aimed at improving the competitiveness of SMEs. Together with the IGAPE, other regional institutions play a part in promoting economic development in Galicia. The *Sociedade para o Desenvolvemento Comarcal de Galicia* (SDCG, Society for District Development in Galicia), linked to the Cabinet for Planning and Territorial Development, is actively engaged in planning and development at the local level through the design and implementation of local development plans. Likewise, other governmental agencies, such as Turgalicia, and departments linked to the Regional Ministry of Industry are indirectly involved in development strategies. Private organisations, such as the *Instituto de Desenvolvemento Comunitario* (IDC), are also active participants in the development process.

The Navarran regional government has set up a governmental agency to promote economic and industrial development in the region. The *Sociedad de Desarrollo de Navarra* (SODENA, Society for the Development of Navarra) is controlled by the Government of Navarre. The *Caja de Ahorros*

de Navarra, a prominent local building society, owns 20% of its shares. The regional Ministries of the Economy and of Industry, Trade, Tourism, and Employment and the Centro Europeo de Empresas e Innovación (European Business and Innovation Centres) also participate in designing and implementing assistance programmes.

Table 5. The institutional framework in Galicia and Navarre

Galicia	Navarre
-EU	-EU
-Spanish State	-Spanish State
F. de Compensación Interterritorial	
-Region	-Region
Regional departments	Regional departments
Economy Industry, Trade, Tourism Agriculture	Economy Industry, Trade, Tourism Agriculture
Quangos	Quangos
IGAPE *SDCG*	*SODENA*
Private Actors	
IDC	

Together with policies implemented by regional governments, national and supra-national tiers of government carry out regional development policies. The Spanish state intervenes mainly through public investment and the Fondo de Compensación Interterritorial (Inter-territorial Compensation Fund), set in the Spanish Constitution as the national source for levelling out territorial disparities. Since 1986, EU funding has also become a key instrument for the development of lagging regions and for the correction of regional inequalities in Spain. The European Structural Funds co-finance large development programmes in the regions and specific European Initiatives are gaining ground in areas such as trans-border co-operation and bottom-up rural development.

In sum, the institutional framework for the implementation of development policies in Spain is rather complex. Territorial and regional assistance programmes specifically aimed at the promotion of economic activity by different tiers of government are joined by sectoral policies implemented by the same governments. From the point of view of co-ordinating policies, the combination of horizontal development policies and vertical sectoral policies, with diverse aims and objectives, leads to clashes among different administrations and even, within administrations, among different departments. And quite often the effects of certain sectoral policies undermine some of the effects of territorial policies. From the point of view of policy analysis, this complex policy framework makes discerning the impact of individual policies and assistance programmes difficult.

4.2 Regional development and assistance programmes in Galicia and Navarre

An important difference between the two regions is that Galicia, being one of the least developed regions in Spain and in the EU, benefits from the substantial regional policy packages set up by Spain

and the EU in order to reduce economic disparities within their respective territories. Conversely, Navarre has to rely mainly on the policies and resources of the Navarran regional government.

The involvement of regional governments

Galicia and Navarre are, as mentioned earlier, among the Spanish regions with a higher level of self-rule. As a Charter region, Navarre has a greater financial capacity to set up its own policies (and development policies) than any other Spanish region. In 1997, the size of its regional budget in per capita terms was 56% higher than in Galicia (Table 6). Galicia, however, does not lag far behind in its capacity to set up its own autonomous policies. Accessing regional autonomy via art. 151 of the Spanish Constitution guaranteed the transfer of considerable powers. And the areas of policy intervention which are exclusive powers of the Galician regional government have continued to grow throughout the 1980s and 1990s. The region also has the financial muscle to put its autonomous policies into operation. With a regional budget of ESP 870 billion in 1997, it comes only after Navarre, the Basque Country, and Andalusia in financial autonomy, measured in per capita terms. When the size of the budget as a percentage of GDP is considered, the difference between Galicia and Navarre dwindles. In 1996 the Navarran regional budget represented 21% of the region's GDP, while Galicia's budget was 20% (4). The high degree of financial autonomy has granted both regions the capacity to implement a wide range of policies aimed at promoting economic development.

On paper, there is little difference between the regional development strategies pursued by the two regions.

On paper, there is little difference between the regional development strategies pursued by the two regions. Economic and development programmes have been mainly geared towards attracting inward investment, supporting and restructuring the local production structure (and especially local SMEs), and investing in local human capital. These normally include:

a) Economic incentives aimed at the attraction of investment and the creation of employment, including subsidies to investment, and for permanent job created.

b) Financial incentives for the development of research and development activities, such as interest-free loans for the development of R&D projects, subsidies for the purchase of scientific equipment, and the provision of grants and scholarships for researchers.

c) Provision of infrastructure and equipment for the development of economic activities: measures in this area range from the development of technology parks and incubators, to the simple provision of basic infrastructure such as electricity or mobile phone coverage in remote areas.

d) Incentives for the development of industrial sites including infrastructure construction, and special loans for the purchase of land on these sites.

e) Training and skills of the labour force: measures aimed at enhancing the skills of the local labour force include greater investment in higher education with the creation of new universities; promotion of vocational training; grants and financial support for researchers; and, in some cases, training agreements with companies for the re-training and redeployment of employees.

Navarre, thanks to its financial and fiscal autonomy, has also been able to grant special tax-breaks in cases of new investment (SODENA, 1995).

4) These percentages, however, highlight the significant increase of the size of the budgets of the two regional administrations over the last decade. Between 1990 and 1996, the relative size of the regional budgets in these two Autonomous Communities grew from levels of around 12 to 20 % of the regional GDP (Rodríguez-Pose, 1996b).

Table 6. Regional budgets in relation to population (thousand ESP per capita)

REGIONS	1990	1994	1997
ART. 151			
Andalusia	175.8	255.3	320.2
Canary Is.	130.2	187.5	314.6
Catalonia	169.9	256.8	297.8
Galicia	**127.7**	**267.3**	**319.4**
C. Valenciana	145.0	218.1	254.8
ART. 143			
Aragón	49.5	143.5	190.0
Asturias	60.6	92.6	145.4
Balearic Is.	35.4	62.3	99.9
Cantabria	94.7	90.1	145.8
Castile-La Mancha	75.7	166.4	226.4
Castile and León	58.9	125.4	174.3
Estremadura	80.4	171.4	202.5
Rioja	88.7	102.5	134.0
Madrid	50.4	67.3	117.7
Murcia	59.8	74.4	120.2
CHARTER REGIONS			
Navarre	**240.0**	**440.9**	**514.7**
Basque Country	203.1	306.3	345.4
NATIONAL AVERAGE	123.9	196.8	249.3

Source: Ministry of Public Administrations.

Since 1991 Galicia has also set in motion an ambitious local development plan, know as the *Plan de Desenvolvemento Comarcal* (District Development Plan). This plan, which includes the division of Galicia in 52 *comarcas* or districts, was designed with the aim of reducing disparities, developing local potential, and improving living standards in depressed areas while, at the same time, protecting the environment. This bottom-up development strategy is based on the voluntary participation of town-councils and local economic and social actors in the design and implementation of plans, as well as on the vertical co-ordination of other regional sectoral policies which may have an impact on local development (Precedo Ledo 1994). Similar local development strategies have been pursued by the Navarran regional government, albeit in a less structured way and following a more top-down approach. These strategies have included the division of the region into 7 zones and 19 sub-zones under the programme 'Navarre 2000'. The idea of the programme is to match regional sectoral policies with the specific needs of different areas of the region.

The involvement of the national government

The vast majority of the involvement of the Spanish government on regional development issues is still achieved via national sectoral policies and the budget transfers associated to them. Infrastructure investments account for a large percentage of the transfers. Large road, railway, hydrological and similar infrastructure schemes are still co-ordinated from Madrid, although in

many cases the regions and the EU (mainly through the Structural and the Cohesion funds) contribute to their financing. Technology is another important area of investment by the central government. Education and other areas of government have, in contrast, been progressively devolved to the regions.

In addition to sectoral programmes, Galicia attracts additional funds from the *Fondo de Compensación Interterritorial* (Inter-territorial Compensation Fund). The region has traditionally been the second recipient of funds after Andalusia in absolute terms, and also the second -after Estremadura- in per capita terms. During the 1990s the contribution of the Fund to the development of Galicia has fluctuated around ESP 24 billion per year, or almost ESP 9 000 per inhabitant per year (Table 7). Navarre, as all the more developed Spanish regions, is a net contributor to the *Fondo de Compensación Interterritorial*.

Table 7. Funds received by Galicia from the inter-territorial compensation fund (ICF)

	1991	1992	1993	1994	1994	1996	1997	1998	1999
Funds received (in million ESP)	30 025	25 715	23 505	24 073	23 747	23 670	24 285	24 540	24 283
As a % of the ICF	11.7	12.0	18.2	18.7	18.4	18.4	18.2	18.0	17.5

Source: Instituto Galego de Estadística and Ministry for the Public Administrations.

European involvement in regional development

Since the reform of the Structural Funds, the EU has become a major actor in the co-designing and co-financing of regional development strategies. This has mainly benefited Galicia, which because of its GDP per capita below 75% of the EU average, has been classified as Objective 1 region. Navarre, being above the 75% threshold, has remained outside this group.

EU has become a major actor in regional development. This has provided a boost in the amount of funds available for Galicia, an Objective 1 region.

This has provided a boost in the amount of funds available for development programmes in Galicia. In the period 1989-93, the Structural Funds contributed with ESP 186 billion (ECU 1 116 million) to the development of Galicia (Gil Canaleta 1999), and a further ESP 343 billion (ECU 2 061 million) is budgeted for the period from 1994 to 1999. Thus, these transfers are significantly larger than those made on a national basis via the *Fondo de Compensación Interterritorial*.

The bulk of Objective 1 funds has been geared towards infrastructure projects, and most notably in the case of Galicia to the two motorways connecting the to main cities in the region (Vigo and A Coruña) with Madrid. Other projects financed under Objective 1 include the improvement of human resources; the support and promotion of the industrial tissue, in general, and of SMEs, in particular; the protection of the environment; and the promotion of tourism and rural development (5).

5) In addition to Objective 1 support, Galicia also receives funds linked to several Community Initiatives. Leader and Interreg are the most important Initiatives in the region, although other Initiatives such as Rechar, Conver, Resider and Urban are present. Leader, a programme aimed at rural development, is being supported by a contribution of ESP7.3 billion (ECU 43.8 million), and the Spain/Portugal Interreg programme, has a support of ESP92 billion (ECU 552 million), a substantial amount of which will be used to improve the connections between Galicia and the North of Portugal.

Navarre, in contrast, receives much less support from the European Structural Funds. During the period 1994-99 it is budgeted to receive ESP 25 billion (ECU 147.2 million), or 7% of Galicia's share (Commission of the European Communities, 1999). Being out of Objective 1 also means that the nature of the assistance programmes implemented in Navarra is very different than in Galicia. There is comparatively little emphasis on infrastructure and the effort is concentrated on the support for employment, R&D, and the protection of the environment (Objective 2); the integration of young people and the long-term unemployed into the labour market, via teaching and training programmes (Objectives 3 and 4); and the economic diversification of rural areas (Objective 5b) (6).

5. Reasons behind the success and failure of regional development in Galicia and Navarre

For much of the last two decades, Galicia would seem to have been in an ideal position to converge to the GDP levels of the rest of Spain. It has been one of the few regions in Spain which has still witnessed a convergence in productive structures. It has also enjoyed an unprecedented level of support for regional development by different tiers of government. The regional, the Spanish and the European administrations have all joined efforts - albeit not always in a fully structured and co-ordinated way - to promote economic activity and generate employment in the region. In contrast, Navarre was in a worse position to converge. The rapid transfer of employment from agriculture to other sectors had already been achieved during the 1950s and 1960s, and in the last two decades there has been no significant change in the sectoral structure of employment. Moreover, the resources devoted to promoting development in the region, while significant, have been a fraction of those spent in the promotion of economic activity in Galicia.

Yet, almost against all odds, Navarra has performed well in the declining Northern Spanish rim, while Galicia has lagged behind.

And yet, almost against all odds, Navarre has performed well in the declining northern Spanish rim and has kept up with the pace of the rest of Spain. It has managed to converge to the EU average at a slightly higher rate than that of Spain, while Galicia has lagged behind, with poor performances both in economic growth and in employment generation.

There are multiple factors which explain the relative economic success of Navarre and the relative failure of Galicia during the 1980s and 1990s. Some of them point in the direction of the process of European integration and the different capacities of the two regions to adapt to and to respond to the challenges of greater integration. Navarre, which has a more open and competitive industrial and service-based economy was - as the rest of north-eastern Spain and Madrid - expected to perform better in an open economic environment than the relatively backward and rural Galicia (Hamilton 1996; Cuadrado-Roura and Mancha Navarro 1996). However, a key reason behind the different performance is the way in which development strategies were designed and implemented.

5.1 Regional policies and lack of convergence in Galicia

Perhaps the most significant feature of Galicia's economic evolution during the 1980s and 1990s has been, as mentioned earlier, its failure to create employment: jobs were lost in agriculture, and neither industry, nor construction provided the outlet for the redundant agricultural workforce or for

6) Other Community initiatives are also present in the region, but, once again, the dimension of support is much smaller than in Galicia. The Leader initiative provides only one-eighth of Galicia's funding. And although Navarre is also a border region, the France/Spain Interreg programme is much smaller than the Spain/Portugal programme, and a large percentage of the funds are being spent to improve links between the two countries in Aragón and Catalonia.

new entrants into the labour market. Market services grew at a slower pace than elsewhere in Spain and only non-market services (in the public sector) witnessed a significant expansion in employment. This means that low productivity jobs in the primary sector have been at best traded by jobs in the non-market service sector, and at worst by lower activity rates and unemployment.

Hence, if lack of job creation is the main factor behind the decline of economic activity in Galicia, the failure of regional policies and assistance programmes to put it at the heart of the development strategies is partially to blame for the lack of convergence. Instead, regional policies and assistance programmes have focused on two areas (infrastructure and the attraction of FDI) which have so far proven less successful in setting the bases for sustainable economic development in the region.

During the 1980s and the beginning of the 1990s the main development strategy by the Galician regional government has been to stress the negative impact that Galicia's relative physical isolation had on the competitiveness of the region. Therefore investment in infrastructure, in general, and the building of the two motorways connecting Galicia to the Spanish Meseta, in particular, have been regarded as the main development priority. Such an emphasis on infrastructure was largely justified on the grounds of Galicia's poor accessibility and relatively poor endowment of infrastructure in the Spanish context. Similarly, Galicia also had a deficient accessibility by rail (7).

In brief, infrastructure has been a relatively easy and low risk strategy for regional politicians.

However, a strategy based on infrastructure investment also had a series of advantages for the regional government. First and foremost, it is the more traditional form of development policy and an easy -if not very innovative- way to spend the large amount of development funds funnelled to the region. The development of infrastructure is also highly visible. It is supported by public opinion and politicians can capitalise on achievements before local and regional elections. It is also a way of putting the blame on the national and European administrations, who are responsible for the bulk of the funding, if the development of infrastructure is behind schedule. Finally, the regional conservative government, in office during much of the 1980s, could also use this argument against the Spanish socialist central government of the time, and blame its failure to deliver the required infrastructure for Galicia's economic problems. In brief, infrastructure has been a relatively easy and low risk strategy for regional politicians, akin to the one used - with a strikingly similar lack of immediate results - in the Italian Mezzogiorno during the post-war decades (Trigilia 1992).

If the returns from regional investment in infrastructure are low, it is often because some of the projects have taken longer to complete than expected. The building of two motorways, for example, has been painfully slow, taking almost 20 years between design and completion. The final sections of the Southern motorway have only been completed in 1998 and 1999. The completion of the Northern motorway is expected for 2000. The complex Galician geography and a lengthy process of expropriation in a land dominated by *minifundio* are behind these delays. Faster progress has been made in the field of telecommunications, through the Plan de Telefonía Rural (Rural Telephone Plan). Galicia was in 1995 the first Spanish region to have full coverage of its territory for mobile phones.

Infrastructure developments have certainly contributed to solve important bottlenecks limiting the development potential of the region. Moreover during the 1980s and 1990s, investment in

7) If we consider the situation in 1990, Galicia only had 129 kms of motorways, that is, 29 kms less than Navarre, despite being three times its size. There were only single track railway lines in Galicia and only 219 kms of electrified lines. Navarre, by contrast, had 64 kms of double track lines and 211 kms of electrified lines (Eurostat Regio data).

infrastructure has provided much needed funds which have acted as a safety net to prevent Galicia's economic free fall. Nevertheless, it is doubtful that the sole emphasis on infrastructure will bring the expected results in terms of sustainable development, especially since comparatively little has been done to promote the competitiveness of Galician companies and to generate entrepreneurship.

Infrastructure is, in turn, contributing, to the genesis of new development problems - the greater economic polarisation within the region.

Infrastructure is, in turn, contributing, to the genesis of new development problems, and namely to a greater economic polarisation within the region. In recent years economic activity has become increasingly concentrated in the main urban centres (fundamentally Vigo and A Coruña, but also Santiago, Lugo and Ourense), at the expense of traditional industrial sites and rural areas, which have remained devoid of resources to face the new challenges of an ever more competitive and global economy (Precedo Ledo 1998).

The other leading development strategy in Galicia has been the attraction of FDI. The IGAPE has been given a prominent role in promoting the image of Galicia and in trying to bring foreign companies to the region. However, and although Galicia profited from the surge in FDI associated with Spain's entry in the EC, progress in the field has been slow after 1986 (Doval 1994). Most FDI channelled to Spain since becoming a member of the EU has been concentrated in Madrid and Catalonia. These two regions attract more than 70% of all new FDI entering Spain (Table 8). Galicia -a region which generated 5.6% of the Spanish GDP in 1996- only attracted 1.12% of all FDI in the same period (Table 8). As a whole, FDI has had neither a significant impact on the economic development of Galicia, nor on the creation of jobs.

Table 8. Regional FDI as a percentage of total FDI

	1988	1989	1990	1991	1992	1993	1994	1995	Total
Andalusia	7.6	12.9	5.5	5.5	5.3	5.9	8.7	5.4	6.8
Aragón	4.0	1.4	1.4	0.9	0.8	0.9	0.5	3.9	1.5
Asturias	0.2	0.2	0.5	0.7	0.3	0.3	1.3	1.4	0.7
Balearic Is.	1.4	2.4	1.4	0.9	1.5	0.5	1.6	2.5	1.5
Basque Country	2.3	3.9	2.8	1.0	4.5	2.6	3.6	4.7	3.1
Canary Is.	1.3	1.0	2.1	0.8	0.9	1.1	0.4	1.2	1.0
Cantabria	0.2	0.8	0.2	0.1	0.7	0.2	0.1	0.8	0.4
Castile-La Mancha	0.8	0.2	0.5	0.3	0.6	0.6	0.9	1.1	0.6
Castile and León	0.5	1.1	0.7	0.5	1.0	0.9	3.2	1.2	1.2
Catalonia	23.7	24.6	29.9	43.0	28.9	29.6	24.3	25.5	29.5
Extremadura	0.1	0.1	0.1	0.7	0.1	0.2	0.2	0.1	0.2
Galicia	**1.0**	**1.3**	**0.5**	**0.7**	**2.2**	**1.4**	**0.4**	**1.9**	**1.1**
Madrid	46.4	40.6	46.0	39.4	40.2	43.5	42.9	35.3	41.5
Murcia	0.2	0.6	0.5	0.6	0.6	1.5	0.9	0.4	0.7
Navarre	**1.5**	**0.8**	**2.2**	**1.9**	**1.9**	**4.5**	**5.6**	**1.7**	**2.8**
Rioja	0.4	0.9	0.1	0.2	0.3	0.0	0.2	0.5	0.3
Valencia	2.5	2.7	2.2	2.2	8.7	4.6	1.7	6.3	3.9
Multi-regional	5.9	4.4	3.4	0.8	1.9	1.9	3.6	6.5	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Own elaboration using Boletín de Información Comercial Española data (various issues).

This focus has relegated the support of local firms and human resource strategies to the background. The problems of Galician firms, in general, and of those in the industrial sector, in particular, to compete in a more open market, are multiple. Most firms in Galicia are SMEs. In 1997, 99.6% of all Galician firms had less than 50 employees, whereas only 23 had more than 500 employees (IGAPE data). Given their size and also the skills of the workforce, most firms have little or no capacity to network with other firms in the same sector inside and outside Galicia. Many are still family owned and lack the adequate capital, the technology and the management capacities to adapt to recent structural changes. Poor internal organisation is an additional handicap. Large firms face identical problems of shortage of adequate technology, skills and management techniques and are hardly embedded in the local economic fabric. Although the establishment in Galicia of large shipbuilding, automobile, and metalworking industries in the 1960s had led to the genesis of a few related medium-sized firms, the relationship between the large firms and the Galician economy has been at best partial (Quintás 1993). Most large firms, like the shipyards (Astano and Bazán) in Ferrol, the Citroën car plant in Vigo, and the large energy plants rely heavily on technology, organisational skills, and suppliers located outside the region. In addition, some of these firms, and especially the two large shipyards, have traditionally depended on state contracts and subsidies for their survival. The progressive demise of these conditions since the 1980s has condemned many of the large and medium-sized Galician industries to closure.

This does not mean that Galicia is completely devoid of industrial dynamism. The rapid expansion of the textile group Inditex and of its high street retail group Zara, the success of the Galician fashion sector, and the successful restructuring of some fishing companies such as Pescanova, prove that dynamic companies are starting to appear. However, these cases are still the exception and not the rule.

Given these difficult conditions, it is no wonder that the regional government and other actors involved have shied away from a more active involvement in the support for local firms. And even when aid programmes have been put in place the results have been rather disappointing. The financial support to SMEs aid programme set up by the IGAPE has achieved meagre results. The number of SMEs applying for subsidised loans has declined year on year since the beginning of the 1990s (Meixide Vecino and Ares Fernández 1995: 201). The preferred – if more expensive – alternative has thus been the creation of public sector jobs, sheltered from the ups and downs of the market and from competition.

Human capital strategies have been fundamentally geared towards the increase of the overall educational attainment level of the population. The creation of the Universities of A Coruña and Vigo has been a significant milestone in this direction. However, both centres a few years after their establishment already suffer from many of the ailments of the Spanish higher education sector, and mainly from lack of resources. The two universities are, with that of Alicante, the Spanish universities with the lowest level of expenditure per student. In addition, the emphasis on a rapid expansion of higher education is provoking additional problems such as the lack of trainers and an increasing unemployment among young graduates, as a result of the mismatch between the type of education offered and the demands of the labour market (Rodríguez-Pose 1996a).

The failure to address effectively the problems of human resources and the regional production fabric is curtailing the effectiveness of the regional development policies based on infrastructure and FDI.

The failure to address effectively the human resource and the regional production fabric problems is, however, curtailing the effectiveness of the regional development policies based on infrastructure

and FDI. Foreign companies often find that the local production fabric is so weak that they have to rely on suppliers outside the region. Hence the principal reason to invest in Galicia and not in other regions is the size of the financial and other incentives offered by the regional government. New infrastructure is probably contributing more to channelling competing products and services into the region, putting additional pressure on firms which are still ill-prepared to compete in a more open market. Hence, the implementation of an unbalanced regional strategy is unlikely to yield sustainable development in Galicia in the foreseeable future.

5.2 Regional policies and growth in Navarre

The relatively limited amount of funds available – especially in comparison with Galicia – for regional development in Navarre has forced the institutional actors involved in the development of the region to adopt different strategies.

In contrast to the Galician case, infrastructure has been relatively low key in Navarre's development strategy. This does not mean that infrastructure projects have been completely disregarded. Important projects, such as the Northern and the Barranca highways and the tunnels of Velate, have been completed with the support of European Funds. Navarre's greater accessibility has certainly helped to keep infrastructure as a relatively minor development strategy.

The two main axes of the Navarran development strategy have been the support of existing firms and the attraction of FDI. Regional policy guidelines have been aimed, on the one hand, at the reduction of structural bottlenecks, and, on the other, at the strengthening the comparative advantages of the regional economic fabric as a means of not only creating employment, but also of attracting new investment (Rapún Gárate 1993: 310). In order to achieve these objectives, four specific policy areas have been pursued.

Firstly, the government of Navarre, mainly through the regional Ministry of Industry, Trade, Tourism and Employment, has set up a series of measures aimed at the support of new investment, the creation of employment, and the promotion of the relatively large SME sector in the region. These include certain tax abatements for new investment, subsidies for permanent job creation, soft loans for the development of technology and innovation or for the purchase of industrial land, and incentives geared towards the training of employees. These packages of subsidies and measures have become increasingly popular among firms (8). Most of these measures – with the exception of the tax abatements – do not differ greatly from those in place in Galicia. However Navarran firms have been both keener and more capable to take advantage of these packages than their Galician counterparts.

Secondly, in parallel to the financial incentives offered to firms, the regional government of Navarre – often in co-ordination with the Spanish government and with the co-financing of the EU – has developed a series of measures targeted at the improvement of the skills of existing human resources and of industrial relations in the region. Skills and training programmes have been set up with the needs of the local production sectors in mind. It comes thus as no surprise that many of the training

8) For example, in 1998, 188 grants were given with a total value of ESP5 113 million to support new investment, 80 grants for a total of ESP 407 million for employment creation, and 66 grants for a total of ESP 92 million for industrial SMEs.

measures implemented have been actively supported by the private sector. Higher education in the region has also tried to adapt its courses to the economic conditions of the region. Technical careers and economics have thus become strong fields of study in the recently created Public University of Navarre. And the private University of Navarre has a long tradition of excellence, especially in medicine. The effort in the promotion of technology by the Centro Europeo de Empresas e Innovación (European Business and Innovation Centre) and other agencies has also been considerable. R&D initiatives have been funded by the regional and national governments and the EU. The Technology Plan of Navarre is currently supporting the development of R&D in local firms, as well as contributing to the training of researchers in the private sector and in local universities.

Environmental protection and rural development make up the third area of the regional development strategy. The achievement of sustainable development in rural and urban zones and the promotion of environmentally friendly industrial activities have been the main lines of action of the Navarran Department of the Environment. Navarra has also pioneered sustainable rural development in Spain. Regional rural development programmes have been successful in generating alternatives to agriculture in rural areas. Rural tourism has grown exponentially during the late 1980s and early 1990s, but other environmentally friendly activities, such as organic agriculture and quality handicraft, have also flourished.

But perhaps the policy area in which Navarre has excelled is the fourth, in the attraction of FDI. Between 1988 and 1995, Navarre has been capable of attracting 2.75% of all FDI coming into Spain, with an economy which represents only 1.65 of the Spanish Gross Value-Added (Table 8). Most of this FDI has been concentrated in the industrial sector. A total of 93 of the largest firms in Navarre are owned or partially-owned by foreign investors. The majority of FDI comes from EU countries, and especially from Germany, France, the United Kingdom and Italy, although there is a considerable North American and Japanese investment. The single most important investment is the Volkswagen plant, which alone accounts for 28% of all Navarran exports and 45% of imports (Rapún Gárate *et al.*, 1995: 240).

The reasons behind the success of FDI in Navarre are multiple. Different regional development strategies have mutually reinforced each other, creating a virtuous cycle.

The reasons behind the success of FDI in Navarre are multiple. Incentives and subsidies offered by the regional government have played a part, but they are by no means the key to the success. The dynamism and competitiveness of Navarran SMEs, the skills of the labour force, the openness of the Navarran economy, and its accessibility to markets have been more significant factors in the attraction of FDI. Hence, different regional development policies have mutually reinforced each other, creating a virtuous cycle of regional development. Foreign investors have often been capable of finding partners and suppliers, as well as qualified workers locally. Foreign firms have thus become embedded in the region and contributed to the restructuring and the development of local firms, as well as to the attraction of new firms.

6. Conclusions

The success of regional development strategies depends on a series of factors which are often difficult to ponder. Geography, accessibility, economic and social structure, skills, institutions, politics and culture determine, to a greater or lesser extent, the success of development strategies. Hence comparing development strategies in two regions which differ significantly in geographical,

economic and social terms makes it difficult to assess to what extent any economic success is the result of the implementation of the policy or of the prior economic potential of the region. As a whole, the reasons behind the economic dynamism of Navarre and the lack of dynamism of Galicia during the last two decades may well lie outside the realm of development strategies and policies. Lack of economic agglomeration, a large rural population, lack of skills, poor accessibility, a weak and largely non-competitive industrial fabric – as in the case of Galicia – are factors which might limit the effect of even the best development policy. Promoting regional development in a region with already competitive firms and a highly qualified workforce – as in the case of Navarre – seems comparatively easy.

In addition, regional development is always a medium and long-term process, and some of the regional policies adopted by Galicia and Navarre are still too young to allow us to discern their possible future effects on local economic activity and economic growth. Therefore any conclusion about the impact of development policies on growth and convergence in both regions has to be dealt with caution.

However, structural problems do not hide the fact that an often hastily designed and piecemeal development strategy in Galicia has done very little to curb the relative decline of the region. The availability of funds for regional development has not been coupled during much of the period of analysis by the existence of a balanced development strategy. Too much emphasis was put on infrastructure, mainly because it was a visible and easy solution. However, relatively little political and economic effort has been made towards the promotion of endogenous resources and the support for the restructuring of local firms. These are policies notoriously more difficult to design and implement than infrastructure-driven strategies, but which are essential in the long-run for the genesis of greater economic activity and the creation of employment. And the fact that the emphasis has been put in one area of development policies has meant that different strategies have not been able to mutually reinforce each other as in the case of Navarra. Therefore, the prevalence of strategies based on infrastructure are so far yielding scarce results, since they seem to be contributing more to the opening of the region to competitive goods and products from elsewhere, than to introducing Galician good and services in national and international economic circuits.

One of the consequences of the lack of a balanced strategy in Galicia has been the progressive sheltering of the region's economy from market conditions.

One of the consequences of this lack of a balanced strategy has been the progressive sheltering of the region's economy from market conditions. The lack of success at generating economic activity and jobs in sectors other than non-market services is making the Galician economy more dependent on transfers from Spain and Europe and, at the same time, relatively impervious to changes in market conditions.

Paradoxically, in the case of Navarre the relative lack of resources devoted to development may have acted in the region's favour. Since setting up a strategy fundamentally based on infrastructure was impossible, the institutional actors involved have had to use the resources available in a more balanced way. The establishment of clear and viable objectives from the start has contributed to the success of policies, although the increasing regional debt looming in the horizon may jeopardise some sections – and most notably the financial incentives – of the regional development strategy.

The experience of Galicia constitutes a warning for other regions trying to implement partial development strategies based fundamentally on infrastructure. Navarre shows that more balanced and tailor-made strategies need to be encouraged.

To what extent can the experience of these regions be generalised to others? The experience of Galicia constitutes a warning for other regions trying to implement partial development strategies based fundamentally on infrastructure. In this sense the case of Galicia does not differ significantly from some of the development policies conducted in less developed regions during the 1950s, 1960s, and 1970: top-down approaches with infrastructure at the centre, which became in fact more of a short-term social policy than a long-term development strategy. The success of regional policy in Navarre shows that more balanced and tailor-made strategies which address the competitive advantages as well as the weaknesses of each region need to be encouraged. Only if development problems are addressed in a comprehensive and encompassing way lagging regions may have a chance to set the foundations for future economic development. Concentrating exclusively in one or two policy areas and hoping that other development problems will wither away may, at best, yield little or no result, and, at worst, increase the dependency on transfers and on an increasingly swollen public sector. The Navarran strategy is certainly not an easy alternative, especially for less developed regions, but it is perhaps the only way to prevent current regional development strategies from becoming just a means of income support in many problem regions.

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Freiburg
AUSTRIA
SWITZERLAND
BERN
VADUZ
LIECHTENSTEIN
ITALY
0 km
50 km
100 km
200 km
300 km

Ten years after: Eastern Germany's convergence at a halt?

Margarethe Quehenberger

1. Introduction

A decade after German unification and the establishment of monetary, fiscal and social union between Western and Eastern Germany (1), it is time to take stock of the economic convergence reached so far, and to assess the prospects for further productivity catch-up. These issues are naturally of keen interest to German taxpayers - who are well aware that high fiscal transfers to the New Länder will not decline as long as their productivity trails behind Western German levels and unemployment stays at about 20%.

For economists the case of Eastern German convergence is of particular interest as a near text book example of the "big bang" reform of a planned economy. Legal and institutional reform, price adjustment and integration into world markets were practically achieved overnight. Privatisation was rapid, and by early 1995, some 95% of Eastern German employees already worked in private enterprises (DIW *et al*., 1999). Because of the speed of this process, the pre-dominance of transition-related effects can be considered to have come to an end within a few years.

The main features of the regional adjustment process, in particular high wages and the massive subsidisation of investment has put Eastern Germany in a league of its own. It is not atypical for a lagging region that wages increase more rapidly than productivity levels. However, circumstances are rarely as extreme as in Eastern Germany. Already by 1992, gross wages were comparable to those in the US while productivity levels were at Mexican levels (Siebert, 1993). Similarly, lagging regions normally receive fiscal transfers from richer regions. However, the size of German transfers can be seen from the comparison with another well-known case of a depending region, Italy's Mezzogiorno. While net fiscal flows to the Italian South have been estimated to amount to nearly one-fifth of the Mezzogiorno's GDP per year (Boltho *et al*., 1996), the flows to Eastern Germany were as high as one-third of the former GDR's GDP.

It should be emphasised that the case of Eastern Germany is not comparable to the convergence process for groups of countries that are relatively similar in terms of factor endowments and institutional arrangements. Therefore, the relatively robust prediction from the economic growth literature that economies converge to their long-term growth paths at about 2% per annum, only yields limited insights. Though Barro (1991) predicted that "*it will take about 15 years to eliminate one-quarter of the [per capita] income gap*", this was achieved in only a few years.

However, for the last five years labour productivity has hovered at a figure that is only a little over one-half the level in Western Germany. Putting this together with the poor employment performance means that real Eastern German GDP growth has dropped below that in Western Germany. This is shown in Table 1. There is no consensus on the reasons for this remaining productivity gap (see DIW *et al*., 1999, p 83ff). Possible explanations range from firm size (Beer and Ragnitz, 1997), branch

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1) On 3 October 1990 the unification treaty came into effect. Monetary Union was implemented by 1 July 1990.

structure (Rothfels, 1997), utilisation rates (Görzig quoted in Ragnitz *et al.*, 1998), the heterogeneity of factor endowments (Dietrich, 1997), R&D spending (Felder and Spielkamp, 1998), to managerial and organisational deficiencies (Mallok, 1996, Bellmann and Brussig, 1999, Ragnitz *et al.*, 1998, Müller *et al.*, 1998). However, no strong evidence in any direction has been found.

Table 1. Real GDP growth, annual percentage change

	1991	1992	1993	1994	1995	1996	1997	1998
Eastern Germany	-19.2%	7.8%	9.4%	9.6%	4.4%	3.3%	1.7%	2.0%
Western Germany	5.0%	1.8%	-2.1%	2.1%	0.9%	1.1%	2.3%	2.8%

Source: German Federal Statistical Office.

This paper gives an overview of the state of convergence (Section 2) and assesses the prospects for further productivity catch-up. To this end, an econometric analysis of the adjustment process in the manufacturing industry is presented (Section 3). Section 4 concludes with some observations regarding future policy. Throughout the paper Western Germany will serve as the benchmark.

Box 1. East and West compared

1998		Eastern Germany	Western Germany	EU-15
Area	Km^2	108 083 *(30%)*	248 939 *(70%)*	3 230 544
Population	1000	15 290 *(19%)*	66 747 *(81%)*	374 584
Population density	Population per km^2	141	268	116
Employment	1000	6 544	29 317	126 715
Employment share	% of population	43	44	34
Unemployment	% of work force	19.5	10.5	10.2
GDP	bn DEM	429	3 329	14 936
GDP/capita	DEM	28 064	49 875	39 874
	EU-15=100	70	125	100
GDP	bn DEM	422	3 213	13 779
Of which:				
Agriculture	%	2	1	3
*Industry **	%	34	33	30
Market services	%	45	53	52
Non-market services	%	19	13	15
GDP per employee	DEM	64 370	112 975	108 740
	EU-15=100	59	104	100
Export share	% of GDP	9	28	32
Investment share	% of GDP	43	18	18

* Industry here defined as manufacturing, construction, mining and energy.

Source: German Federal Statistical Office, DIW, Eurostat.

2. Ten years of transition and economic adjustment

2.1 The main features of the Eastern German economy

The main driving forces behind Eastern German convergence have been fiscal transfers and the wage growth that has accompanied them.

Details of the relative sizes of Eastern and Western Germany are given in Box 1. Though regional production per capita in Eastern Germany is still only a little over one-half the Western figure, incomes had already reached almost 90% of the Western German level in 1994. The remaining gap of around DEM 200 billion, equivalent to the regional current account deficit, is financed by transfer payments, private sector capital inflows, and borrowing by the regional governments of the New Länder (2). The largest element comes from the federal government. Over the last few years, these amounted to DEM 140 billion per annum, or 4½% of Western German GDP. Thus, fiscal transfers have financed about three-quarters of the Eastern German income gap (DIW *et al.*, 1999). Indeed, the main driving forces in the evolution of the Eastern German economy have been these transfers and the wage growth that has accompanied them.

A "high wage strategy" was adopted at unification (Sinn and Sinn, 1991). One logic was that this was only another part of the "big bang" price reform. However, high wage levels in the East were also motivated by concerns over mass migration to the West, and by the fear of West Germans (both employers and employees) of competition from a "low wage" region within the country. Table 2 shows that nominal wages had already reached 60% of the Western German level by 1992. This was far above the productivity differential, and relative unit labour costs stood at almost 140%. Unemployment grew rapidly as a result. In particular, the tradables sector was hit by the wage cost pressure, while at the same time being exposed to international competition. The manufacturing industry virtually broke down, and some 70% of manufacturing jobs had been lost by 1995.

Table 2. Eastern Germany: Labour market indicators

	1991	1992	1993	1994	1995	1996	1997	1998
Gross nominal wages (W. Germany = 100)	46,7	60,7	67,9	70,5	72,5	73,6	74,4	73,7
Unit labour cost (W. Germany = 100)	150,6	139,4	128,0	126,0	126,5	124,0	123,2	124,0
Employment (y/y change in %)	- 17.0	- 12.8	-2.6	1.8	1.0	-2.0	-3.0	-0.3

Source: DIW *et al*. (1999), Spitznagel (1999)

Employment has only fallen slightly in recent years, and has stabilised at around 6 million. However, this figure includes nearly 1 million people that are covered by social policy or active labour market measures (such as training programmes). Together with the about 1.4 million persons registered as unemployed in 1998, this suggests that there is a lack of almost 2½ million jobs in Eastern Germany (DIW *et al*., 1999). This job deficiency has remained high even though net migration from the Old Länder has lowered the available work force (3). However, the participation rate (labour supply in relation to work age population) of 74% in 1998 in Eastern Germany -

2) Sinn (2000) draws attention to the enormous increase in public debt in the New Länder, in addition to their transfer-dependency. Per capita debt of the Eastern German municipalities and Länder had surpassed the respective Western German level by 1998, although they had started with practically no debt in 1990 (Seitz, 1999).

3) There was migration from Eastern to Western Germany of about 1.4 million persons in the first years after the fall of the Berlin wall (Sinn, 1995).

although declining - remains higher than the 69% in Western Germany (Pohl, 1999) and employment as a share of population is almost as high in Eastern as in Western Germany (Box 1).

Still, contrary to initial predictions, Eastern Germans are far from reaching wage parity with Western Germans. In 1998, wages were 74% of the Western German level, and in manufacturing the hourly wage rate was only 62% that of Western Germany (DIW, 1999 and 1999a). *De facto* the wage bargaining process in Eastern Germany is deviating progressively from the pattern prevailing in Western Germany. This is associated with "emergency" provisions (*Oeffnungsklauseln*) agreed by unions, concession bargaining at the firm level, and the fact that fewer firms participate in the collective bargaining process or adhere to its agreements. The result is that wages in Eastern Germany have become somewhat more sensitive to firm conditions than in Western Germany (Franz and Steiner, 1999), though unit labour costs have remained relatively stable at about 120% of the Western figure (see Table 2).

Transfers were also used to support an investment boom, either with public investment or through subsidies for private investment.

In-line with the high wage strategy, social entitlements were also aligned with those in the West. In some cases, such as the valuation of pension contributions, this was done in a favourable way for Easterners (4). Most social payments (such as unemployment benefits, pensions and the like) are automatic. Table 3 shows the breakdown of transfers to Eastern Germany in more detail. In 1998, as much as 44% of gross transfers were social transfers. In fact, a large share of the other transfers have also followed more-or-less automatically from existing German legislation. Only one-quarter of net transfer payments have been based on specific provisions for Eastern Germany (DIW *et al.*, 1999).

Transfers were also used to support an investment boom, either with public investment or through subsidies for private investment. In fact, the figures in Table 3 do not include the full range of subsidy instruments. A more comprehensive analysis, which also takes into account tax credits and preferential depreciation for investment in Eastern Germany by Edler *et al.*, (1998), shows that Eastern Germany received total investment subsidies of DEM 68 billion in 1996, rather than the DEM 15 billion of Table 3. Moreover, investment has been promoted by the privatisation policy. When state-owned enterprises were sold, an important criterion in the evaluation of competing bids was the commitment of the purchaser to investment which would raise the capital stock per employee to that typical for similar enterprises in Western Germany (Carlin and Mayer, 1992). Given the enormous capital subsidies, Sinn (1995) has estimated that the cost of capital for industrial investment was even negative.

Table 3. Transfer payments to Eastern Germany in billion DEM

	1991	1992	1993	1994	1995	1996	1997	1998
Gross Transfers	**139**	**151**	**167**	**169**	**185**	**187**	**183**	**189**
Social Transfers	56	68	77	74	79	84	81	84
Investment subsidies	8	10	11	17	18	15	14	16
Public investment	22	23	26	26	34	33	32	33
Payments to local authorities	53	50	53	52	54	55	56	56
Revenues	33	37	39	43	45	47	47	48
Net Transfers	**106**	**114**	**128**	**126**	**140**	**140**	**136**	**141**

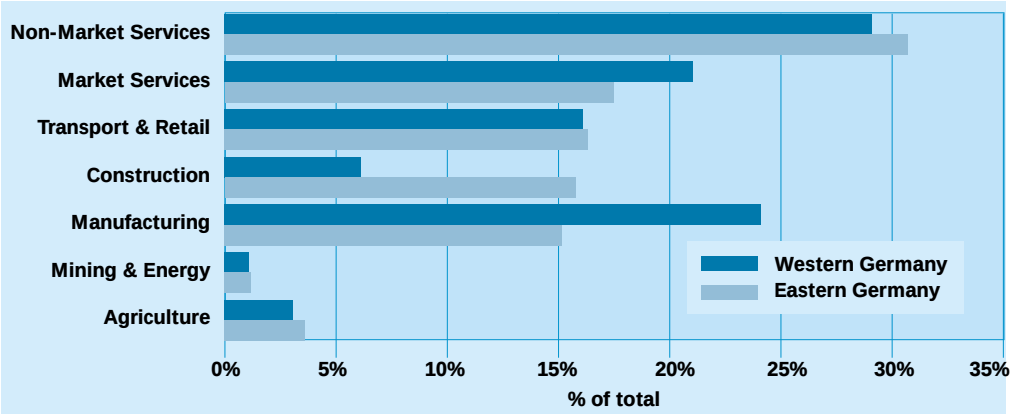
Source: DIW *et al*. (1999)

4) Eastern German household pension income is 11% higher, in nominal terms, and 20% higher, in real terms, than the Western German one, since labour force participation of women is higher and since an overly favourable formula for the translation of GDR claims into the Western German pension system was chosen. (Sinn, 2000).

The state of infrastructure in the GDR was much worse than in Western Germany (DIW *et al.*, 1999). In particular the telecommunication network and the quality of roads in the GDR required enormous investments to bring them towards Western German standards. By 1997, some DEM 146 billion of public money has been invested in infrastructure, half of which went to transport, one third to telecommunications and the remainder to energy, water and waste water treatment. While telecoms has caught up with the West, there remains a significant quality gap in road and water treatment (Edler *et al.*, 1998) (5).

Though the tradables sector suffered from competition, high wages increased demand for local services and the retail trade and transport sectors grew to a size comparable to that of Western Germany. These sectoral distortions led to an employment structure that deviates markedly from the Western German benchmark with regard to the relative size of the manufacturing (6) and construction sectors. This is shown in Figure 1. Together these two sectors account for about 30% of total employment in both regions. However, the Eastern German construction sector is 2 1/2 times bigger than that in Western Germany, while the employment share of the manufacturing sector is only 60% of the Western German figure.

Figure 1. Employment in Eastern and Western Germany according to sectors, 1998



Data Source: German Federal Statistical Office

2.2 Labour productivity and capital intensity

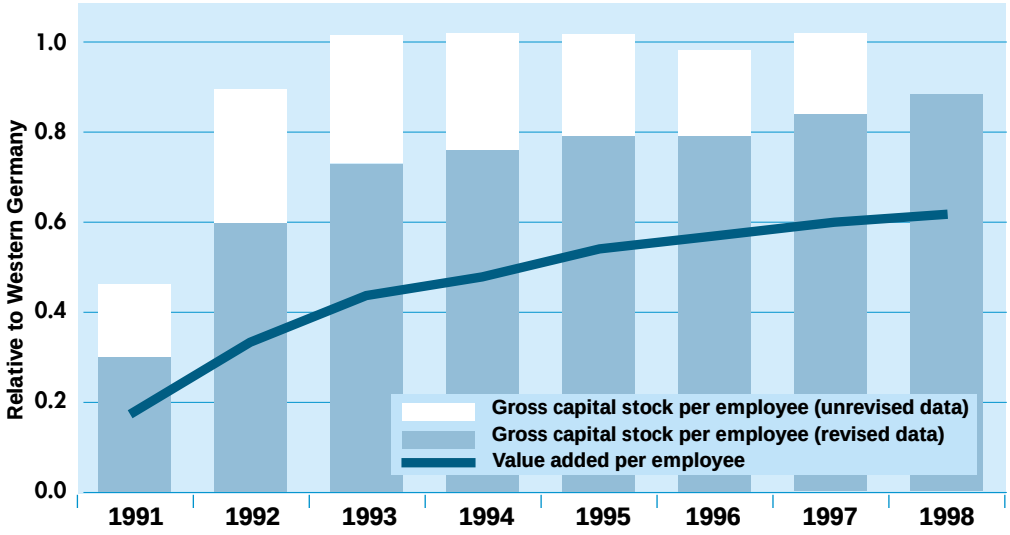
Sectoral distortions led to an employment structure that deviates markedly from Western Germany.

During the period from 1991 to 1998 investment in Eastern Germany grew at an annual rate of 7% on average, three times higher than in Western Germany. In 1998, investment as a share of GDP in Eastern Germany amounted to 43% (Müller, 2000). Following this, the stock of capital equipment in Eastern Germany is, in quality terms, as new and modern as in Western Germany. In aggregate terms, the capital intensity, or capital labour-ratio, was about three-quarters the Western level in 1997. However, there has been an ongoing debate regarding the capital-labour ratio that exists (7), and the capital stock data in Eastern manufacturing has recently been revised downward

5) A forecast by the DIW with regard to the relative infrastructure intensity, using a composite index, estimates a remaining gap of one-quarter with respect to transport, and a 60% gap with respect to waste water treatment (Edler et al.*, 1998).*
6) Here the manufacturing sector is defined to be the core tradeables sector, also referred to as industry, plus crafts.
7) The main reasons are that the Eastern German capital stock was initially valued at Western German market prices and the low utilisation rate of buildings.

by the DIW. Whereas the old data showed the capital intensity in Eastern German manufacturing had already reached Western German levels in 1993 (DIW *et al.*, 1999), the revised data (DIW, 1999) document a more moderate increase in the relative capital-labour ratio. Figure 2, showing the capital-labour ratio from both the old and the new data series gives an idea of the magnitude of this revision. In any case, the adjustment to manufacturing does not have a significant effect on the aggregate economy-wide ratio due to the relatively small size of manufacturing.

Figure 2. Relative capital to labour ratio and relative labour productivity of Eastern German manufacturing



Data Source: DIW *et al.*, (1999) for unrevised data; DIW (1999)

Table 4 summarises data (from various sources) on Eastern German investment and capital stock relative to the Western German benchmark. The progress in convergence with regard to capital intensity is illustrated for the total regional economy level and for manufacturing.

As a result of the subsidy schemes, building investment accelerated far ahead of equipment investment in Eastern Germany.

Table 4 also shows that building investment, not least as a result of the subsidy schemes (8), accelerated far ahead of equipment investment. Though the building stock per work-aged person already amounts to 89% of the Western German level, the stock of equipment per work-aged person is some 60% (Müller, 2000). Moreover, the combination of high wages and capital subsidies favoured investment in very capital intensive sectors since they gained most from capital subsidies, and could more easily compensate for high wages (Sinn, 1995). Gerling (1998) supports this view with econometric evidence that subsidies resulted in significant substitution between capital and low-skilled labour. For the period 1991 to 1996 she shows that investment in the manufacturing sector in Eastern Germany has been biased towards capital-intensive industries. In 1997, the ten most capital intensive branches of manufacturing accounted for 46% of the Eastern German gross capital stock, whereas their share in Western Germany was only 37% (DIW *et al.*, 1999).

8) In particular the special depreciation allowance fostered building investment.

Table 4. Investment and capital intensity, Western Germany = 100

	1991	1992	1993	1994	1995	1996	1997	1998
Building investment								
Per work-aged person (a)	72	105	132	163	174	178	177	163
Equipment investment								
Per work-aged person (a)	62	76	102	112	110	111	102	90
Gross capital stock								
Per employee (b)	46	n.a.	n.a.	62	n.a.	n.a.	73	n.a.
Gross capital stock								
in manufacturing								
per employee (c)	30	59	73	76	78	79	84	89

Sources: a) Müller (2000) presenting an ifo-Munich estimate.
Work-aged persons are defined as the population aged 15-65 years.
b) DIW *et al*., (1999) which rely on an estimate by the Institut für Weltwirtschaft, Kiel.
c) DIW (1999)

Tables 5 and 6 show in more detail the effect on sectoral productivity patterns already alluded to before. Table 5 presents the nominal data, and reveals that the most rapid gains in relative productivity were observed in manufacturing. Whereas the other sectors - except for agriculture - increased productivity between 1991 and 1998 by a factor of roughly 1.7 to 1, manufacturing increased by a factor of 3.3. From Table 6 we learn that the latter factor even applies in real terms, which implies that the average gap between Eastern and Western price levels remained rather constant for manufacturing goods over the time span considered. Indeed, relative producer prices in Eastern German manufacturing have only increased by 1.6 percentage points between 1991 and 1998.

For the other sectors, the different convergence patterns presented in the two tables arise because the relative price levels did not remain constant.

Against this backdrop, Müller (1999) found a difference between Eastern and Western German producer price levels of 12% for overall Eastern German output in 1995. In manufacturing the price gap is particularly wide. For rather disaggregated groups of commodities in manufacturing, he reports an average producer price gap between Eastern and Western German products of 28% in 1995.

At least for the tradables sector, which accounts for two-thirds of the manufacturing industry and in which prices can be assumed to be determined on the world market, these price differentials must be interpreted as quality gaps (Paqué, 1998). Surveys confirm that Eastern German firms specialise on lower quality products (DIW *et al*., 1999). Thus, at least in the tradables sector, a catching-up in relative prices would indicate convergence. For non-tradables, by contrast, prices are determined by local demand and supply conditions and market structure is an important determinant of the price level.

Table 5. Eastern German value added per employee, Western Germany = 100

	1991	1992	1993	1994	1995	1996	1997	1998	1998/ 1991
Non-market services	50	62	72	75	78	80	82	85	1.7
Market services	28	36	42	42	42	43	44	45	1.6
Retail and Transport	30	39	46	48	51	52	52	52	1.7
Construction	49	62	68	76	77	78	77	83	1.7
Manufacturing	19	30	41	48	52	55	59	62	3.3
Agriculture	44	55	64	62	60	59	55	52	1.2
Total	**31**	**43**	**52**	**54**	**56**	**57**	**58**	**59**	**1.9**

Source: German Federal Statistical Office

Table 6. Eastern German real value added per employee, Western Germany = 100

	1991	1992	1993	1994	1995	1996	1997	1998	1998/ 1991
Non-market services	50	49	50	50	51	52	53	55	1.1
Market services	35	40	41	41	41	41	42	39	1.1
Retail and Transport	30	36	41	43	45	46	46	45	1.5
Construction	49	56	58	63	63	63	63	63	1.3
Manufacturing	19	31	42	49	53	56	61	63	3.3
Agriculture	44	54	74	74	71	70	65	64	1.5
Total	**31**	**38**	**43**	**45**	**45**	**46**	**47**	**47**	**1.5**

Source: German Federal Statistical Office

2.3 Eastern Germany's convergence at a halt?

Several features indicate that the convergence process has come to a halt.

Overall, several of the features just described could indicate that the convergence process has come to a halt. To re-cap, there are three main points for concern.

Firstly, since 1997 Eastern GDP growth has dropped below that in Western Germany. This is also confirmed by preliminary figures for 1999, and the joint forecast of Germany's six economic research institutes (published in autumn,1999) for the year 2000. Only in the first few years after the transition recession did GDP growth, amounting to almost 9% on average between 1992 and 1994, strongly support convergence.

Secondly, the withdrawal of some capital subsidies seems to have severely slowed investment (9). In 1998, equipment investment per work-aged person has been lower in Eastern Germany than in Western Germany (see Table 4). Sinn (2000, p. 20) argues that high wages are the root of the problem: *"It explains why the investment in equipment has been so low (and the investment in buildings has been so high) despite the negative cost of capital which the public subsidy programmes implied. The high wage level is a fundamental brake that has been imposed on the*

9) By 1997, the special depreciation allowance was abolished and the investment grant reduced.

East German economy right from the beginning. Now that the driving force of the investment subsidy programme is no longer available, it has brought the adjustment process to a halt. The East Germans simply priced themselves out of the market".

Thirdly, sectoral patterns give rise to concerns about the prospects of further overall convergence. Market services and manufacturing appear to be key sectors for a balanced and sustainable development. As illustrated in Figure 1, these two sectors account for 45% of total employment in Western Germany, but only for 32% in Eastern Germany. The gap in productivity in manufacturing is particularly sobering given the radical selection process that has taken place during the first years of transition, and that this sector has gained most from capital subsidies. With its comparatively small size and high capital-labour ratio, the productivity gap in manufacturing could have been expected to be much below average. Indeed, both Klodt (1999) and Sinn (2000) have concluded from the unrevised (1997) data on relative capital intensity and labour productivity at the manufacturing branch level that the catch up in labour productivity has come to a halt.

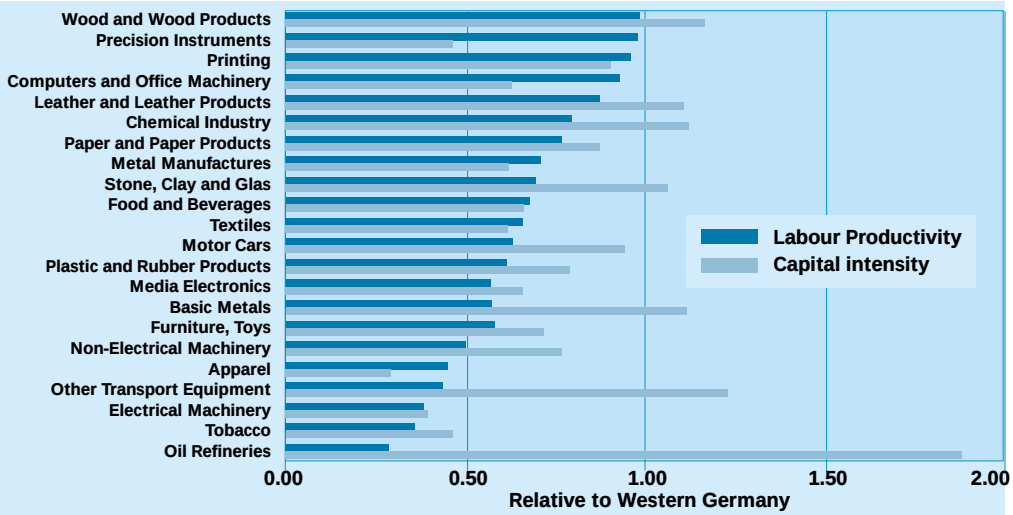
The productivity gap in manufacturing is particularly sobering given the radical selection process that has taken place.

Figure 3 (using the revised data), in which branches are ordered according to their relative labour productivity, reveals the large diversity with regard to capital intensity and labour productivity in the manufacturing industry. Real value added per employee ranges from 28% to nearly 100% of the Western German level. Note that there are already four industries that approach Western German productivity levels, namely wood and wood products, precision instruments, printing, and computer and office machinery - but none is above the Western German benchmark (at least at this level of disaggregation). Capital intensity in the precision instruments industry, however, does not even reach half the capital-labour ratio of its Western German counterpart. At the same time, there are industries (such as oil refineries, other transport equipment and basic metals) whose capital intensity is well above the Western German level, but whose labour productivity is far below - in two cases it does even not reach half of the productivity of the Western German counterpart.

Klodt (1999) found that the correlation coefficient between the relative labour productivity and the relative capital intensity between Eastern and Western German manufacturing industries was negative, albeit insignificant, in 1997. He criticises the allocative distortions created by high capital subsidisation, which led to excessively capital intensive structures accompanied by low utilisation rates. Sinn (2000) takes the same (unrevised) data used by Klodt as empirical evidence for Eastern Germany moving to a long run equilibrium in which, contrary to the standard neo-classical predictions, Eastern German labour productivity remains below the Western German level. This "perverse" adjustment pattern, where higher capital intensity is accompanied by lower labour productivity, follows from the assumption of negative real cost of capital for industrial investment.

Though the data revision was principally a general downward revision of the capital stock level in all branches, the question remains as to whether the new adjusted data still supports these conclusions. Likewise, does a time series approach give the same results? In order to untangle the relationship between output and investment in more detail, we turn in the next section to a growth accounting exercise.

Figure 3. Relative capital intensity and labour productivity in Eastern German manufacturing industries in 1998



Data Source: DIW (1999)

3. Productivity growth and the return on capital in the manufacturing sector

The issue, therefore, is whether the adjustment process has been efficient in that capital accumulation has increased labour productivity and that technical efficiency has systematically improved. Following the observations above, we restrict the analysis to the manufacturing sector. It is also the sector where data availability is by far the best.

Adopting the standard approach, it is assumed that the manufacturing industry can be adequately represented by a Cobb-Douglas production function,

(1) $$Y_t = A_t \cdot K_t^{\alpha} L_t^{1-\alpha}$$

where Y_t, K_t and L_t are output, the capital stock and labour at time t. The term A_t reflects the level of technology and is also referred to as total factor productivity (TFP). After taking logarithms and differentiating with respect to time it follows that:

(2) $$\frac{\dot{Y}}{Y} = \frac{\dot{A}}{A} + \alpha_t \frac{\dot{K}}{K} + (1-\alpha_t)\frac{\dot{L}}{L}$$

in which a dot above a variable indicates a time derivative. Thus, output growth is equal to the growth rate of total factor productivity plus a weighted average of the growth rates of capital and labour. If perfect competition prevails, then the marginal product of each input equals its factor price. In this case:

(3) $\alpha = \frac{rK}{Y}$, the capital share of output; and,

(4) $1-\alpha = \frac{wL}{Y}$, the labour share of output; and,

where r is the rate of return to capital and w is the wage rate. Of course, the assumptions of perfect competition r and constant returns to scale are strong ones, particularly in a transition context (see EBRD, 1997, and Stephan, 1998). Any figures emerging from the use of this framework must therefore be interpreted with caution.

We start with a standard growth accounting exercise for the manufacturing sector in total. This takes the observed capital share in output as an estimate for the coefficient α. We then use more disaggregated data to estimate the model parameters.

3.1 Total factor productivity growth

Using the latest data (DIW, 1999), the wage share of manufacturing output in Eastern Germany is 80% for the period from 1991 to 1998 (thus implying the capital share, or α, equals 0.2). For the period from 1995 to 1998, when growth can be considered more market driven, the wage share falls to 69%. This value is in line with the traditional observation for a wide range of market economies that the wage share is 70% (or that α equals 0.3).

Table 7. Capital shares and rates of return to capital in Eastern and Western German manufacturing

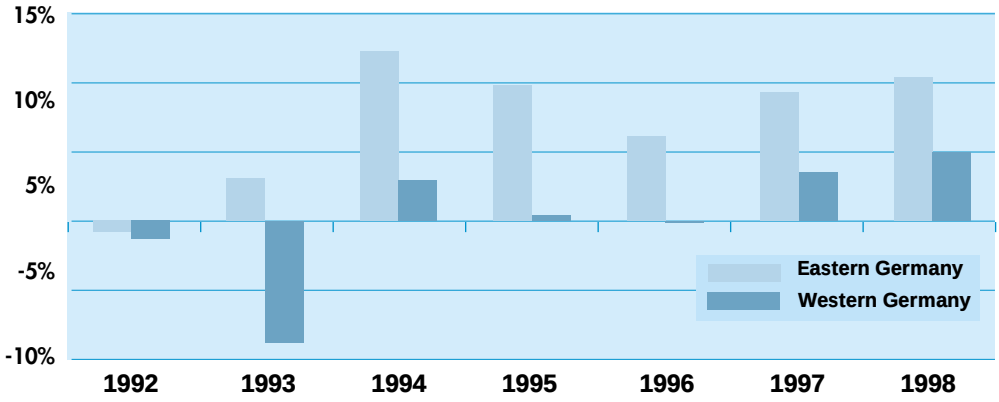
	Eastern Germany		Western Germany	
	1991-98	1995-98	1991-98	1995-98
Capital share (α)	0.20	0.31	0.38	0.40
Rate of return (r)	5%	8%	15%	16%

Source: Author's calculation from data in DIW (1999)

Even if the cost of capital was negative it appears that projects with positive rates of return have been chosen on average.

Equation 3 immediately provides an estimate for the rate of return to capital. With the new capital stock estimates, the rate of return in Eastern German manufacturing averaged 5% over the period. It has increased to 8% over the last few years, still only one-half the estimate for Western German manufacturing. However, it is interesting to note that, even if the cost of capital was negative (as argued by Sinn, 1995 and 2000), projects with a positive rate of return appear to have been chosen on average (Table 7).

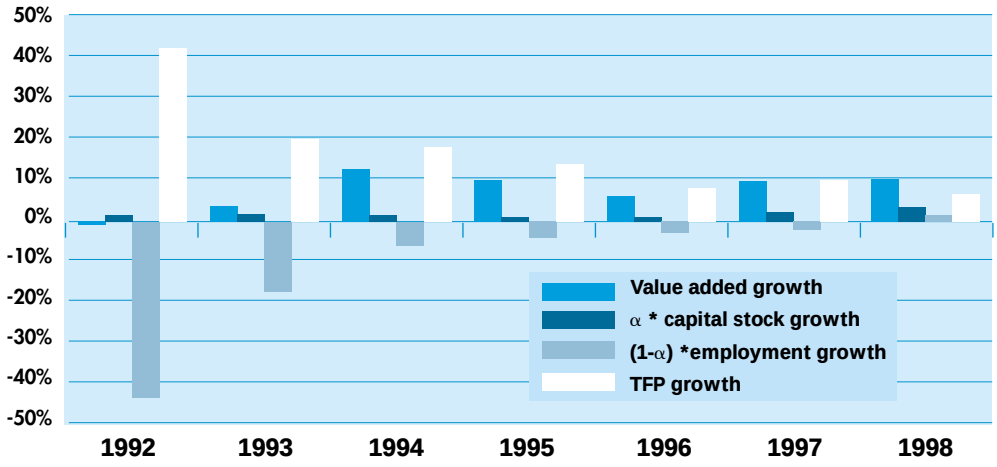
Figure 4. Value added growth in Eastern and Western German manufacturing



Data Source: DIW (1999)

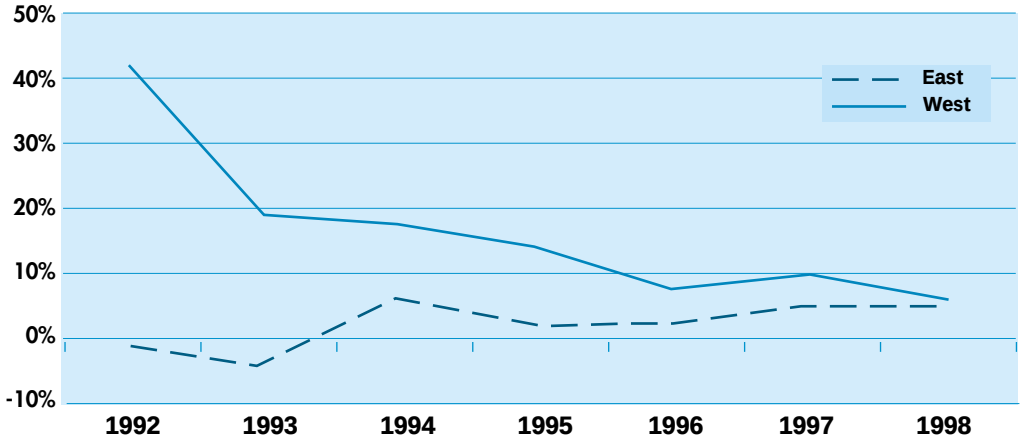
Value-added in manufacturing in Eastern Germany has grown faster than in Western Germany, including the last few years when overall GDP growth was lower in Eastern Germany (Figure 4). Taking the observed average value of α, we can also estimate the contribution to this growth from capital accumulation and TFP using equation 2. This is summarised in Figure 5. This shows that TFP growth in Eastern German manufacturing has been high, though decreasing. The tremendous increase in the total factor productivity in Eastern Germany in the early 1990s is not surprising. This coincides with massive layoffs and the closure of the least profitable businesses. Here, TFP change is capturing a change in average performance rather than technology improvement. In fact, employment growth has made a positive contribution only for the first time in 1998. Capital accumulation, which contributed positively over the whole period, explains about one-quarter of value added growth in 1998. In this last year, the major determinant of growth in manufacturing still remains total factor productivity which accounted for almost two-thirds of output growth.

Figure 5. Growth of value added in Eastern German manufacturing and the respective contribution of capital, labour and TFP growth



Source: Author's calculation from data in DIW (1999).

Figure 6. TFP growth in Eastern and Western German manufacturing



Source: Author's calculation from data in DIW (1999)

The decline of TFP growth means that it is now approaching the Western German figure. This is shown in Figure 6. Indeed, the margin between East and West has fallen to only one percentage point in 1998. If sustained, the future catch-up in the manufacturing sector will depend increasingly on relatively faster capital accumulation.

3.2 An econometric exercise

To take the analysis a bit further, we use panel data on industrial branches to estimate the production function given above. By reformulating equation (1), labour productivity, expressed in logarithmic terms, is given by:

(5) $\ln y = \ln A + \alpha \ln k$, where $y = Y/L$ and $k = K/L$

Panel data (10) that cover 8 years (1991 to 1998) and 22 manufacturing branches (2-digit level of the NACE classification) have been used. Equation (5) was estimated by taking into account fixed effects, which removes the restriction that different industries must have the same technology. The coefficient, α, is assumed to be stable over the entire period, and a dummy variable for each year was used to estimate the change in TFP from year to year. The results are shown in Table 8 (11).

Table 8. The determinants of labour productivity

Dependent variable	α	1992	1993	1994	1995	1996	1997	1998	R^2
$\text{Ln } y_{east}$	0.46 (0.16)	0.29 (0.11)	0.46 (0.15)	0.66 (0.17)	0.78 (0.18)	0.85 (0.18)	0.93 (0.21)	1.01 (0.22)	0.90
Implied TFP growth			19%	22%	13%	7%	8%	8%	

Notes: Least squares, fixed effect estimate of equation 5, standard errors in brackets.
All coefficients are significant at the 1% level.

The value of α emerging from this regression, at 0.46, is above capital share of output given in Table 8. This would also imply a higher rate of return for capital (12). However, this estimation may be flawed. There are almost three times as many sectors as time series observations, posing a problem for the reliable estimation of fixed effects. As a check, the model was also estimated without fixed effects. This resulted in an α that is much smaller, at about 0.12. The true size of the coefficient is likely to lie somewhere between this range, but we cannot say more about its specific value. As in the growth accounting exercise, TFP explains a significant part of labour productivity growth, although the increases in technical efficiency become smaller over time. In order to test the robustness of results, equation (5) has also been estimated with labour productivity defined as the ratio between East and West Germany and in first differences. Box 2 provides details.

10) From DIW (1999). Values are expressed in DEM and 1995 prices.
11) The regressions have also been run without the outlier of oil refineries. However, the size and significance of the coefficients hardly changes when this is omitted. Similar results are also found using the unrevised capital stock data for the period 1991-1997.
12) The rate of return would be of the order of 12% - still below the Western German level.

Increased capital intensity had a significant and positive impact on labour market productivity.

One cannot make too much of the magnitudes of the estimated coefficients given the large number of assumptions involved. However, the regression results and their robustness do indicate that the increased capital intensity had a significant and positive impact on labour productivity, though it is likely that the rate of return on investment was lower than in Western Germany. The regression results also confirm the findings of the growth accounting exercise with regard to the important (though rapidly decreasing) role of technological change as a determinant of labour productivity.

Box 2. The determinants of relative labour productivity

Adapting equation 5 in the main text, the relative labour productivity of the Eastern German manufacturing industry in relation to that in Western Germany is given by:

$$\ln y_e - \ln y_w = \ln (A_e/A_w) + \alpha_e \ln k_e - \alpha_w \ln k_w$$

where $\ln (A_e/A_w)$ represents the technological gap between the Eastern and the Western German manufacturing industry. If $\alpha_e = \alpha_w = \alpha$, then the above equation can be reformulated: $\ln y_e - \ln y_w = \ln (A_e/A_w) + \alpha \ln (k_e/k_w)$. Before implementing this restriction, the null-hypothesis of equality of the coefficients α_e and α_w has been tested in the unrestricted estimate and could not be rejected. The results of this restricted regression are as follows:

Least squares, fixed effects estimate

Dependent variable	α	1992	1993	1994	1995	1996	1997	1998	R^2
$\ln (y_e/y_w)$	0.58 (0.14)	0.23 (0.09)	0.41 (0.12)	0.56 (0.13)	0.66 (0.13)	0.72 (0.14)	0.75 (0.15)	0.76 (0.15)	0.91
Implied rate of closing of the technological gap between East and West			20%	16%	11%	6%	3%	1%	

Standard errors in brackets. All coefficients are significant at the 1 per cent level.

And in first differences:

GLS (cross-section weights)

Dependent variable	α	Constant	1993	1994	1995	1996	1997	1998	R^2
$\ln (y_e/y_w)_t - \ln (y_e/y_w)_{t-1}$	0.49 (0.07)	0.30 (0.05)	-0.11 (0.04)	-0.16 (0.05)	-0.19 (0.05)	-0.26 (0.05)	-0.27 (0.05)	-0.29 (0.15)	0.90
Implied rate of closing of the technological gap between East and West			19%	14%	11%	6%	3%	1%	

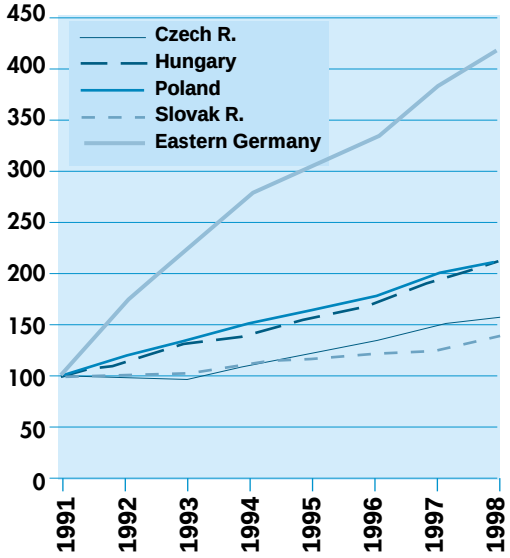
Standard errors in brackets. All coefficients are significant at the 1% level.

As can be seen from the coefficients of the time dummies, the rate of technology catch up has declined rapidly. This again confirms the important, but diminishing role of technical change as a determinant of labour productivity.

4. Conclusions

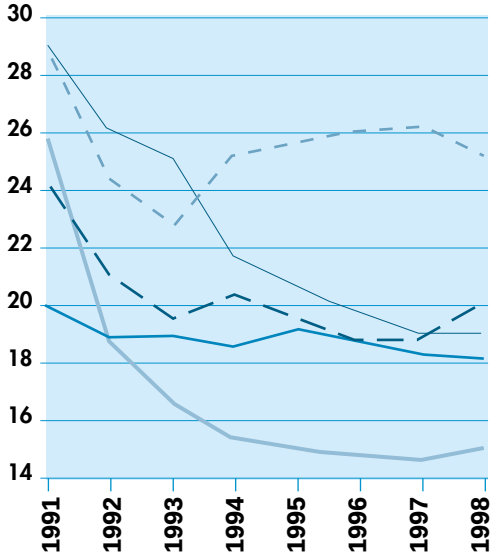
A decade after unification, a mixed picture emerges regarding Eastern German convergence. On the one hand, the main driving forces of the Eastern German economy, high wages, high capital subsidisation and fiscal transfers, pushed up labour productivity to levels far above of those in other transition economies. These differences are even more striking in manufacturing, where German policies have had the strongest impact. In this sector, labour productivity has quadrupled in Eastern Germany since 1991, compared with a doubling in the best performing transition economies (Poland and Hungary). This is illustrated in Figure 7. However, Eastern German productivity growth has been accompanied by massive labour-shedding. The extraordinary productivity growth of manufacturing has been associated with a radical selection process and at the cost of the size of the sector (see Figure 8)

Figure 7. Productivity growth in manufacturing (1991=100)



Source: EBRD, German Federal Statistical Office

Figure 8. Employment in manufacturing as a percentage of total employment



Source: WIIW, German Federal Statistical Office

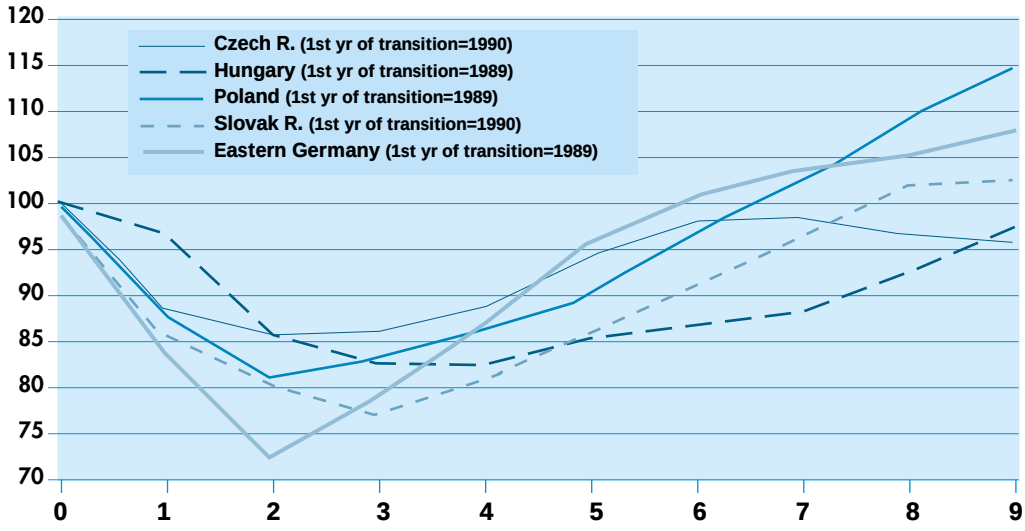
Eastern Germany has by far outperformed its Eastern European peers in terms of labour productivity growth. It has, however not done better in terms of welfare creation.

Although Eastern Germany has by far outperformed its Eastern European peers in terms of labour productivity growth, it has not done better with regard to welfare creation. This is shown in Figure 9. There was a massive real currency appreciation in Eastern Germany when the DEM was adopted at the time of unification. Output denominated in DEM also jumped, but this does not imply an increase in purchasing power parity terms. If the currency appreciation is eliminated by looking at the development of real GDP as an index based on the first year of transition, then Eastern Germany does not look so different from the Visegrad countries. Notwithstanding the massive fiscal transfers flowing in from Western Germany and substantial net-emigration, Poland outperforms Eastern Germany, and Hungary the Czech Republic and Slovakia follow only slightly behind. Obviously the massive policy intervention did not succeed in pushing Eastern Germany on a sustainably higher growth trajectory.

Moreover, the prospects for unemployment in Eastern Germany are bleak. Employment in the construction industry is going to decline as investment finds a more normal level, and it can only be hoped that those laid-off will be absorbed by the manufacturing and the market services sectors, rather than adding further to unemployment. The development of these sectors will be decisive for further productivity catch up in the overall Eastern German economy.

Regarding manufacturing, it is remarkable that the enormous productivity increase in Eastern Germany was hardly supported by any price increases. Surveys (Müller *et al.*, 1998, DIW *et al.*, 1999, and Bellmann and Brussig, 1999) have revealed several possible explanations for the limited success of Eastern German firms in improving their relative price position. These include difficulties in accessing distribution channels and markets, and in building reputation and establishing brand names. These problems are particularly relevant for the large number of newly created firms which account for 50% of employment in industry (Brenke and Schmidt, 1999). Therefore, a major challenge for the Eastern German manufacturing industry is to venture into higher quality markets. This implies that investment into product innovation and marketing, and hence into human capital, is essential. Specialisation in niche products could be helpful, since it offers the opportunity to relax price competition.

Figure 9. Real GDP per capita, year before transition = 100



Source: IIF, own calculations

There is a similar specialisation in the low quality/price segment in market services (DIW *et al.*, 1998). Beside the firm-related issues that have been described above, geographic factors may also play a relatively more important role. High value-added services are strongly concentrated in Western Germany (for example, publishing firms in Hamburg, media in Munich, and banking in Frankfurt). This suggests that agglomeration and localisation effects are at play. In those sectors in which Western German companies have been heavily engaged in Eastern Germany, such as banking and insurance, the Eastern German branches typically focus on low value-added retail activities (DIW *et al.*, 1998). However, there are still many other services that are based on modern communication technologies and where localisation effects do not play a significant role. Call

Overall, the main challenge in the market services sector, like in manufacturing, is to climb up the quality ladder and to define market niches.

centres are one much quoted example. For these types of activity, the cost advantages that Eastern Germany can offer, in combination with the modern telecommunications network, should be sufficient to attract investment and to motivate specialisation.

Overall, the main challenge in the market services sector, as in manufacturing, is to climb up the quality ladder and to define market niches. It is difficult to design policy to effectively support this process, and the quality of local institutions will be key. Already, the dynamics of employment patterns indicate that the southern New Länder may be gaining relative to the northern ones. Employment in manufacturing per 1000 inhabitants is 50% higher in Saxony and Thuringia than in Mecklenburg-Vorpommern, and is significantly higher than in Saxony-Anhalt and Brandenburg (Gornig and Häussermann, 1999). If continued, the resulting South-North gap would imply a return to development patterns prevailing before World War II.

Policy did create an investment boom in Eastern Germany, and, at least for manufacturing, there is evidence that the increased capital-labour ratio has led to higher labour productivity. However, the analysis of the adjustment process suggests that the rate of return to capital in Eastern German manufacturing has been below that in Western Germany (though positive). This is counter to the prediction of neo-classical convergence that the marginal product of capital should be higher in the region where there is relative capital scarcity. In line with this, there is evidence that the German system of general capital subsidies has distorted investment towards buildings and the most capital-intensive industries. Against this backdrop, the German government's intention to discontinue subsidies specific to Eastern Germany by 2004 appears appropriate. In any case, policies from the past - even to the extent that they have been successful - can not deal with the challenges of the future. With a greatly improved capital stock, the starting point today is different. Indeed, the need for a broadly-based quality upgrading in manufacturing and the services sector suggests that human capital with marketing experience may become the binding constraint for convergence to progress.

The problems of Eastern Germany only mirror the structural problems of Western Germany.

Some of the problems of Eastern Germany only mirror the structural problems of Western Germany in achieving employment intensive growth. It is now widely recognised that "*employment creation will need to derive predominantly from the private service sector, taking advantage of new opportunities for individual initiative*" (OECD, 1998, p. 128). Thus, looking at the more gradual adjustment in Central and Eastern Europe, it is far from clear that the wholesale adoption of the Western German institutional system offers the optimal framework for the structural adjustment of former planned economies.

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Contributing to regional development through project selection

Bertrand Rossert

1. Introduction

The EIB finances a large number of projects in support of EU policies including social and economic cohesion, that is to reduce regional disparities in income. Since 1995, the EIB Evaluation Department has looked at over 100 projects where the Bank has been involved, normally along the lines of a particular theme (e.g. impact of the Bank's projects in a specific sector or region). Inevitably, the information gathered is patchy because very few statistical series exist at a sufficient level of disaggregation to be used for ex-post project analysis. As any case-study work, their main value is to tell us whether a problem exists or not, rather than to assess the exact magnitude of the problem.

A series of evaluations has been structured around a regional development theme. In the most recent study of 17 projects, 14 of them had some positive impact on regional development and in over half of these cases, the impact was a strong one. Can the Bank improve on this, or at least maintain the same record? Clearly, this requires an understanding of the type of projects that contribute most to regional development. The purpose of this paper is to discuss what has been learned so far on this subject.

The paper is organised as follows. In the next section we discuss those features which distinguish regional development projects from any other sort of project. Section 3 picks up the theme of project delays. The EIB evaluation study mentioned above, confirming in many respect the conclusions of previous work, has identified this as the most common symptom of project difficulties in the less-developed regions of Southern Europe. What can be done by entrepreneurs to deal with the problems identified here? Section 4 discusses project implementation within a bargaining framework, and proposes a typology of projects based upon different investment strategies. Section 5 uses this framework to draw some policy implications for project selection and for developing the institutional environment in lagging regions.

2. What distinguishes regional development?

From the point of view of the European Commission, a less-developed region is primarily defined in terms of a significantly lower than average output or income per capita. This is typically the starting basis for policy makers, who then refine the picture: a less-developed region will typically have a high share of employment in agriculture, or suffer from long term unemployment. Less developed regions may also have a less dense infrastructure network, although this poses measurement issues. For instance, the length of roads or motorway per square kilometre is lower in less-developed regions, but not necessarily when the figure is expressed in per capita terms (see, for example, Pinelli, 1998). Less-developed regions also appear to be less innovative, whether innovation is measured by the number of patents or in total R&D expenditure per capita. As

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technical change comes from outside the region, less-developed regions are always one step behind the regions that originate new technologies.

This approach, however useful for the policy maker, is of limited interest to a would-be investor who considers implementing a project in a specific region. To distinguish financial supporters from the entrepreneurs who are responsible for getting projects done, we will call this latter group the "promoters".

The project promoter and the policy-maker diverge in their approach on two key features. On the one hand, the policy-maker is interested in a broad and gradual approach to overall development, while the promoter is engaged in yes/no decisions, the problem being whether the region is *acceptable* for a new business. On the other hand, many of the factors that the macroeconomist pursuing regional development considers as economic weaknesses are seen, by the promoter, as advantages. For instance, low income per capita usually means that low wages are acceptable to a large fraction of the population and that employee turnover is likely to be low; limited population density and low industrial density often mean that land will be cheap; the need to import innovation from outside the region enables some firms to obtain, at least temporarily, a monopolistic advantage in the region.

An elementary neo-classical model predicts that promoters will invest in less-developed regions, other factors being equal. In reality, agglomeration in more developed regions continues.

This is the paradox: A lack of development creates conditions that are favourable to promoters. An elementary neo-classical model would predict that the promoter will elect to invest in the less-developed region. However, in reality, agglomeration in more developed regions continues to be a cumulative process.

Our case studies brought no confirmation of the traditional beliefs of policy-makers. Poor transport infrastructure was a problem in only one case, because the expected development of railtracks and of a harbour did not materialise (so the problem was more a lack of implementation of public sector infrastructure programme). The weak endowment in human capital was not seen as a particular problem because it can be resolved through training, or low wages. The general opinion of promoters is that the subsidies more than compensate for weak infrastructure and for weak human capital. There was no problem of access to the technology that was to be implemented, although the technologies selected are not necessarily the most efficient nor the most advanced. However, as our case studies are based on projects that were actually implemented, we have only met the promoters who decided that conditions were acceptable. This has introduced a bias. While these projects demonstrate that infrastructure or human capital weaknesses were not an absolute deterrent for some promoters, it is not possible to say whether other promoters have decided not to invest because the infrastructure network and labour market created major obstacles to a successful operation.

For those projects in our sample, a key issue for promoters was the fact that there is simply less business activity in a less-developed region. Firstly, this means that, as far as project implementation and business development is concerned, many organisations, especially local public ones, are low on the learning curve; they have come across a limited number of situations and they sometimes lack appropriate procedures (because new projects are so rare that they can be dealt with on a case by case basis, with much improvisation along the way). This also means that the promoter will lack benchmarks, as they will be few comparable businesses in the region; there will be little cross-fertilisation through hiring workers who have worked in the same industry before. There will also be

limited feedback to the promoter from subcontractors or consumers. This means that the project will be conspicuous, that interference from local interest groups, often relayed by the public administration will be more frequent and more invasive. For instance, sacking workers will be more difficult. In some cases, there will be (unwritten, implicit) constraints on choosing subcontractors outside the region.

Moreover, since innovation (whether market-related, technological or financial) is exogenous to the region, the promoter with a new technology will get less feedback than in a more developed region, as well as less help in case of difficulties. Innovation spillovers will essentially be one-way, with the promoter gaining little from his or her environment.

A second set of problems relates to vague or opaque award procedures for the allocation of subsidies (or authorisation procedures such as construction or environmental permits). Interest groups (land owners, workers, consumers, project neighbours, etc.) tend to consider a new project as a big opportunity, and they try to get a stake in the project. They get leverage on the project through the political interference in the subsidy and authorisation award process. A "bounty race" of some sort develops that would be much more restricted in an industrial area where a new project is "just another project". This is a special race, however. It is not the first one to arrive who wins all - everyone who reaches the bounty can take a share of it.

3. Project delays

The goal of promoters is to realise the business objectives of a project within a reasonable timeframe and at an acceptable cost. Project difficulties result either in cost overruns or in delays, and the two do not necessarily go hand-in-hand. Cost overruns most directly affect the promoter (who then may or may not be able to pass the extra cost through to the consumer). The consequences of delays may sometimes be shared directly between the promoter and the local stakeholders in the project (workers, consumers, etc.), providing the institutional framework is sufficiently weak not to impose payment of damages by the promoter. It is clear that a project supposed to relieve congestion imposes a cost to future consumers when it is delayed. This may also happen with innovative projects, when a region misses out, for a while, on a crucial innovation. Finally, a delay in developing regional resources (such as oil) may have a higher opportunity cost on the region than on the promoter.

EIB evaluation studies have shown that project delays are especially prevalent in Southern Europe. While most project difficulties (and in particular disagreements between interested parties) translate into delays, projects in the South (or regional economies) adapt so that the delays result in limited cost overruns. However, delays do upset the project's financial structure; in extreme cases, the grace period on loans ends before the project is finished. Delays may result from inadequate project management by promoters; however, delaying tactics appear to be particularly common with public administrations in some less-developed regions.

3.1 How are promoters led into delays?

We have come across four broad types of problems that can bring a project to a stalemate. Firstly, there is a lack of appropriate design. Many projects fail through insufficient initial studies and poor technical or commercial design. Basically, all EIB evaluation studies have come across this phenomenon. Some projects also fail because restricted procurement has led to a contract being

awarded to a company that is unable to carry it out. Some projects also suffer from the delays of other projects (e.g. an industrial project may be affected by the delay or the cancellation of an infrastructure project). However, we have found no evidence of firms having difficulties in accessing state-of-the-art technologies; the problem is when to call on them and how to use them (with the appropriate manpower that is not always available locally). Technology is available, but information about it, and knowledge on how to use it, may not be.

Secondly, there is a lack of identification of stakeholders in a project. It is important to identify stakeholders and stakes and to establish how benefits and costs are shared across the social geography of the region. In a recent article, Jenkins (1999) shows that, without an integrated analysis of stakeholders (estimating how direct and indirect changes in income due to the project are distributed and how this conforms to the principal objectives of the project), one may fail to identify potential implementation problems. She provides the example of a hotel in Cyprus which, if built, would have led to a significant loss in income for the other hotels in the region. She concludes, "In a relatively small country like Cyprus, the political pressures that can be exerted by competing hoteliers are very strong. As a result, this hotel was the subject of controversy and has not been built todate"(Jenkins, 1999, p. 93).

Thirdly, there is a lack of appropriate identification of "implicit" property rights. There are "fuzzy" property rights, based on tradition and culture rather than on the law, but which may nevertheless be taken into account by the local administration. For instance, the local population may feel that they *own* the jobs created by the new project (1) or that no new project (e.g. a new rail crossing) can justify the destruction of recently built houses. Promoters sometimes fail to identify these implicit guidelines and the related enforcement mechanisms (i.e. the potential influence of some stakeholder groups on their projects).

Delays arise because of lack of appropriate project design, lack of identification of project stakeholders and a lack of problem solving infrastructure.

Fourthly, there is a lack of "problem solving infrastructure" for legal dispute resolution on the one hand, and specialised consulting on the other. Court actions take so much time that they can be ineffectual as a dispute resolution system on specific and detailed aspects of a project development. Then there are cases where a technical problem cannot be easily sorted out because the experts having the appropriate knowledge are not available in the region. When national or international specialists can eventually be mobilised, they often lack the background on the constraints of the local environment. A related aspect is that many projects have no, or hardly any, risk-management strategy. If an unplanned event occurs, there is rarely a contingency plan and so the schedule, and sometimes the entire project management goes astray. Contingency measures are pushed back in time until the planned end of the project; preventive measures are delayed until it is too late, i.e. until they become corrective measures.

3.2 Public sector responsibility for delays

In many of the projects evaluated, public administration, often local administration, had a share of responsibility in delays. Private sector projects often perform better than public sector projects and under-performing private sector projects have, on a number of occasions, seen their action hindered by public authorities. The mechanisms leading the public sector and public administration to indulge in delays usually revolve around knowledge deficiencies and organisation failures.

1) As long as a project is being built, employment required during construction is maintained. Therefore, sometimes, from the point of view of local politicians or local administration, the longer the project takes to be built, the better.

The mechanisms leading the public sector to indulge in delays usually revolve around knowledge deficiencies and organisation failures.

One problem can be simply a lack of public sector management skills. These are often revealed by poor presentation of public sector projects. While these may be attributed to a lack of presentation skills, very often a poor presentation actually hides project weaknesses. For instance, presentation of the wrong sequence of events when explaining the various steps in project development are sometimes "rectified" by external project analysts (as they would do for, say, typos), when in fact, it constitutes a genuine promoter's mistake in the necessary flow of events for the project.

There may also be confusion between forecasts and normative guidelines. Public administration is, by nature, influenced by politics and is, therefore, a place where positive and normative economics coexist. There are many instances where (e.g. demand) forecasts are not defined as what is likely to happen, but as what would be desirable to happen. There is, for instance, a near systematic bias (towards overestimate) in traffic forecasts by public sector transport companies. Problems start when cost-benefit analysis or profit forecasts are based on wishful thinking about demand. This often comes when budget is used as a negotiation tool to get projects approved. Here, there is a vicious circle between knowledge and institutional deficiencies.

The list of hindering mechanisms to the efficient operating of the public sector is long:

- *Regulatory capture.* This is Alice in Wonderland who, when asked by the Caterpillar who she is, replies "I - I hardly know, sir, just at present - at least I know who I was when I got up this morning, but I think I must have been changed several times since then". This is what happens to local authorities when their objectives become confused with those of the local establishment or of pressure groups. This may be compounded by a feeling that private sector companies coming from outside the region are trying to get more out of the region than they put in (which sometimes happens). As a result, there is a tendency to try and force outside companies to spend more when implementing a project, and to complicate profit making.

- *Risk aversion leading to inaction.* Administrations often have the wrong incentives. It is more important to avoid mistakes than to take appropriate action, and there is no incentive to look for what is best rather than what is simply acceptable. Although it is not impossible to attack an administration for failure to act, this is much more difficult, and as they risk antagonising the administration in future, promoters rarely try it. On the contrary, an administration can be easily criticised or prosecuted for the actions it takes. Therefore, as a result of their risk-aversion, administrations are usually led towards failing to act when they fear to make the wrong decision. The incentive structure within public administration means that managers are often more used to making sure they spend their entire budget than on trying to save part of it, so there is no tight grip on costs. Similarly, the incentive structure is complacent about delays and, in some cases, delays push projects to the top of the political and administrative agenda, boosting the profile of the managers who take care of such a "national priority". When neither costs nor timing are under strict control, efficient project management is virtually impossible. In this context, it is also difficult for a public administration to realise what really matters for a private sector project manager (e.g. that the right timing for the delivery of a building authorisation can be essential).

- *Confusion between subsidy and authorisation procedures.* Many public organisations use their budget as a negotiation tool. What is included in the budget is supposed to be authorised. One

way of fitting in the budget is to get a subsidy. Thus, there is very often the misleading characterisation of a subsidised project as one which deserves to receive all the required authorisations. When the budget process and the approval process get confused, loans to good projects make it possible to allocate grants to other projects, i.e. those that could not obtain a loan. This can occur either because loan money is fungible, or because the grant award process is so decentralised that it leads to principal/agent problems, the awarding authorities trying to maximise the grants received rather than trying to maximise the efficiency of the investment programme.

- *Poor budgeting.* As a project gets authorised by being on the budget, there is an incentive to put more projects than can be financed on the budget. Without binding multi-annual budgetary procedures, it is possible to start a project even if only the expenses due to be incurred in the first year of construction are covered. The confusion between budgetary and authorisation procedures also provides incentives to underestimate costs or timing, in order to get more projects authorised. In fact, a budget shortage is a bargaining tool to get more. Most local public administration in less-developed regions receive significant subsidies from outside the region. In many cases, past funding requirements influence future subsidy levels, and the more a region spends, the more it gets in future.

Organisational failure of public administration extends outside less-developed areas. There are many possible subsidy sources and the applications for funding are usually simultaneously put to several independent organisations (for example, the EU). As some applications are expected to be rejected, plans are often over-ambitious. Equally, there may be little co-ordination between public fund providers, who, in addition, pursue different agendas. As a result, their funding programmes may be inconsistent and so many of the items in over-ambitious programmes get subsidies. It is not, as is sometimes heard, that too much money is going to the regions, but that money is spread too thinly on too many projects. The implementation resources of the region are then overstretched, which leads to delays.

4. Project development as a strategic game

Dealing with these diverse features can usefully be seen in a strategic gaming context. The key point is that a new project appears as something of a windfall in the region. Stakeholders (workers, suppliers, customers, etc.) want to force the promoter to commit to giving them a substantial share of the revenues. There is rarely a full realisation by promoters coming to a less-developed region of the extent to which there will be bargaining over the resources put into a project and the revenues generated it.

4.1 Incomplete bargaining

We can think of the game along the following lines: A mother wants to divide the pie between her children, but she can never get them all to sit at the table at the same time.

In the same way theory speaks about incomplete contracts, it could be appropriate to talk about "incomplete bargaining", taking bargaining as a game where players simultaneously make offers until these are compatible and allowing, as "incompleteness", situations where the number of players making offers can vary (randomly or sequentially) from one round to the next.

We can think of the game along the following lines: A mother wants to divide a pie between her children but she can never get them all to sit at the table at the same time and tell what share of

the pie they want. As she does not like to be unfair to any child, she gets from each child the information about his or her preferences. However, if each of her four children wants a third of the pie, she has to start again. Common sense gives us hints as to how a solution will be reached: the pie might be getting cold, the children may be hungry, one of the children may be a domineering personality, the mother may threaten to put the pie away if the children do not agree, etc.

In slightly more formal language, we may think of player i bidding for a share, y_i of total resources R. If the sum is below R, then all players involved in this round get the share they asked for, with an amount R^* left over (with $R^* = R - \Sigma y_i$). However, if the sum of all y_i is above R then nothing is distributed. This means that players may be able to block or delay the distribution of revenues by making sure that their bids are incompatible with others (2). Moreover, some players may not have participated in the round, but they exercise a veto on the outcome. They will ask for the game to continue and a new round will be organised.

A game of this type must continue until no-one wants to play any longer. It will not converge towards a solution unless some value of time, some "impatience", is built in (see Osborne and Rubinstein, 1990). For instance, the total resources, R, can reduce at each round due to a discount factor, or one player can commit *ex-ante* to withdrawing from the game after n rounds (this player usually gets everything), or each player must pay a fee to participate in a round. However, it is clear that if one player is impatient (say, the promoter) and one player is not (say, the local administration), the conventional result of bargaining theory applies: the most impatient loses. Osborne and Rubinstein (1990) point out that reaching a solution supposes not only that time is valuable, but that disagreement is the worst outcome and that the resources to be shared are desirable. These conditions are not necessarily fulfilled in the projects we have examined. For environmental groups or for direct competitors, not having a project built is not necessarily the worst outcome.

The game is not renegotiation proof, and the strategy of the promoter should consist of making renegotiation unattractive.

The game presented here is not renegotiation-proof and the strategy of the project promoter should consist in making renegotiation unattractive (for example, reducing the number of rounds would shorten the negotiation process). However, a renegotiation-proof outcome may not exist and, in some cases the best strategy of the promoter will be to withdraw from the game and abandon the project.

Confronted with this situation a number of promoters have elaborated what, with the hindsight permitted by *ex-post* analysis, appeared to be successful, sustainable strategies. One promoter identified *ex ante* all the stakeholders and then started negotiations with each of them individually. As the promoter expected to negotiate with all stakeholders, he was in effect negotiating at each stage on behalf of all the absent stakeholders, preserving their share of the revenues. This strategy was successful partly because all stakeholders were impatient: the promoter was offering to take over a plant in need of a turnaround and time was running out, at a potentially very large cost to local stakeholders. Making payoffs time-sensitive is an effective way of reaching an outcome.

Some promoters try to avoid contacts with the local environment as much as possible, asking for minimal building authorisations, committing funds only once these are obtained, and limiting their

2) At a theoretical level, this means that when delays occur, the proposed outcome is outside the core. As a result, designing solutions that are in the core is a way of avoiding delays. The issue, however, is how such solutions can be translated into practice.

contacts with locals to hiring staff and paying local taxes. This strategy of refusing to play the game as much as possible is effective with companies that do not rely crucially on any local input and is even more effective with companies that can easily change the technical design of their project (plans of a previous project built somewhere else are sometimes used for new permit applications in a different location, thus reducing sunk costs in the new project).

Some promoters identify those stakeholders likely to make extraordinary demands and try to negotiate as late as possible with them, i.e. when there is not enough resources available to meet such demands and when other stakeholders have much to lose in a collapse of the negotiations. Some promoters delay their project until the more greedy stakeholders faces high costs if the project does not go ahead (e.g. from high congestion of existing facilities), but this strategy can backfire with bypass strategies being elaborated that make the project unattractive.

This is consistent with theory. Osborne and Rubinstein point out that for delays to occur, there must be multiple equilibria. A strategy for the promoter can therefore consist in cornering the stakeholders into take-it-or leave-it offers, in other words eliminating all equilibria but two (one of which being *no project*). However, this possibility is not always open to the promoter. For example, a utility simply cannot make take-it-or-leave-it proposals, because the threat to leave is neither credible nor feasible.

4.2 A typology of projects

A simple two-by-two matrix with project size and sunk costs can capture important differences between projects.

With the above in mind, our recent field studies suggest that a simple two-by-two matrix can be used to capture important differences between projects. This is shown in figure 1. The two dimensions of the matrix are size and sunk costs. Note that the size of a project here is defined by reference to investments in the region, rather than its particular industry. In each element of the matrix we can identify a particular type of venture. They are:

• **Mature Sector and Infrastructure.** These are large projects, often public institutions upgrading or expanding large infrastructure networks, or are large private projects in relatively stable and slow moving industries. Typically, the timeframe for change is not the main priority and project implementation is often behind schedule.

• **New Sectors.** These are large projects, but in more dynamic industries where change has to be carefully managed. They often relate to the introduction of an industry (or sub-industry) to a specific region. They need significant backing and often affect large sections of the local community.

• **Networks.** These are not large projects, yet are often joint ventures or the 'turn around' of an existing company. Joint-ventures regularly include foreign partners, who bring in new technology and skills to improve an existing company. Critical to the success of these projects is the relationship with all other stakeholders and interested parties.

• **Offshore.** The 'offshore' project is generally financed by a foreign company, which is looking to start a new venture in the region. These are often relatively small projects involving the set up of a new business. In a number of cases, the profits are also transferred "offshore".

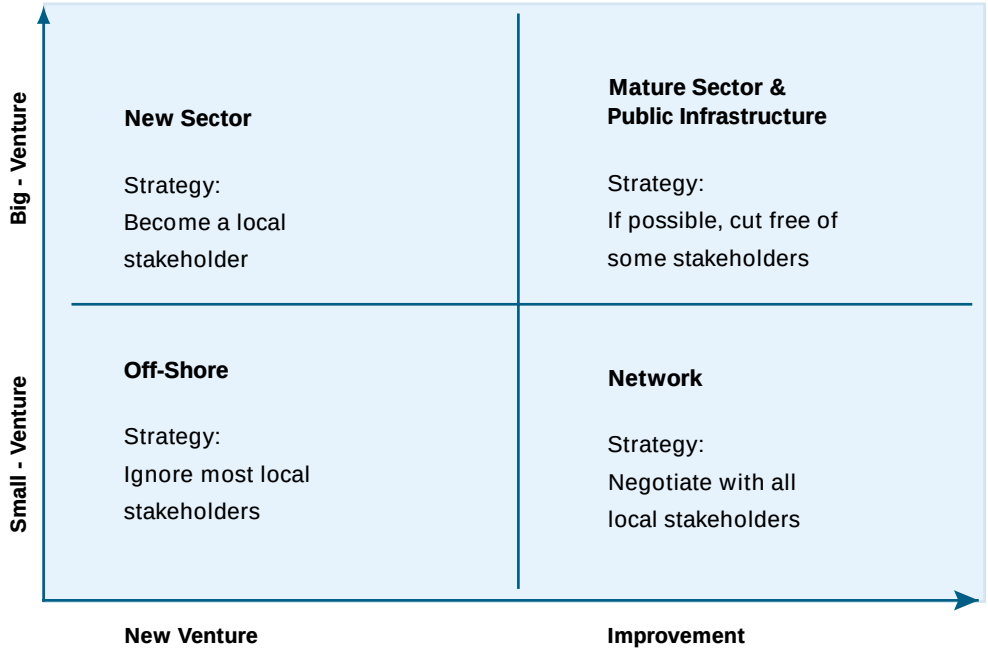
The successful strategies for inserting a project in the social geography of the region appears to vary for these four project types. The promoter of a big project that complements existing facilities in a well-established sector (e.g. infrastructure) will be forced to accept many of the stakeholders' demands. For example, there may be no alternative to a rail company upgrading a line (and exit strategies are impossible). This leaves the rail business very exposed to extraordinary demands by stakeholders. The only option is to try to cut some stakeholders out of the picture.

The effectiveness of a project as a vehicle for regional development can be mapped on the same topology.

Conversely, the promoter of a big project in a new sector is in a position to modify the environment in his favour and to make "take-it-or-leave-it" proposals. When a car company proposes to create a car manufacturing sector in a country, the possibility of withdrawing is real for a long time, even when construction has started.

The promoter of a small new project can try to remain isolated from the local environment. However, if the project will modify an existing operation then it is better to try to be fully integrated in order to have a complete view of the forthcoming negotiations with the local shareholders, i.e. to be negotiating actively rather than passively reacting to stakeholders' demands as they come.

Figure 1.



One more conjecture can be added to this analysis - innovation - which seems to be a possible third dimension of the matrix. For instance, in a mature sector, projects with low innovation content appear more successful, while in the offshore quadrant of the matrix the opposite seems to be true. A certain impact from innovation is to be expected, because spillovers that result from innovation in a region, could be described as unavoidable side-payments, changing the nature of the game being played. The difficulty, however, lies in the identification of innovation. Is innovation an improvement on what exists in the region, or anywhere else, or elsewhere on average? In any case, our sample is so far too limited to allow further analysis.

5. Policy implications

While a promoter must define a strategy that is in-line with the characteristics of his or her project, the effectiveness of a project as a vehicle for regional development can also be mapped on the above topology.

On the basis of our sample of about 40 cases (3), it appears that many "Offshore" projects (i.e. small new ventures relying very little on the region) and "Mature" projects (i.e. large projects in old-established sectors such as. infrastructure) have a limited observable impact on regional development. Small projects that improve on existing operations and are well integrated in the local environment ("Network" projects) appear to have a more direct impact, when observed after a few years of operations. Large projects that create a new economic sector in a region ("New Sector" projects) and thus a series of related opportunities, also appear to have a rather immediate impact on regional development.

Developing "Offshore" or "Mature" projects may be less justifiable on a pure regional development basis, at least with a short term objective in mind. There could be some justifications for support. For example, a hydroelectric scheme in a less developed region may have a limited impact on the economic development of the immediate region but will contribute to the development of sustainable energy resources at country or EU level and could be financed on this basis.

Variety matters. Financing only one type of project creates an unbalanced regional economy with questionable growth prospects.

These results, however, have been obtained from a limited number of case studies. They have to be combined with the conclusions of previous evaluation studies. These tell us that variety matters. Financing only one type of project creates an unbalanced regional economy with questionable growth prospects. How could a region develop with no infrastructure? On a practical level, who would want to live there (in other words, how can human capital be increased)? "Mature" projects can be seen as a necessary condition for regional development to take place. There are also dynamics at work. Some small isolated ("Offshore") projects may subsequently be developed into more integrated operations, thus enhancing the economic development impact of the project on the region.

Given that delays, especially in Southern Europe, represent a symptom of project difficulties and of disagreements between stakeholders, external fund providers could have a useful role in reducing tolerance for project delays through loan and grant contract conditions (e.g. imposing a full project audit to all projects that are more than two years late). Imposing an independent audit on projects would be a way of enforcing accountability for these delays.

The reason for combating delays does not lie in their impact on profitability, which is usually limited, but in the fact that they reveal other more fundamental problems in the local environment of the firm. Since the deficiencies of public authorities have been identified as a problem, a training programme aimed at the public sector towards improved efficiency and sound project and risk management would be desirable in a number of cases. The impact of the public sector is not purely a quantitative issue of how much the State or the region is prepared to put in, but also a qualitative issue of how well-organised this intervention is.

3) Not surprisingly, the matrix provides a poor explanation of situations where corruption is believed to have occurred. In the absence of any formal proof to that effect, this analysis cannot be carried any further.

Finally, many delays are connected to public support/grants that can, to a certain extent, be negotiated. Negotiation can take place because rules are complex and lack transparency. In most cases, it is simply impossible, *ex post*, to work out the level of public support received by a project (granted by a number of local, national and European authorities with hardly any consistency and co-ordination). Therefore, there is a need in Europe for simplification, better transparency and full consistency of subsidy regimes. This should also be a requirement of competition policy.

Geography and rate of return are insufficient predictors of the impact of a project. As a consequence, project selection is critical.

What we can say without any doubt is that geography and rate of return are insufficient predictors of the impact of a project. A satisfactory rate of return is necessary but not a sufficient condition for a project to have a positive impact on regional development. As for geography, it is not even necessary for a project to be located in a less developed region to have an impact on regional development. As a consequence, project selection is critical.

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