Regions Matter

ECONOMIC RECOVERY, INNOVATION AND SUSTAINABLE GROWTH

OECD

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AND SUSTAINABLE GROWTH

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Foreword

The point of departure for the report is the issue of how to generate growth in regions. In particular, why do some regions grow faster than others, often in ways that confound economic theory? This is a central issue at a moment when policy makers are looking for ways to stimulate new and sustainable growth, post-economic crisis. OECD work suggests that simple concentration of resources in a place is not a sufficient condition for sustained growth. The key appears to be how assets are used, how different actors interact and how synergies are exploited. Evidence of this is provided by analysis of the factors that drive growth: for example, infrastructure investment is effective when combined with other forms of investment, notably in education and skills. For innovation, it is not simply the number of researchers or the level of R&D investment that count, but how the innovation system as a whole functions. This leads to very different policy considerations from those that derive from the assumption that concentration alone will automatically generate economies of agglomeration. It also suggests a role for public policy in ensuring that growth is maximised from the assets present in a region. The market does not achieve this alone.

This new perception of the role of regional policy is particularly relevant post-crisis at a time when issues such as green growth and eco-innovation are high on the agenda. Regional policies have a strong contribution to make to sustainable growth at the regional and national levels. But in order to maximise this contribution, public policy needs to embrace reform and continue a transition away from market-distorting subsidies to policies that unlock the potential of regions and that support long-term economic, social and environmental objectives. This is all the more crucial given the very limited resources that are available to national, regional and local governments and the tight fiscal constraints likely over the coming years.

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Acronyms

ASTER	*Associazioni Scienza i Tecnologia Emilia Romagna*
	Science and Technology Association of Emilia Romangna
CG	Central Government
CIDE	*Centro de Investigacion y Docencia Economica*
	Centre for Economic Research and Teaching
DATAR	*Délégation à l'aménagement du territoire et à l'action régionale*
	Interministerial Committee for territorial development and regional action
DIACT	*Délégation interministérielle à l'aménagement et à la compétitivité des territoires*
	Interministerial Committe for Territorial Development and Competitiveness
EDA	Economic Development Administration (USA)
EU-TEN	EU Trans-European Network
FDI	Foreign Direct Investment
FY	Financial year
HEI	Higher Education Institutions
ICT	Information and Communications Technologies
INSEE	*Institut national des statistiques et des études économiques*
	National Institute of Statistics and Economic Studies
JPY	Japanese yen

LEADER	*Liaison Entre Actions de Développement de l'Economie Rurale*
	European Union initiative for rural development
MNEs	Multi-national enterprises
NRC	National Research Council of Canada
OLS	Ordinary Least Square
PISA	OECD Programme for International Student Assessment
PPP	Public Private Partnerships
PRODER	*Promocion y animacion de desarollo rural*
	Spanish/EU programme for rural development)
RDA	Regional Development Agencies (UK)
S&T	Science and Technology
SMEs	Small and Medium-sized enterprises
SPRI	*Sociedad para la Promoción Industrial*
	Association for the Promotion of Industry (of the Basque Country)
TL2, TL3	Territorial level 2 (similar to NUTS 2 regions), Territorial level 3 (similar to NUTS 3 regions)
WIRED	Workforce Innovation in Regional Economic Development (US Department of Labour programme)

Introduction

In the aftermath of the financial crisis, and against the background of a prolonged economic recession, the first priority for policy makers across the OECD and beyond has been to strengthen the world's financial system. The next challenge is to support demand and employment creation during the recession in a manner that helps the subsequent recovery to be swift, smooth and durable, as exemplified by the current emphasis on green growth. Regional policies should contribute to this unfolding policy agenda. With this in mind, this report looks at patterns of regional growth across OECD countries, reviews the rationale for regional policies and explores current policy practice. The objective of the report is to identify ways that regional policies can be made more effective in meeting current and future economic, social and environmental challenges.

Over the past few years, OECD countries have promoted a new approach to regional policy, moving from subsidising businesses and employment in poorer regions to promoting growth in all types of regions. This new approach is more complex and nuanced than earlier versions, and as such it is also potentially more fruitful. Instead of a zero (or even negative) sum game of taxing high-wealth areas to subsidise activities in low-wealth ones, the accent is rather on the positive sum game of mobilising resources, notably by encouraging innovative business (and public sector) practices.

Developing strategies that will have an impact on the competitiveness of a given region involves identifying the sources or potential sources of the region's competitive advantage. A wide range of factors could be targets for policy. Moreover, these advantages are not static but evolve, sometimes rapidly, over time. A region that is at a competitive disadvantage because it is distant from domestic markets can find itself instantly more competitive when trade barriers are reduced with neighbouring countries. In many rural areas, changing lifestyle preferences mean that amenities (natural and cultural public goods such as a clean environment, landscape and cultural heritage) represent an increasingly valuable endowment that can contribute to increasing competitiveness. Potential for economic growth can also be realised through administrative reform. Arbitrary administrative boundaries often inhibit the exploitation of economies of scale, impose additional transaction costs on enterprises and restrict mobility and resource allocation in the labour market. This implies that there is no one-size-fits-all policy: similar regions in different countries will often benefit from different policy approaches.

The capacity of a region to attract and retain mobile resources such as domestic and foreign investment, innovative firms and skilled labour, depends importantly on the quality of services produced or supported by public action (transport and communications infrastructure, research institutions, information for businesses etc.). In certain cases, subsidies and state aids may effectively compensate for market failures by helping new firms to access research and technological innovations. However, excessive direct

support distorts competition between regions and may contribute to the emergence of a culture of dependency. There are alternatives to a subsidy-based approach around which a proactive regional strategy can be built. These alternatives involve better use of traditional investment instruments, such as physical infrastructure development; as well as less tangible or soft investments, such as human and social capital. In each area, the objective is that governments at different levels provide collective, locally-targeted public goods, appropriate to the specific needs of rural and urban areas, to encourage and facilitate private initiative and enterprise.

This report argues that regional policies now go beyond a traditional distinction between top-down and bottom-up approaches. Policies to target public investments, both hard and soft, now depend on clear multi-level governance in which each level of government and each actor contributes to the vision and the policy design and, equally importantly, to the implementation of these policies. A multi-level governance approach will address the range of potential areas of public investment: infrastructure and public-goods provision, human capital formation and mobility, as well as business environment and innovation. National governments are best placed to decide on national development strategies. Lower levels of government are better placed to know where the investment priorities lie within their territories, and also better placed to involve private-sector actors in regional development.

This new approach suggests an important role for regional policies in the context of economic recovery and the search for sustainable growth paths. Although responses will vary from country to country, regional policies can play a role in a number of specific ways that are relevant for economic:

- *Accelerating and maximising the impact of public investment.* Territorial development policies often have defined and agreed development strategies for integrating investment projects across economic, social and environmental sectors. Even if governments want to stimulate economic activity through infrastructure development, pushing investment projects forward can be difficult without clear roadmaps based on agreed priorities, needs assessment and stakeholder buy-in. Regional development strategies often represent such an agreed and validated road map that brings together both economic and environmental objectives. Furthermore, integrating regional investment projects into a coherent national strategy can augment their multiplier effects.

- *Combining different types of investment to maximise their impact on sustainable growth.* OECD analytical work confirms that infrastructure investment alone does not produce growth. Many countries are now reviewing their approach to regional investment to give a higher priority to "soft" infrastructure: human capital development and innovation support in particular. In an economic crisis, the temptation to invest heavily in hard infrastructure is strong, but evidence from OECD countries suggests that a more integrated approach will have a better impact on growth.

- *Effectively targeting regions in need.* Regional policies are the natural mechanism for focusing investment on specific regions or communities that face specific economic, social or ecological pressures. In the past, regional policies have been used repeatedly to support restructuring of regions in crisis (modernisation of industries, promoting entrepreneurship, reskilling workforces, redeveloping brownfield sites, promoting preservation of natural amenities, etc.). As such, there is an accumulated

experience with policy instruments and approaches that will help address the asymmetric economic and social impacts of the crisis.

- *Ensuring co-ordination at the central level.* Regional policies involve institutions that co-ordinate actions among government ministries – economy and finance, science and technology, education, environment, and so on. In the context of strategic recovery or green growth programmes, such co-ordinating bodies could help to ensure that investment strategies are coherent across sectors.
- *Harnessing the experience of regional development agencies.* Regional agencies and similar bodies responsible for implementing regional investment strategies can be a credible conduit for recovery-related investment programmes. In general, compared to line ministries, these are more private-sector oriented and flexible and can respond more rapidly.
- *Ensuring that local and regional knowledge, funds and capacity are mobilised.* Regional policies often use well-developed mechanisms for co-ordination between the centre and the sub-national level. These mechanisms help to ensure transparency and coherence. In most OECD countries, the sub-national level is responsible for most capital investment. As such, close co-ordination will be required to ensure that local investment and national investment priorities are aligned so that long term, green growth objectives are achieved.

The report is structured as follows: Chapter 1 reviews the evidence behind some key issues in regional policy (such as the role and limits of concentration in generating growth, the role of lagging regions in national economic performance and so on). The report uses a pioneering econometric growth model designed to fit the regional level to explore the sources of economic growth and hence the potential targets for policy intervention. Chapter 2 then discusses recent policy experience in the policy fields that appear to be the most significant for sustainable regional development, namely, infrastructure, human capital development and innovation, as well as looking at the evolution of sustainable urban and rural policy formulation and implementation. Chapter 3 the report looks at how governance of regional policy helps to determine the effectiveness of policy by overcoming problems of asymmetry of information, helping to better mobilise local knowledge and skills and improve the coherence of policy action across levels of government. Finally, Chapter 4 looks in turn at growth patterns in each OECD member country, illustrating on a country-by-country basis the analysis presented in an aggregate form in Chapter 1.

Summary of Key Policy Messages

- Regional policies are increasingly tested on their capacity to fuel growth, rather than simply reduce disparities. This is particularly true in the context of the economic crisis. But in order to play such a role, regional policies need to continue an ongoing process of reform.
- A key rationale for a renewed regional policy is that simple concentration of resources in a place does not necessarily translate into economies of agglomeration and new growth. Urban areas tend to have higher income levels than rural regions, but not necessarily higher growth rates; there is no consistent relationship between urban concentration and economic performance. This suggests an important caveat for investment policies that view concentration as the only path to development.
- Simple accumulation of investment and assets is not enough – and public policies to increase concentration are therefore not always the most appropriate option. The key appears to be how assets are used, how different stakeholders interact and how synergies are exploited in different types of regions. The market does not always appear to maximise this potential alone; public policy has a role to play.
- Leading regions are important for national economies, but over the past decade lagging regions have made a strong contribution to growth. In most OECD countries, they have generated more than 50% of national growth over the past decade. This suggests that policies to support lagging regions are not only targeting disadvantage for reasons of social equity, but can also be tools to generate growth that is important for national prosperity. This also implies that equity and efficiency are not mutually exclusive objectives – improved performance in lagging regions helps achieve equity objectives by ensuring better access to employment and services. Regional policies should make a stronger and more explicit link between the two.
- Growth is linked to the use of productive factors (labour, capital, technology). But econometric analysis shows that no single factor explains improved performance in a region. The positive impact of infrastructure investment on growth, for example, depends on educational levels and innovation performance. Policy makers should make more use of regional policies as a means of supporting synergies across policy families.
- Governments are increasingly realising that investing in the regional dimension of innovation is a crucial part of strategies to promote growth. There is no single formula to promote innovation in all regions, but more systematic policy analysis would help policy makers understand which region-level instruments generate innovation and where. Governance of innovation is another area where more work is needed to clarify the most appropriate division of labour between central and regional actors.

- Research- and technology-driven innovation is highly concentrated, but public policy can generate new dynamics of innovation. Many innovations that shape our daily lives were produced in a small number of leading regions. While Silicon Valley, Boston and these high-tech hubs still dominate, other regions are now becoming active in high technology industries and are investing heavily in R&D-intensive sectors. This suggests that in some circumstances innovation-related public investment can drive economic modernisation and help regions move up global value chains.
- Policy also needs to address regions that are not innovation leaders but that are innovative in other ways. While leading regions produce several hundred patents per year per million inhabitants, more than one-third generate less than ten patents per year. More than 50% of innovative firms in these regions carry out no R&D. These regions need a different kind of innovation policy, one that emphasises absorption capacity and innovation by adoption.
- But there are challenges – innovation resources are moving east. Innovation-related investment is shifting to specific regions outside the OECD area – the municipality of Shanghai is aiming for an R&D intensity of 3.3% by 2020. There is evidence of geographic clustering with firms benefitting from increasing concentrations of skilled labour and denser customer-supplier networks in some Asian cities and regions. OECD regions therefore need to be aware that their knowledge assets must be constantly upgraded in order to remain competitive.
- Despite economic and demographic challenges, rural regions are not synonymous with decline. New rural policy aims at valorising unused resources and opportunities while preserving the environment and adjusting to an ageing demographic structure. Innovative public service delivery and new forms of co-operative governance play a key role.
- Long-term urban growth is high on the policy agenda. Sustainable growth and mitigating climate change are the key urban development challenges. Ensuring a clean and attractive urban environment is increasingly recognised as an integral aspect of creating dynamic cities rather than a mere offsetting of their undesired consequences.
- Regional policy suffers from unclear management at national level. It needs to be co-ordinated by an identifiable single "gatekeeper" at the national level. Unified, co-financed, and multi-year funding for regional policy helps ensure the credibility and effectiveness of public investment.
- An effective use of knowledge in the policy-making process requires appropriate mechanisms for dialogue and co-ordination within and across levels of government, as well as across public and private spheres. Monitoring and evaluation mechanisms need to be strengthened to ensure policy learning.

Chapter 1

Understanding and Explaining Regional Growth

Introduction and key policy messages

An understanding of how regional development policy can best support regional growth stems from an understanding of regional economic performance. OECD regions are very heterogeneous; each possesses very different levels of income, rates of employment, mixes of high and low productivity activities, internal and external assets, comparative advantages, stages of development and public policies. This chapter attempts to quantify disparities in regional economic performance, and to analyse why and how regions grow differently.

Key Policy Messages

- Across all OECD countries, regions vary greatly in per capita income levels and growth rates; there are few signs that they are becoming more similar.
- Urban areas tend to have higher income levels than rural regions, but not necessarily higher growth rates; there is no consistent relationship between urban concentration and economic performance.
- Lagging regions contribute significantly to overall national growth. In most countries, they have generated more than 50% of national growth over the past decade.
- Growth is linked to the use of productive factors (labour, capital, technology). Faster growth in all types of regions depends on a combination of the increased use of labour with increased productivity.
- Higher productivity, in turn, depends on a range of factors, notably infrastructure, human capital and innovation performance.
- No single factor explains improved performance in a region. The positive impact of infrastructure investment on growth, for example, depends on educational levels and innovation performance.
- Simple concentration of investment and assets is not enough. The key appears to be how assets are used, how different stakeholders interact and how synergies are exploited in different types of regions. The market does not always appear to maximise this potential alone.

Persistent disparities suggest unused potential for growth in developed countries

Nations have different social, economic and trade policies; different educational and legal systems and institutions; and different economic histories. These result in different endowments of physical and human capital. It is therefore unsurprising that regions have different average levels of per capita income (whether measured as household income or GDP). Within an individual country, policies, institutions and history are essentially common to all. Hence, per capita incomes should be similar across the regions within that country. However, this is not the case. Furthermore, disparities typically persist for decades, even generations. It is clear that countries cannot rely on market forces to eliminate income differentials (*i.e.* firms moving to areas where labour is cheaper or more plentiful, or labour moving to areas where wages are higher). Income convergence is slow or non-existent. New theories of place-based economic growth imply that the growing populations and wealth of major urban areas are an unavoidable result of their economies of scale and not something that necessarily require corrective action. Thus, patterns of growth lie at the heart of the debate over what public policy, and more specifically regional policy, should be aiming to do, how to do it and where.

Table 1.1. **Ratios of per capita GDP by region, 2005**

Country	Ratio of highest to lowest	Ratio of second highest to lowest
Australia	1.57	1.52
Austria	2	1.52
Belgium	2.75	1.37
Canada	2.39	2.21
Czech Republic	2.69	1.18
Denmark	1.63	1.23
Finland	1.56	1.19
France	1.95	1.2
Germany	2.58	2.01
Greece	1.76	1.11
Hungary	2.57	1.56
Italy	2.04	2.04
Japan	1.71	1.71
Korea	1.28	1.24
Mexico*	6.24	4.49
Netherlands	1.31	1.15
Norway	1.87	1.26
Poland	2.32	1.57
Portugal	1.7	1.33
Slovak Republic	3.43	1.32
Spain	1.91	1.85
Sweden	1.66	1.13
UK	2.01	1.41
USA	5.17	2.46
National GDP, EU15	2.92	1.8
National GDP, EU27	4.27	2.63
National GDP, OECD	7.46	4.6

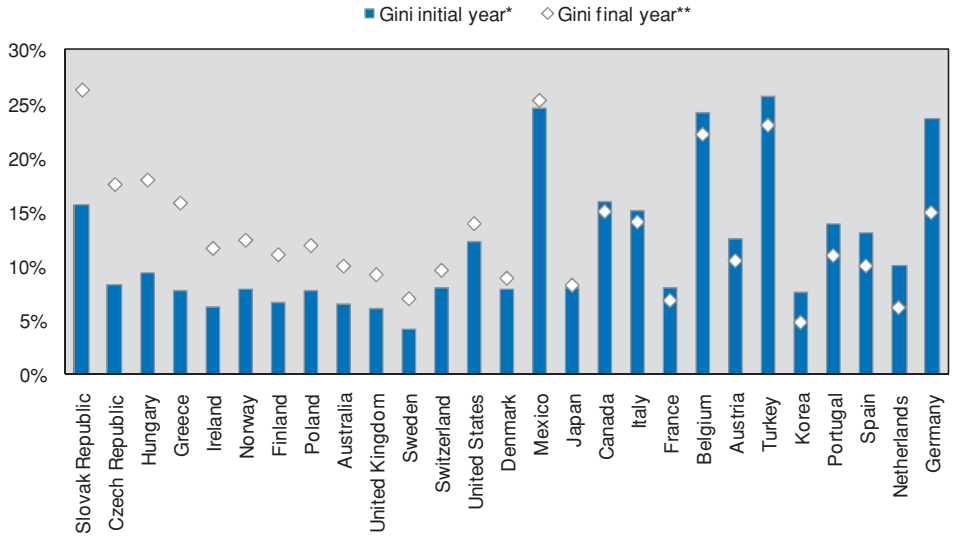
*2004 for Mexico

Source: OECD (2008), Regional Database.

OECD countries are characterised by substantial regional disparities. Per capita GDP in the top-ranked region of a country is at least double that of the lowest-ranked region, and sometimes far more than that (Table 1.1). In many countries, the region in which the capital city is located has by far the highest GDP per capita. The main exceptions in the EU are Germany, where the Hamburg region has a higher per capita GDP than the Berlin

region; and Italy, where the Milan region has a higher GDP per capita than Rome. Table 1.1 also shows that when the highest per capita GDP region is excluded, differentials are narrower, although they still remain large. In general, the lowest GDP regions in European countries fall behind the region with the second highest GDP by 20-60%, leaving considerable scope for catching up. Income differentials within most non-European countries (where regions generally cover larger geographical areas than the regions considered here) tend to be wider. Other measures, namely the Gini[1] coefficient (see Figure 1.1), the Atkinson[2] measure, and a general entropy[3] measure, give similar results.

Figure 1.1. **Regional disparities in per capita GDP within OECD countries**



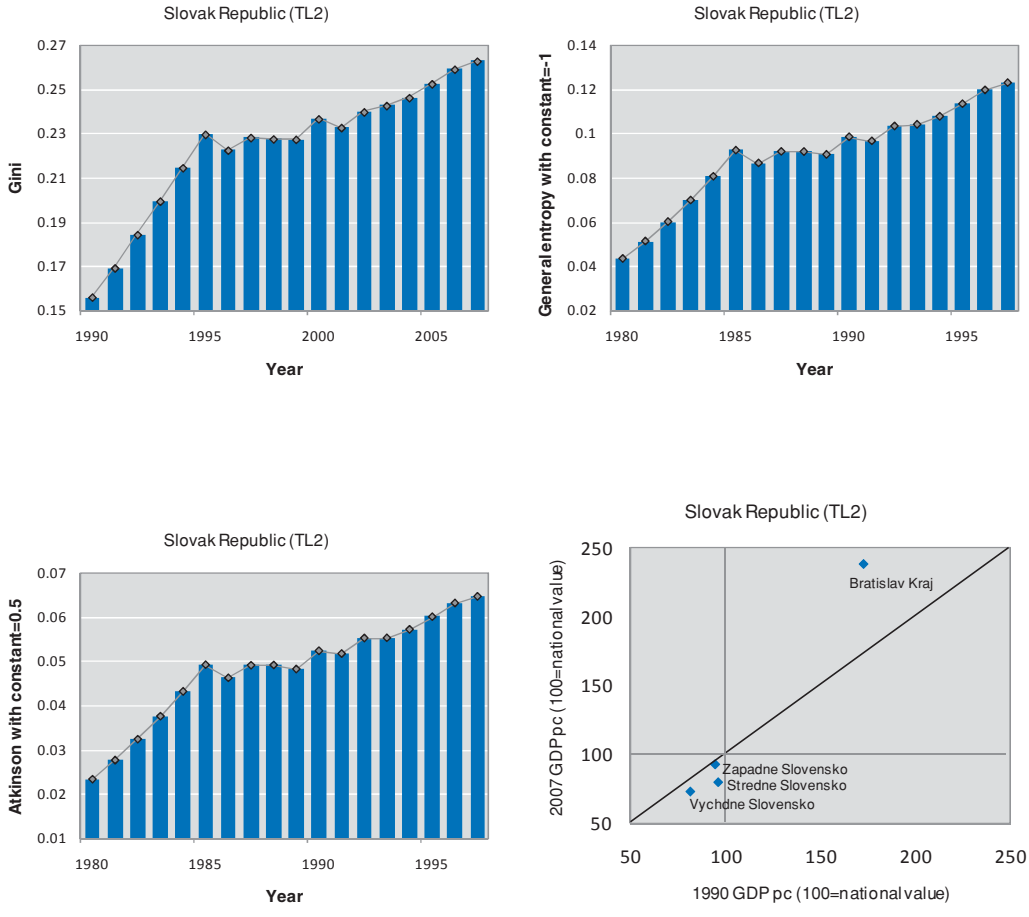
* The initial year is 1963 for the United States, 1980 for Austria, Belgium, Finland, France, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, the United Kingdom; 1981 for Australia; 1985 for Korea; 1990 for the Czech Republic, Hungary, Poland, the Slovak Republic, and Turkey; and 1991 for Germany.

**The final year is 2007 for all countries except for Korea and Norway (2005) and for Turkey (2001).

Source: Own calculations using the Cambridge Econometrics Database for European countries. For the remaining countries data are taken from: Australian Bureau of Statistics for Australia, Statistics Canada for Canada, Ministry for Internal Affairs and Communications for Japan, Korea National Statistical Office for Korea, National Statistical Office (INEGI) for Mexico, and US Bureau of Economic Analysis for the United States.

Disparities across countries in the OECD have evolved in very different ways. Many countries (typically new EU member states such as the Czech Republic, Hungary, Poland and the Slovak Republic; but also Ireland, the United Kingdom, Sweden, Greece, Switzerland and Norway) have seen territorial inequality increase (Figure 1.2 gives one example, and Chapter 4 shows trends in OECD countries). Other countries – such as Austria, Belgium, Germany, the Netherlands, Norway, France, Portugal, Turkey and Spain – have experienced convergence (Figure 1.3 gives one example, and Chapter 4 shows country trends). But there are also experiences of rising and falling inequality – such as Italy, Canada, the United States, Finland, Australia, Mexico, Korea and Japan (Figure 1.4 gives one example, and Chapter 4 shows country trends).

Figure 1.2. **Inequality indices and movements in regional GDP per capita in the Slovak Republic 1990-2007**

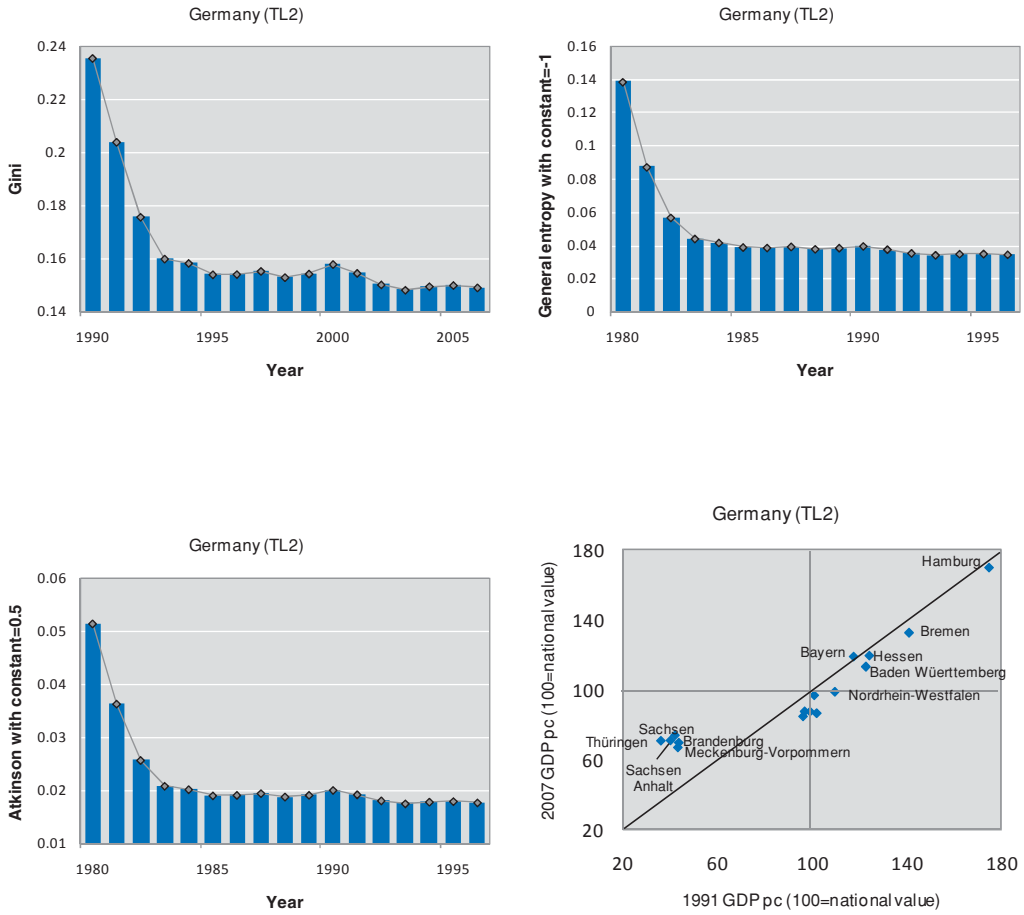


*Inequality indices: Gini, general entropy and Atkinson.

**Regional movements in GVA per capita as percentage of the national level.

Source: Own calculations using data from Cambridge Econometrics.

Figure 1.3. **Inequality indices and movements in regional GDP per capita in Germany 1991-2007**

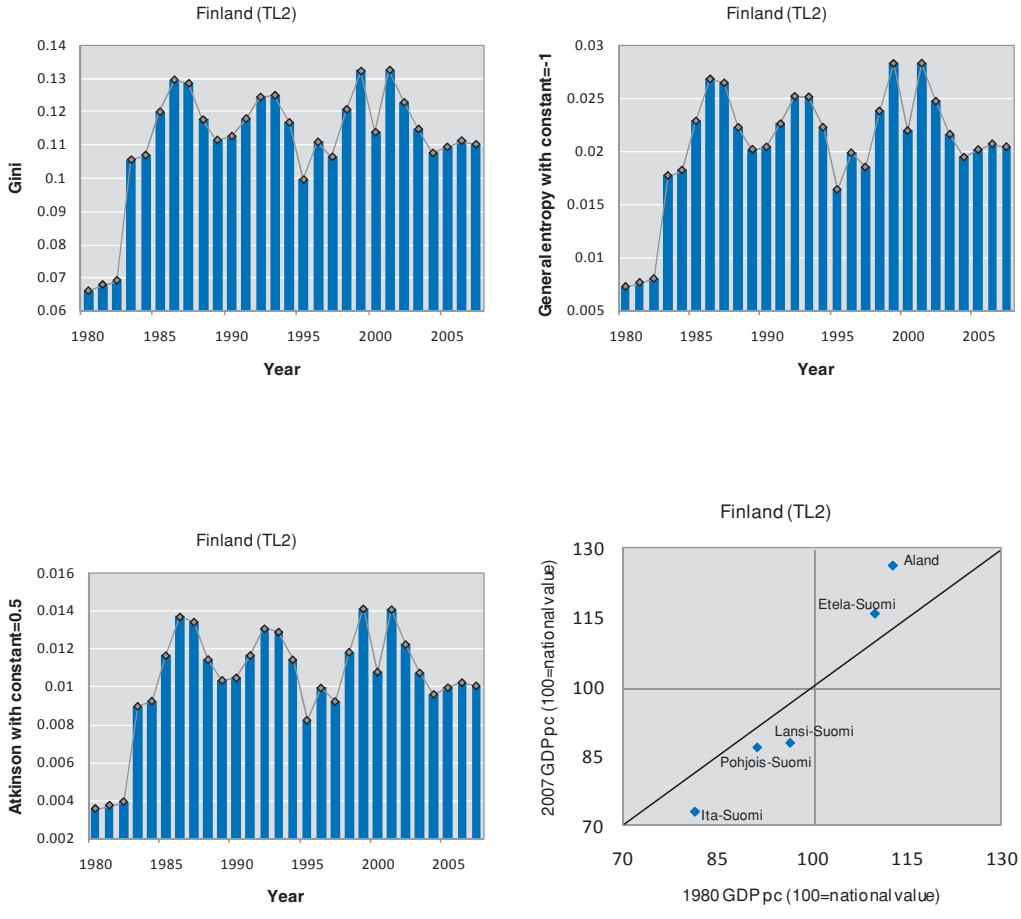


*Inequality indices: Gini, general entropy and Atkinson.

**Regional movements in GDP per capita as percentage of the national level.

Source: Own calculations using data from Cambridge Econometrics.

Figure 1.4. **Inequality indices and movements in regional GDP per capita in Finland 1980-2007**



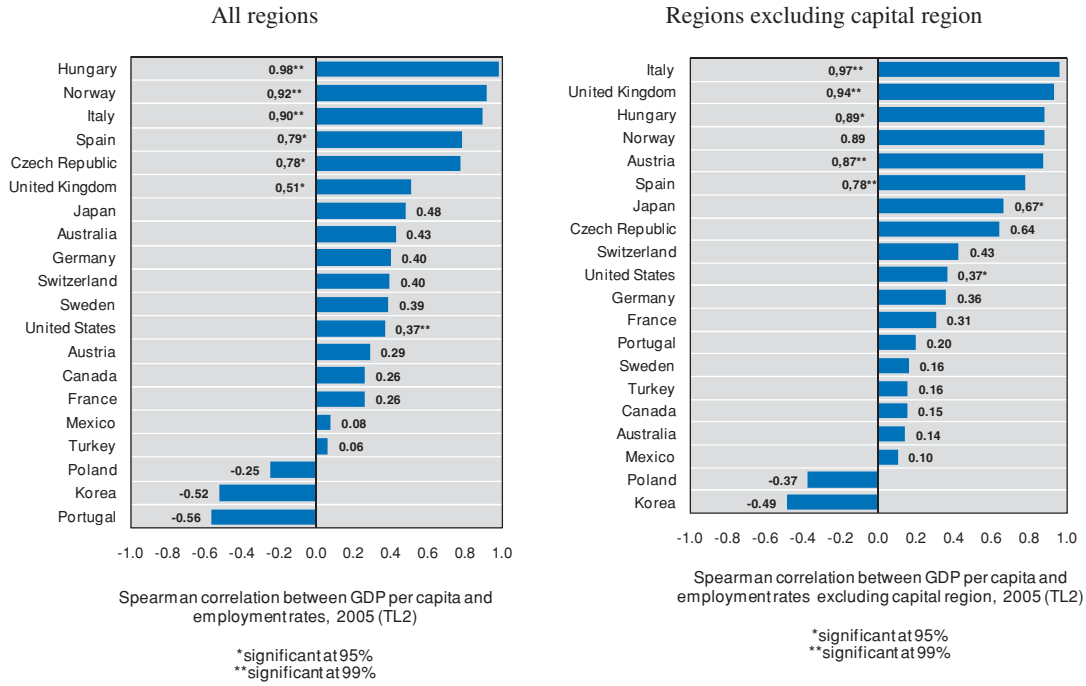
*Inequality Indices: Gini, General Entropy and Atkinson

**Regional movements in GVA per capita as percentage of the national level<

Source: Own calculations using data from Cambridge Econometrics.

Regions with higher employment and participation rates tend to enjoy higher per capita GDP, while those with low employment rates are behind in terms of per capita GDP (Figures 1.5 and 1.6). An estimated coefficient[4] suggests that regions with an employment rate one percentage point higher than the national average enjoy approximately one third of a percentage point higher per capita incomes than the national level. This implies that per capita regional GDP in most countries is in direct proportion to the numbers of people in employment in those regions.

Figure 1.5. **Spearman correlation between regional GDP per capita and regional employment rates 2005 (TL2)**



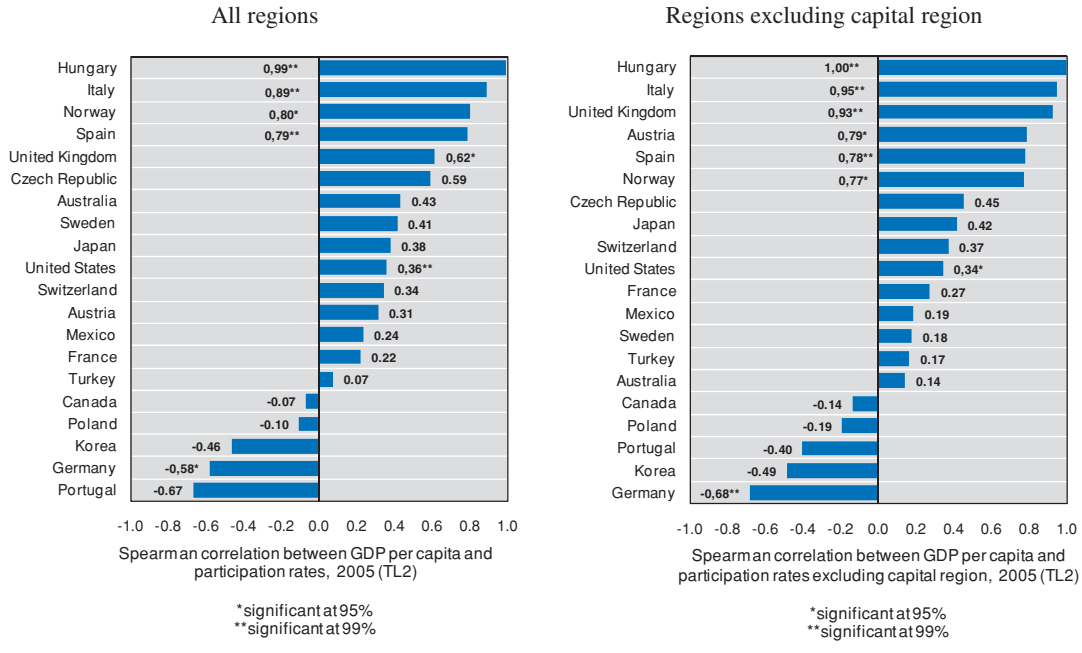
*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level.

Note: The capital TL2 regions are Australian Capital Territory (AU8) for Australia; Wien (AT13) for Austria; Brussels (BE1); Ontario (CA35) for Canada; Praha (CZ01) for the Czech Republic; Hovedstadsregionen (DK01) for Denmark; Etela-Suomi (FI18) for Finland; Ile de France (FR10) for France; Berlin (DE3) for Germany; Attiki (GR3) for Greece; Kosep-Magyarorszag (HU10) for Hungary; Lazio (IT4) for Italy, Kanto (JPC) for Japan; Capital Region (KR01) for Korea; Distrito Federal (ME09) for Mexico; Zuid-Netherland (NL04) for the Netherlands; Oslo (NO01) for Norway; Mazowieckie (PL12) for Poland; Lisboa (PT17) for Portugal; Bratislav Kraj (SK01) for the Slovak Republic; Madrid (ES30) for Spain; Stockholm (SE01) for Sweden; Espace Mettelland (CH02) for Switzerland; Ankara (TR51) for Turkey; London (UKI) for the United Kingdom; and District of Columbia (US09) for the United States.

Source: Own calculations using the OECD Regional Database (2008).

Similarly, higher unemployment rates are associated with lower per capita regional GDP (Figure 1.7). Korea, Poland and Mexico are the only countries for which the relationship is the opposite to what would normally be expected, and it is insignificant for Australia, Austria, the Czech Republic, France, Sweden, Switzerland, Turkey and the United States. In general, however, the higher the unemployment rate, the lower the GDP per capita. The policy implication is that outside the capital city regions and in the majority of countries, labour is generally underused. These regions are therefore operating below their potential, with a direct impact on productivity and income.

Figure 1.6. **Spearman correlation between regional GDP per capita and regional participation rates 2005 (TL2)**



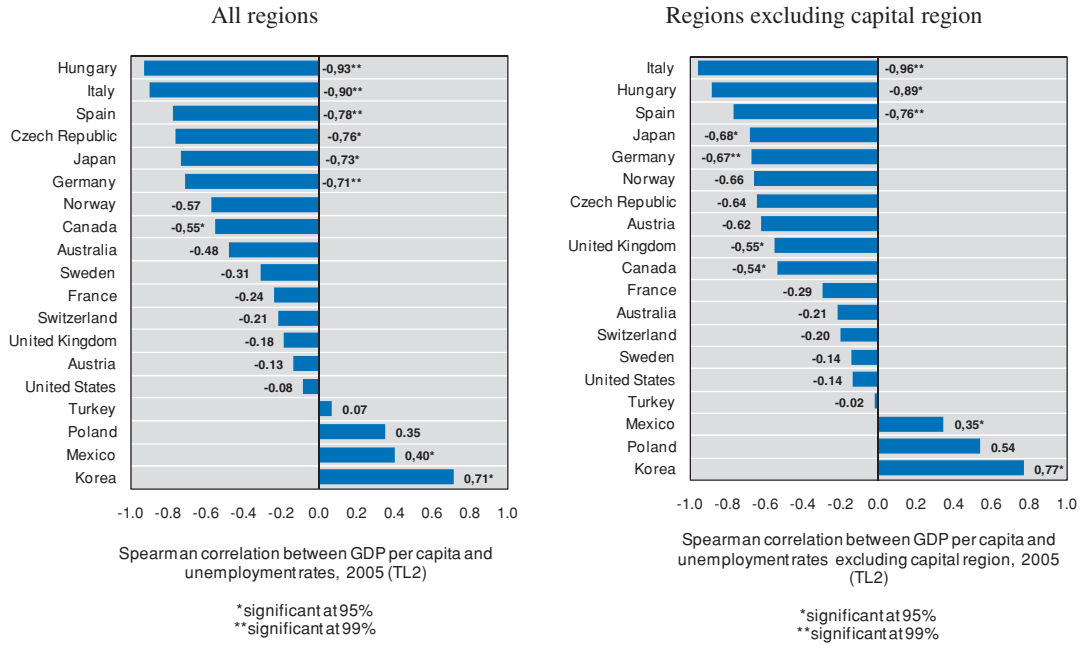
*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level

Note: See note for Figure 1.5.

Source: Own calculations using the OECD Regional Database (2008).

If participation rates in low GDP per capita regions could be brought up to those of the best-placed region, and if unemployment rates could be reduced towards national averages, per capita GDP in lagging regions would potentially rise, thereby reducing regional imbalances in GDP per capita (though rural-urban differentials might persist where they stem from factors other than labour market conditions, such as geographical remoteness). In most places, lagging regions have relatively fewer people in the active age group in their labour forces, and because more of them are unemployed. Furthermore, spatial patterns of unemployment tend to persist over prolonged periods of time, especially in Europe, suggesting that employment problems in particular regions do not reflect temporary or cyclical factors, but are structural in nature. Between 1993 and 2003, the relative position of 80% of high unemployment regions in Europe remained unchanged. The equivalent figure is about 65% in North America and less than 50% in the Asia/Pacific region (OECD, 2005). In that respect, and excluding most of the highest income regions, it seems that regional disparities reflect different labour market outcomes.

Figure 1.7. **Spearman correlation between regional GDP per capita and regional unemployment rates 2005 (TL2)**



*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level.

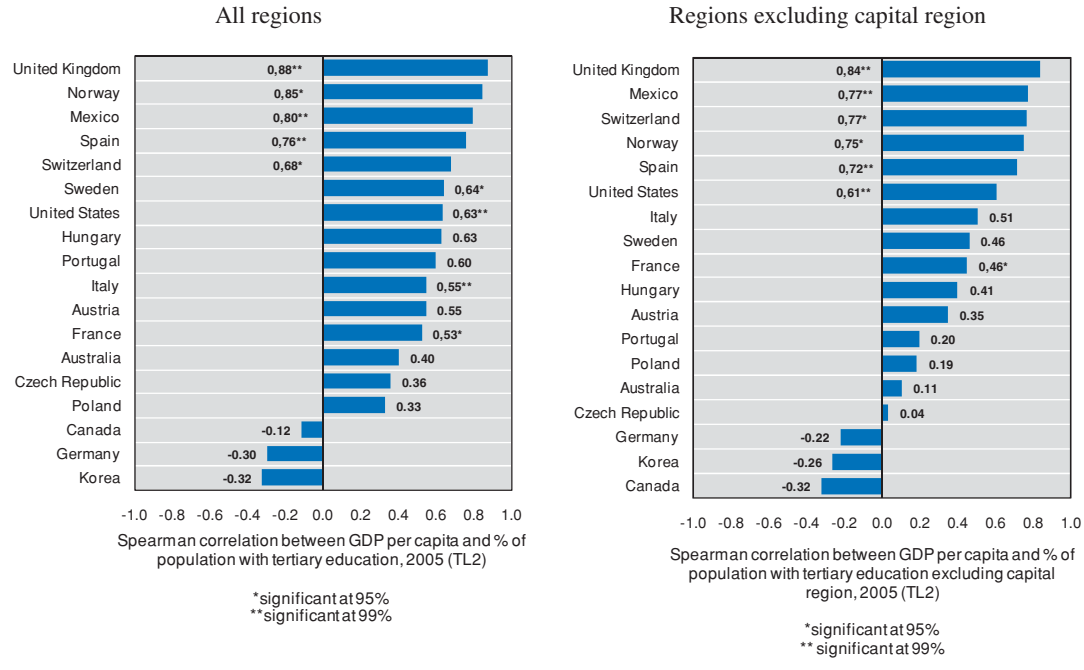
Note: See note for Figure 1.5.

Source: Own calculations using the OECD Regional Database (2008).

Two important supply factors influencing regional labour markets are educational attainment and production specialisation patterns. For example regional production specialisation patterns are estimated to account for 30% of the average employment differentials between regions in Italy, almost 50% in Germany and 40% in Spain. A number of empirical studies find links between educational attainment and regional unemployment rates (Overman and Puga (2002) and Elhorst (2003) for a survey). Regions where unskilled labour is relatively abundant are likely to be negatively affected by skill-biased technological change and competition from newly emerging countries.

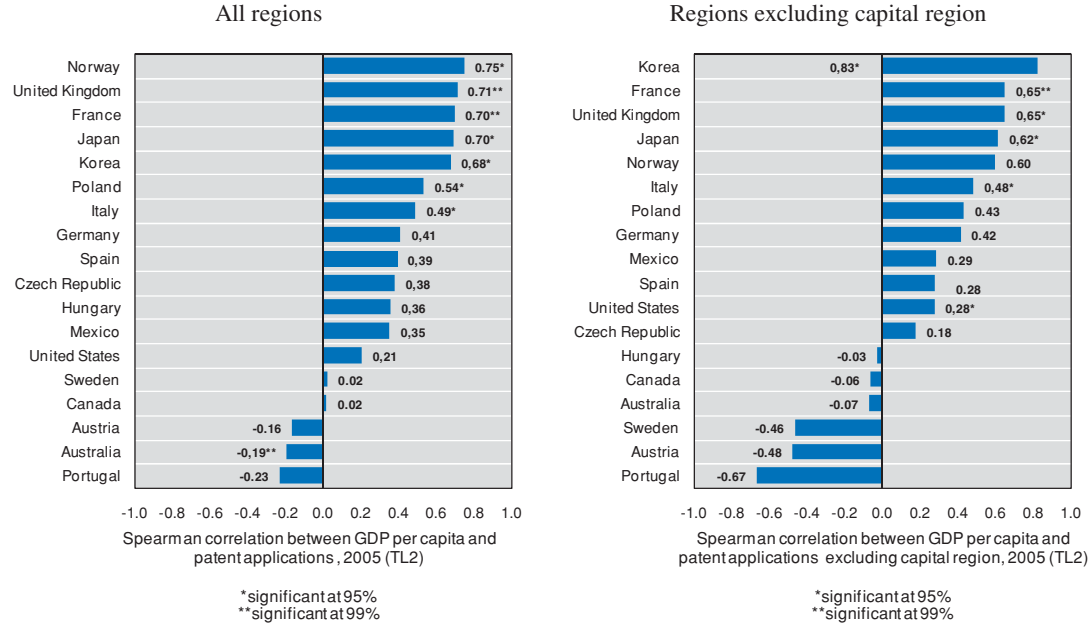
Educational attainment levels and the capacity of regions to innovate are also associated with GDP per capita levels. Regions with higher GDP per capita enjoy higher levels of tertiary education (Figure 1.8). Except in Canada, Germany and Korea, the relationship between GDP per capita and tertiary education is positive in 15 OECD countries. In several of them (France, Italy, Norway, Spain and the United States), the relationship is statistically significant. The capacity of regions to create innovation, measured through patent application, is also positively associated with GDP per capita (Figure 1.9). Nevertheless this positive relationship is not present in Australia, Austria, Canada, Hungary, Portugal and Sweden when the capital city is excluded. The direction of causality in this analysis is not clear. Additional analysis in this chapter estimates the impact of human capital and patent application on GDP per capita growth.

Figure1.8. **Spearman correlation between regional GDP per capita and percent of regional population with tertiary education, 2005 (TL2)**



*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level.
Note: See note for Figure 1.5.
Source: Own calculations using the OECD Regional Database (2008).

Figure 1.9. **Spearman correlation between regional GDP per capita and regional patent applications 2005 (TL2)**



*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level
Note: See note for Figure 1.5.
Source: Own calculations using the OECD Regional Database (2008).

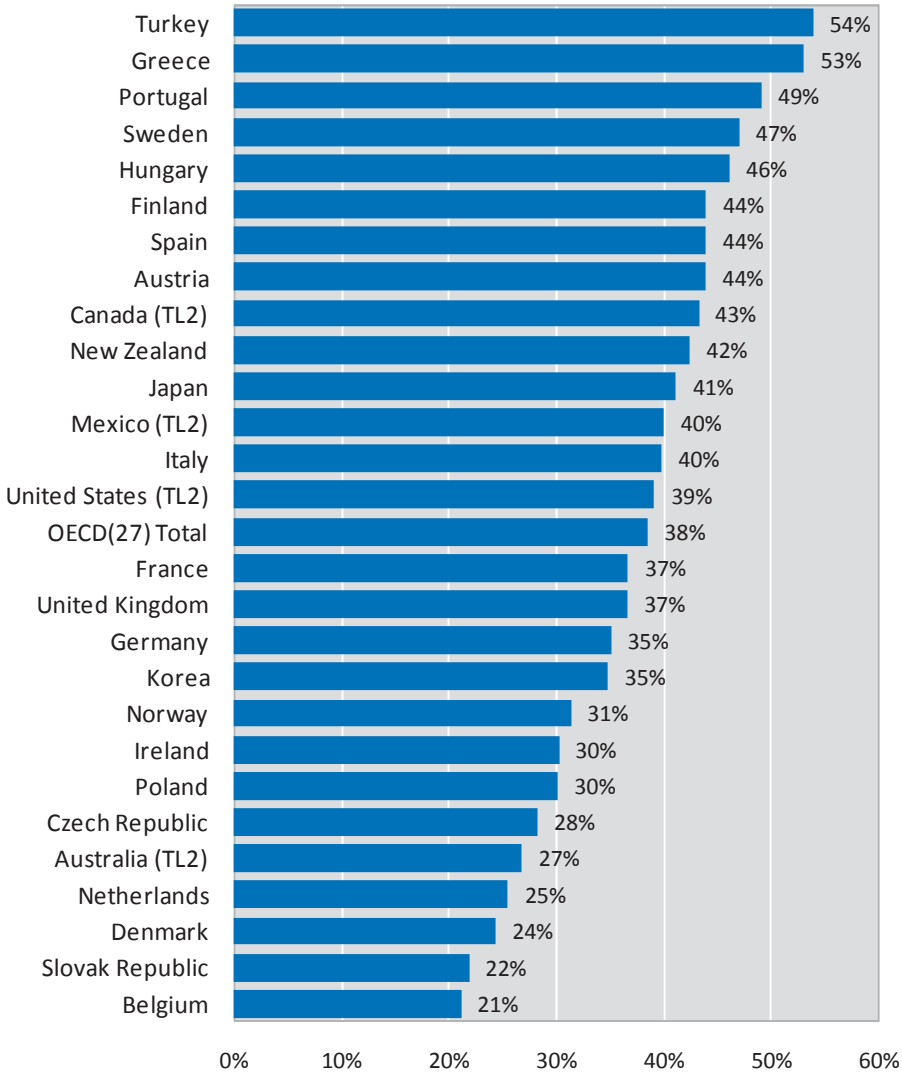
In principle, labour mobility could help reduce regional employment and unemployment imbalances, but in practice there are transaction costs to labour mobility (as discussed in Chapter 2). This is confirmed by the fact that differences in regional unemployment and employment rates persist over prolonged periods of time. Although consideration should be given to policies, such as housing, which hinder geographic labour mobility, migration will not be the ultimate cure for regional imbalances. Even where there are no legal barriers to internal migration, income differentials have persisted for many generations in some countries, suggesting that the response to wage differentials and job opportunities can be very sluggish. Migration can be detrimental to lagging regions, as the propensity to migrate is much higher among the highly skilled, depriving the region of their skills and leaving the low-skilled more dependent on local employment opportunities. Alternative strategies to make lagging regions more competitive can include attracting private capital, improving their accessibility and connectivity to other regions, and promoting endogenous growth by identifying untapped potential sources of growth.

Concentration drives growth, but private benefits can bring societal costs

The inequalities described above are an outcome of several processes, of which the most significant is concentration of economic activity. In approximately half of OECD countries more than 40% of the national GDP is produced in less than 10% of all regions (Figure 1.10). These account for a small share of the country's surface and a high share of its population. The geographic concentration of economic activity occurs mainly because of the benefits associated with "economies of agglomeration". People want to live where firms, and therefore job opportunities, are concentrated. For their part, firms want to locate where demand, and therefore population, is large, where they know will have a deep labour market to draw from, and where suppliers and buyers in their industry are located. New economic geography theories explain why and how agglomerations become increasingly attractive (Box 1.1). These factors have resulted in strong concentrations of certain activities in specific locations – sectoral specialisations and clustering. They have also led to the concentration of innovation, with patenting activity being, in general, even more strongly concentrated than output (OECD, 2009a).

Concentration in output is closely related to urbanisation processes. For the first time in history, the population of cities is exceeding that of the countryside, and the largest cities in the world are no longer located in the richest countries. Even in developing countries, where agriculture remains the dominant economic activity, people flock to the biggest cities despite their low standards of housing and sanitation, and often high levels of poverty and crime. Since they do this of their own free will, it must be assumed that they believe that they will be better off in the city than in the rural areas. In rich countries, moving to the largest cities involves higher prices for accommodation, possibly longer and more tedious commutes, and possible difficulties in finding and keeping the high-paid jobs that attract migrants in the first place. Nevertheless, these are costs that are willingly paid by the increasing numbers of people who can afford to do so. In 2005, one-third of the OECD population lived in large urban regions, *i.e.* TL3 regions with populations exceeding 1.5 million inhabitants (Figure 1.11).

Figure 1.10. **Share of national GDP contributed by the wealthiest 10% of TL3 regions, 2005**



Note: Where TL3 data are unavailable, TL2 data is used instead.

Source: OECD (2009) *Regions at a Glance,* OECD Publishing, Paris.

Box 1.1. New economic geography theories

New economic geography (NEG) theories analyse the circular or cumulative causation that drives increasing concentration. They explain why consumers and firms tend to agglomerate together in specific geographic areas, a phenomenon already noted and analysed by Alfred Marshall in 1890. Studies of this kind include Perroux's notion of "growth poles" (1955), Myrdal's analysis of "circular and cumulative causation" (1957), and Hirschman's concept of "forward and backward linkage"' (1958). The NEG formalises these cumulative causation mechanisms into a mathematical analytical framework (Krugman, 1991). Agglomeration economies occur when a firm enjoys increasing returns to scale in a particular place, either because of the presence of natural advantages (*i.e.* natural resources, location etc.), monopolistic protection, political reasons (*e.g.* the decision to create a capital city) or any other reason. The presence of increasing returns to scale induces other firms to locate there, as well as people in search of higher wages, job opportunities and culture.

There are a number of inter-connected mechanisms that work to produce agglomeration economies:

- Sharing of indivisible facilities such as local public goods or facilities, particular to a place, that serve several individuals or firms. Some examples are laboratories, universities and other large facilities that cannot belong to one particular agent but where some exclusion is implicit in their provision.

- Gains from the wider variety of input suppliers that can be sustained by a larger final-goods industry, that is, the presence of spillovers along with forward and backward linkages allows firms to purchase intermediate inputs at lower cost.

- Gains from the narrower specialisation that can be sustained with higher production levels. Several firms specialise in producing complementary products, reducing overall production costs.

- Risk reduction: if there are market shocks, firms can adjust to changes in demand as they have access to a deep and broad labour market that allows them to expand or contract their demand for labour.

- Matching mechanisms by which agglomeration improves the expected quality of matches between firms and workers, so both are better able to find a better match for their needs. Similarly, an increase in the number of agents in the labour market improves the probability of matching.

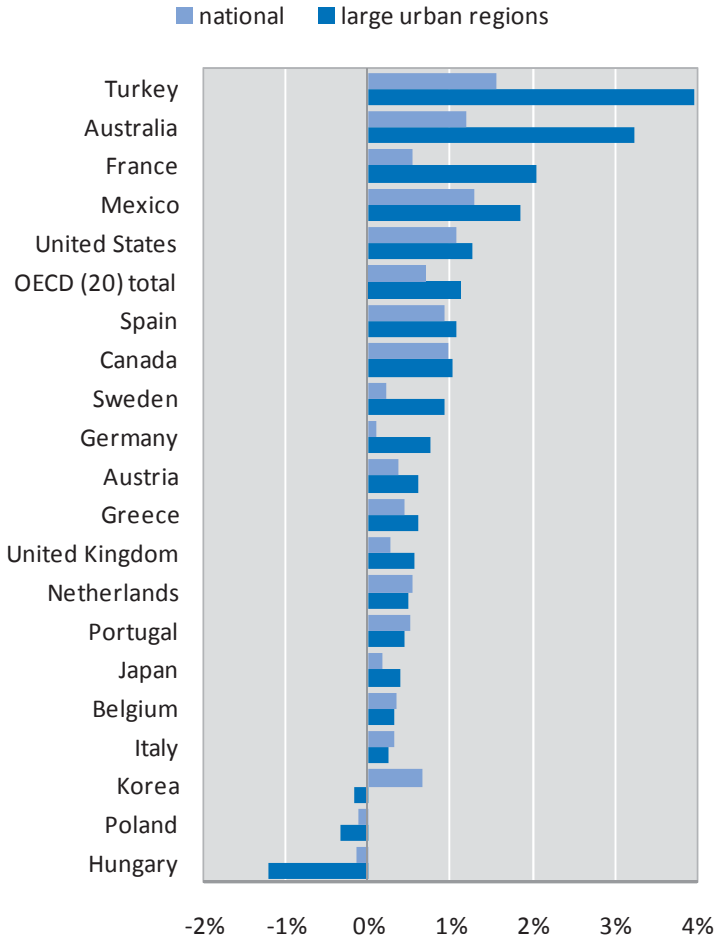
- Learning mechanisms based on the generation, diffusion, and accumulation of knowledge; these refer not only to learning about technologies, but also how to acquire the skills.

Source: OECD and various sources including Krugman, P. (1991), "Increasing Returns and Economic Geography", The Journal of Political Economy, Vol. 99, No.3, pp. 483-99.

However, the benefits associated with economies of agglomeration are not unlimited; cities can reach a point where they no longer provide increasing returns and become less competitive. New economic geography theory predicts that further concentration is not always the most desirable outcome; external economies of scale are overtaken by the external diseconomies of congestion. Encouraging even more concentration under these conditions will not yield higher per capita GDP growth rates. Comparing levels of GDP

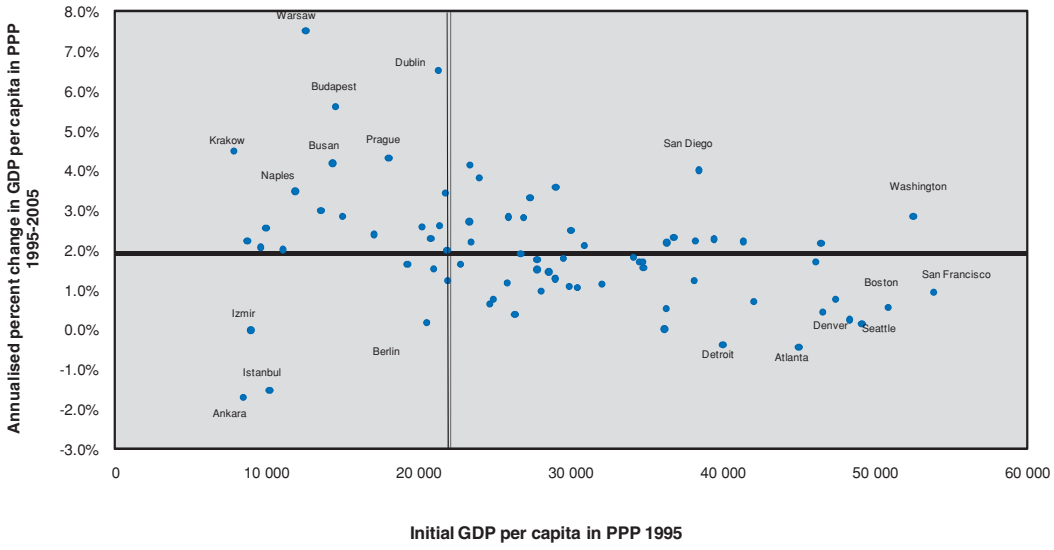
and growth rates of urban areas with more than 1.5 million inhabitants with national and OECD averages over five year and ten year periods reveals that although metro-regions usually have higher than average per capita GDP, in most cases they have not experienced higher than average national growth rates. Figure 1.12 displays the growth rates and initial levels of GDP per capita in 78 metro-regions, benchmarked to the OECD's average annual growth rate over the last decade and its initial level of GDP per capita. Out of the sample of 78 metro-regions, only 49% grew on average faster than the OECD average national annual growth rate, and only 45% grew faster than their national averages.

Figure 1.11. **Annual percentage change in national populations and in populations living in large urban TL3 regions, 1995 to 2005**



Source: OECD (2009) *Regions at a Glance*, OECD Publishing, Paris.

Figure 1.12. **Initial GDP per capita and annual average growth rates in GDP per capita among 78 metro-regions, 1995 and 2005**



Note: Coverage: due to data limitations, the time period is shorter in several metro-regions: Canada (one year of data: 2003-2004), New Zealand (three years: 2000-2003), the United States (three years: 2001-2004), Turkey (six years 1995-2001), Mexico (nine years: 1995-2004) and in the rest it is 1995-2005. GDP expresseded in terms of purchasing power parity (PPP).

Source: Own calculations based on a sample of urban areas where labour markets are self-contained and population was above 1.5 million people.

The negative externalities of large concentrations in urban areas raise the question of whether the costs borne by society as a whole are becoming unsustainable. The externalities include high transportation costs (*e.g.* congested streets), loss of productivity from long commuting times, higher health costs and the impact on global warming. As externalities, they are not internalised by firms and households, and may only show up as a direct cost in the long term. The manifestation of these different types of costs varies among cities but OECD analysis has highlighted a negative correlation between city size and GDP per capita above a threshold of 6-7 million inhabitants (OECD, 2006). One hypothesis for this is that the relationship between dynamism and city size probably follows an inverted U-curve, due to increasing negative externalities (OECD, 2006). This has led to debate as to whether increasing concentration leads to the "privatisation of benefits and socialisation of costs".

Public intervention could help augment economies of agglomeration and prevent or delay their decline. As labour markets display asymmetry of information between those searching for a job and those hiring, public employment offices and other types of institutional support may help improve the functioning of local labour markets. As well as a freer flow of information, linkages among firms require a good transportation system that allows products to be exchanged cheaply. Knowledge will only "spill over" across a region if there are appropriate mechanisms (networks, physical spaces, etc.) for people to exchange ideas on a daily basis. Such spaces are unlikely to be provided solely by the private sector. As concentration is not the only condition for agglomeration economies, it

is not surprising that very large urban areas such as Mexico City, Istanbul or Seoul, but also more advanced cities like Milan, are unable to fully exploit the benefits of concentration.

Growth in "unexpected" places makes a big contribution to national prosperity

There is a tendency to assume that growth is led by the core, high GDP regions and that these regions generate the lion's share of new wealth. Yet, in more than half of OECD countries, the region with the highest GDP per capita contributed less than 25% to national growth between 1995 and 2005 (Table 1.2). The contribution of lagging regions (defined by those regions with a GDP per capita below the national average) was significantly higher than the contribution of the regions with the highest GDP in 85% of OECD countries, and it was higher than the contribution of above-average regions in almost half the countries (Table 1.2). In the Slovak Republic, the Czech Republic and Australia, lagging regions contributed more than 60% of the overall national growth during that decade (Figure 1.13).

If it is accepted that the objective of regional development policy is to help each region maximise its comparative advantage then it is possible to have growth in diverse regions that does not lead to convergence in economic output across all regions. The specific mix of industries and labour skills differs between rural and urban regions; thus the returns to labour and the level of GDP per capita can vary considerably across regions. Analysis shows that within OECD countries some rural regions have higher rates of growth than urban regions. These regions have found ways to exploit their resource endowment and economic opportunities in an efficient manner. High rates of growth may be associated with specific fixed resources such as a scenic environment or highly productive arable land that is not found elsewhere. Rural regions adjacent to urban regions are also often able to take advantage of their proximity. A number of industries, such as warehousing and large scale manufacturing, often favour centrally located rural regions since they offer low cost land, proximity to a large pool of labour and relatively high accessibility. The foreign-owned automobile manufacturers in the United States generally choose locations outside medium-sized urban centres for assembly plant locations since they offer the best combination of access to transport infrastructure, large parcels of land and an adequate labour pool.

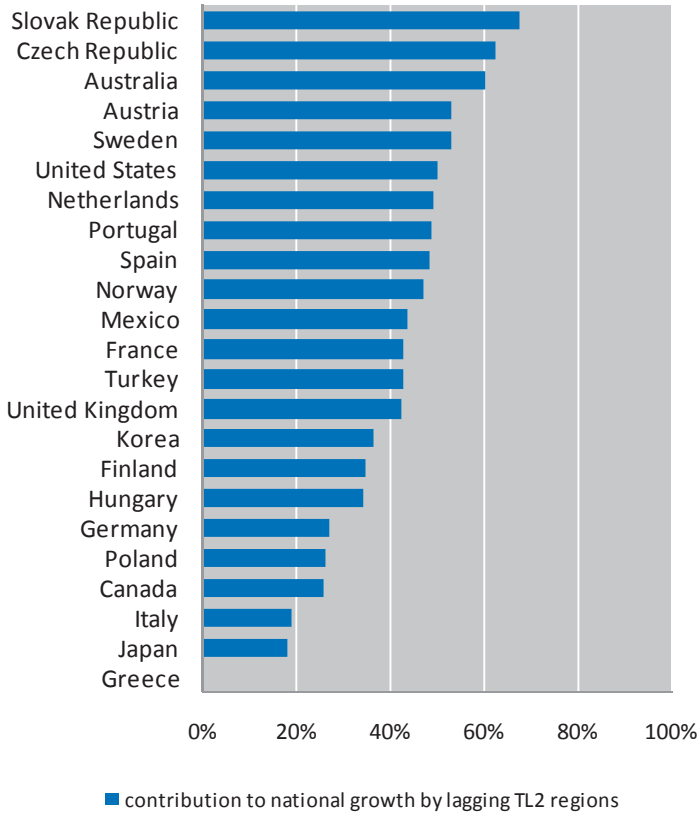
The implications are that bringing about convergence is less important than improving the performance of all regions. Indeed, looking at patterns of growth, it is sometimes difficult to find evidence that convergence is uniformly associated with improved national economic performance. Although convergence and divergence are rarely smooth processes, it is possible to class countries into those where, on average, regional disparities have narrowed over time: Austria, Belgium, France, Germany, Italy, Korea, Netherlands, Norway, Portugal, Spain, Turkey; those where differentials have widened: Australia, Czech Republic, Finland, Greece, Hungary, Ireland, Poland, Slovak Republic, Switzerland, Sweden, Mexico the United Kingdom, the United States; and those where little overall change is evident: Canada, Denmark, Japan (see Table 1.3 and country notes in Chapter 4. It is interesting, too, that with some exceptions, countries with diverging regional income disparities tend to have faster real national GDP growth rates (Table 1.3). This finding is taken up below in the discussion of regional GDP *growth* differentials and policy responses.

Table 1.2. **Annual average contribution to national GDP and share of GDP of (i) the richest region; (ii) lagging regions; and (iii) regions above the national average in GDP per capita, 1995-2005**

		contribution to national growth					share of contribuiton to national growth and GDP share							
	# of TL2 regions	national GDP growth	richest region	regions below av	regions below 75%	regions above av.	richest region contrib.	richest region GDP share	regions below av. contrib.	regions below av. GDP share	regions below 75% contrib.	regions below 75% GDP share	regions above av. contrib.	regions above av. GDP share
Australia	8	4.1%	0.1%	2.5%	0.0%	1.6%	2%	2%	60%	60%	0%	0%	40%	40%
Austria	9	1.4%	0.3%	0.7%	0.0%	0.7%	24%	28%	53%	52%	3%	2%	47%	48%
Canada	12	3.8%	0.0%	1.0%	0.1%	2.9%	1%	0%	26%	35%	2%	2%	74%	65%
Czech Republic	8	2.9%	1.1%	1.8%	0.0%	1.1%	38%	20%	62%	80%	0%	0%	38%	20%
Finland	5	3.2%	0.0%	1.1%	0.0%	2.1%	1%	1%	35%	45%	0%	0%	65%	55%
France	22	2.3%	0.7%	1.0%	0.0%	1.3%	30%	28%	43%	43%	0%	0%	57%	57%
Germany	16	1.4%	0.1%	0.4%	0.2%	1.0%	5%	4%	27%	29%	14%	11%	73%	71%
Greece	4	1.6%	1.9%	-0.3%	0.0%	1.9%	116%	38%	-16%	62%	0%	0%	116%	38%
Hungary	7	5.0%	2.8%	1.7%	0.0%	3.3%	56%	41%	34%	49%	0%	0%	66%	51%
Italy	21	0.8%	0.0%	0.2%	0.1%	0.7%	0%	1%	19%	25%	16%	20%	81%	75%
Japan	10	1.4%	0.7%	0.3%	0.0%	1.2%	52%	41%	18%	23%	1%	1%	82%	77%
Korea	7	5.1%	0.9%	1.9%	0.0%	3.3%	17%	17%	36%	35%	0%	0%	64%	65%
Mexico	32	4.1%	0.8%	1.8%	0.9%	2.3%	19%	23%	44%	48%	23%	25%	56%	52%
Netherlands	4	1.7%	0.9%	0.9%	0.0%	0.9%	51%	51%	49%	49%	0%	0%	51%	51%
Norway	7	3.4%	1.3%	1.6%	0.0%	1.8%	39%	30%	47%	56%	0%	0%	53%	44%
Poland	16	5.2%	1.6%	1.3%	0.0%	3.8%	30%	17%	26%	30%	0%	0%	74%	70%
Portugal	7	2.2%	0.9%	1.1%	0.0%	1.1%	40%	36%	49%	58%	0%	0%	51%	42%
Slovak Republic	4	5.1%	1.7%	3.4%	1.8%	1.7%	33%	25%	67%	75%	36%	42%	33%	25%
Spain	19	3.8%	0.8%	1.8%	0.1%	2.0%	20%	17%	48%	50%	1%	2%	52%	50%
Sweden	8	3.4%	1.4%	1.8%	0.0%	1.6%	42%	25%	53%	67%	0%	0%	47%	33%
Turkey	26	2.0%	0.2%	0.9%	0.4%	1.2%	12%	7%	43%	31%	21%	13%	57%	69%
United Kingdom	12	3.2%	0.8%	1.4%	0.0%	1.9%	25%	17%	42%	51%	0%	0%	58%	49%
United States	51	3.3%	0.0%	1.7%	0.1%	1.7%	1%	1%	50%	49%	2%	2%	50%	51%

Regions below the average are those regions with an initial (1995) GDP per capita below the national average, and *vice versa*.
The GDP share is computed for the initial year 1995. Countries with fewer than four TL2 regions (Denmark, Iceland, Ireland and Luxembourg) are not included.
The contribution to national growth of each region depends on the growth rate of each region and their overall size (*i.e.* share of GDP).
Chapter 4 maps the contribution of TL2 regions to national growth for OECD countries.
Source: Own calculations using data from OECD (2008) Regional Database.

Figure 1.13. **Contribution to national growth by TL2 regions with a GDP per capita below the national average, 1995-2005**



The contribution to national growth of each region depends on the growth rate of each region and its overall size (*i.e.* share of GDP).

Source: Own calculations using data from OECD (2008) Regional Database.

Even though economic activity tends to concentrate in specific areas, especially in large cities, labour productivity and GDP per capita growth rates are not necessarily higher in areas of concentration. In fact, they tend to be more evenly spread-out across the territory, especially growth rates. For instance, in Spain the regions with the highest density of output – Madrid, Barcelona and Vizcaya – are also generally the most productive regions. However, they are not the most dynamic Spanish regions in terms of GDP per capita growth (with the exception of Vizcaya). There are higher pockets of growth in the southern regions of Badajoz, Almeria, Cadiz, Huelva and Malaga (Figure 1.14).

Table 1.3. **National growth rates in converging and diverging countries**

Converging			Diverging		
	Time period	Av. yr. growth		Time period	Av. yr. growth
Norway	1980-2005	2.9%	United States*	1970-2007**	3.1%
Spain	1980-2007	3.0%	Norway	1980-2005	2.9%
Portgual	1980-2007	2.6%	Greece	1980-2007	2.2%
Italy	1980-2007	1.8%	Ireland	1980-2007	5.4%
Austria	1980-2007	2.3%	Finland*	1980-2007	2.7%
France	1980-2007	2.1%	United Kingdom	1980-2007	2.6%
Netherlands	1980-2007	2.5%	Switzerland	1980-2007	1.7%
Belgium	1980-2007	2.1%	Sweden	1980-2007	2.3%
Korea	1985-2005	6.6%	Australia*	1981-2007	3.3%
Turkey	1990-2001	2.8%	Slovak Republic	1992-2007**	4.9%
Germany	1991-2007	1.5%	Hungary	1991-2007**	2.9%
			Czech Republic	1990-2007	2.0%
			Poland	1990-2007	3.9%
			Mexico*	1993-2005	2.8%
min		**1.5%**	**min**		**1.7%**
max		**6.6%**	**max**		**5.4%**
median		**2.5%**	**median**		**2.9%**
average		**2.7%**	**average**		**3.1%**

Note: GDP expressed at constant 2000 prices.

*Inequality over the entire period increased in the four countries. In Finland and in Mexico inequality increased at the beginning of the period and there was no visible trend afterwards. In Australia inequality increased at the end of the period; in the United States it both increased and declined.

** National data available in OECD.Stat cover a shorter period than data used at regional level.

Source: OECD.Stat and own calculations using data from Cambridge Econometrics.

Similarly, in Poland the territories with the highest density of output – Warszawa, Poznan, Krakow, Lodz and Wroclaw – also display the highest levels of productivity in the country, but not necessary the highest growth rates (Figure 1.15).

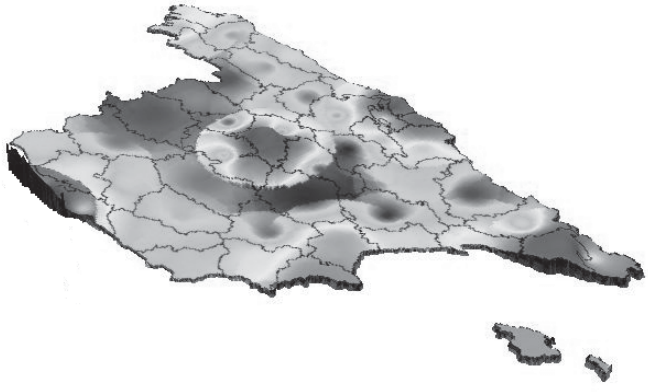
In Germany, Mexico and Korea, the territories with the highest economic density do not necessarily have the highest level of productivity. For example, in Germany output is mostly concentrated in the city-regions of Hamburg, Berlin, Bremen Dusseldorf, Dortmund, Cologne and Stuttgart. While Hamburg, Bremen and Stuttgart are amongst the highest productivity regions in Germany, Cologne, Dortmund and Berlin are not. Furthermore, in terms of GDP per capita growth none of the city-regions is amongst the top 20 German performing regions (Figure 1.16).

In Mexico, Distrito Federal and its outskirts concentrate the highest density of output, while the most productive regions are both northern (Nuevo Leon, Campeche, and Chihuahua) and southern (Quintana Roo and Coahuila). Furthermore, in terms of GDP per capita growth, Distrito Federal and its outskirts are amongst the lowest performing Mexican regions, while pockets of growth seem to occur across the entire Mexican territory, and especially in the south and north (Figure 1.17).

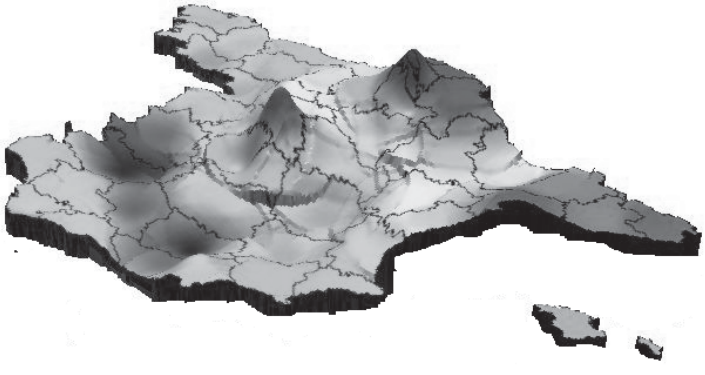
In Korea, the economy is concentrated mostly in Seoul and its surrounding region Incheon, whilst the southern region of Ulsan has the highest productivity, along with the predominantly rural regions Chungcheongnam-do, Jeollanam-do and Gyeonsangbuk-do. These latter three regions are amongst the highest performing Korean regions in terms of GDP per capita growth (Figure 1.18).

Figure 1.14. **3-D mapping of different economic indicators for regions in Spain**

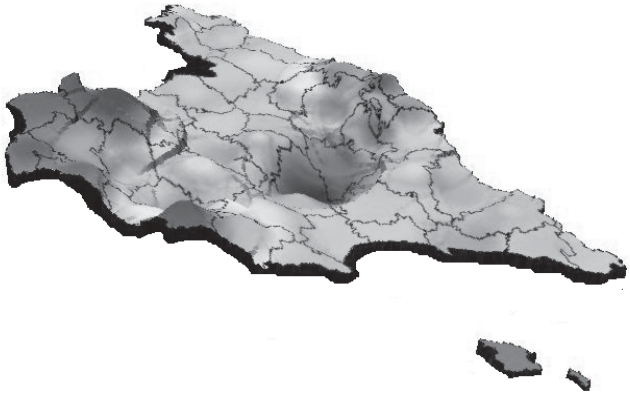
GDP per square kilometre



GDP per worker



GDP per capita annual growth



Note: GDP and GDP per worker data are for 2005, and the growth of GDP per capita is the annual average over 1995-2005.

Source: Own calculations using data from OECD (2008) Regional Database.

Figure 1.15. **3-D mapping of different economic indicators for regions in Poland**

GDP per square kilometre

GDP per worker

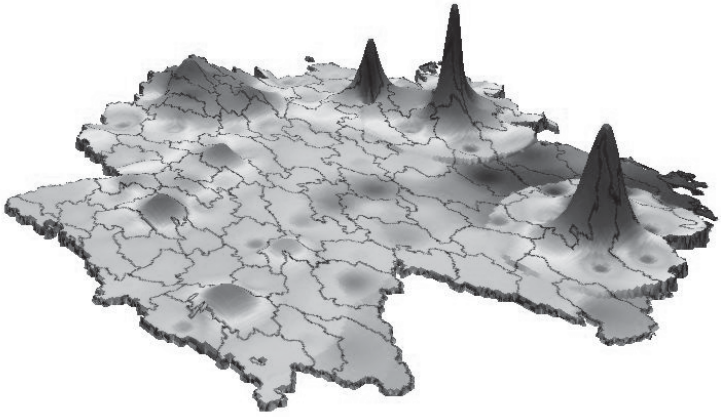
GDP per capita annual growth

Note: GDP and GDP per worker data are for 2005, and the growth of GDP per capita is the annual average over 1995-2005.

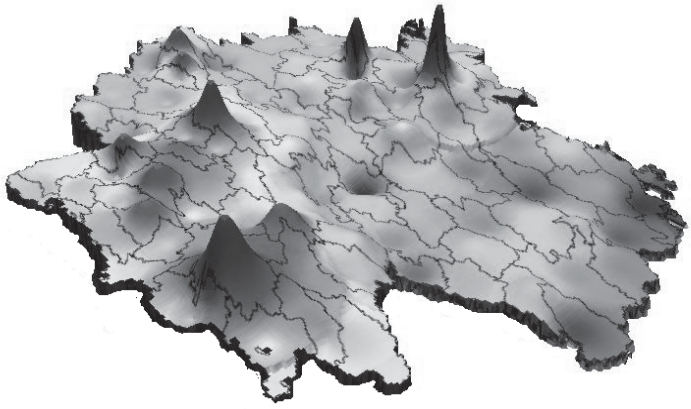
Source: Own calculations using data from OECD (2008) Regional Database.

Figure 1.16. **3-D mapping of different economic indicators for regions in Germany**

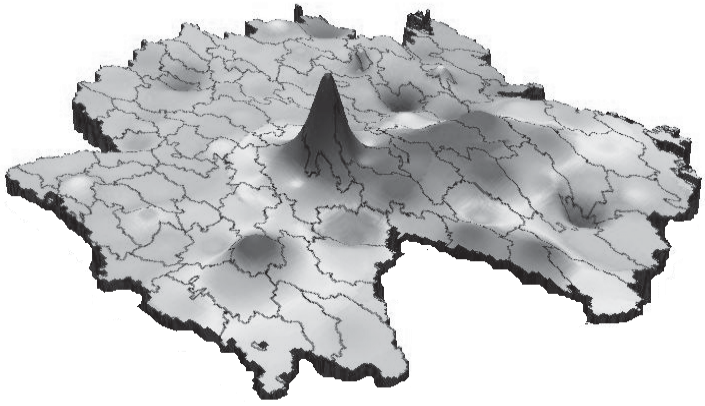
GDP per square kilometre



GDP per worker



GDP per capita annual growth



Note: GDP and GDP per worker data are for 2005, and the growth of GDP per capita is the annual average over 1995-2005.

Source: Own calculations using data from OECD (2008) Regional Database.

Figure 1.17. **3-D mapping of different economic indicators for regions in Mexico**

GDP per square kilometre

GDP per worker

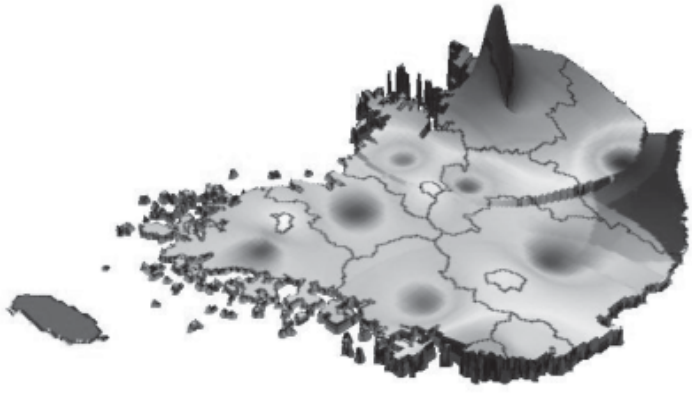
GDP per capita annual growth

Note: GDP and GDP per worker data are for 2005, and the growth of GDP per capita is the annual average over 1993-2004

Source: Own calculations using data from OECD (2008), Regional Database.

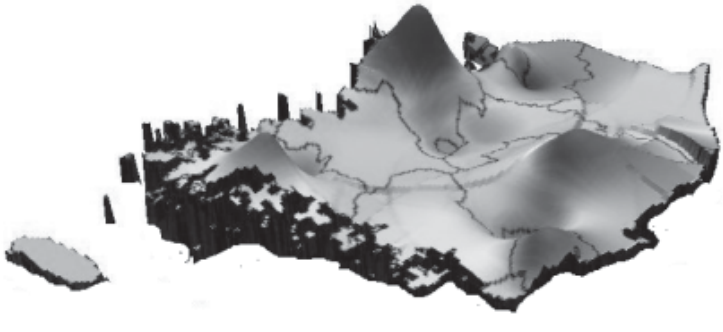
Figure 1.18. **3-D mapping of different economic indicators for regions in Korea**

GDP per square kilometre



GDP per worker

GDP per capita annual growth



Note: GDP and GDP per worker data are for 2005, and the growth of GDP per capita is the annual average over 1995-2005.

Source: Own calculations using data from OECD (2008) Regional Database.

In sum, there is no unique pattern of sustainable growth. Concentration of economic activity does not necessarily yield higher levels of productivity or higher growth rates. Opportunities for growth exist in all types of regions across the entire territory and will depend on how well the region is capable of mobilising its assets to make full use of its growth potential.

Why do some regions grow faster than others? Evidence from a regional growth model

Econometric analysis can shed some light on the factors that influence regional economic growth. The model used here explores the sources of regional growth using a variety of techniques (Box 1.2). As many of the variables of interest – institutions and systems – change very slowly over time, and often do not have easily quantifiable values, the particular analytic technique usually employed is a panel data approach. This approach requires a large number of observations for the econometric model to produce useful results, but has the advantage that the results can throw light on whether different growth factors are significant only in combination, or whether they are independently significant.

The first explanatory variable is included to test for convergence or divergence of regional income. A negative sign in this variable signals that relatively poorer regions are growing faster than the others, and therefore a process of convergence is under way. Conversely, a positive sign indicates that richer regions are growing faster and thus regional GDP is diverging. This convergence or divergence trend depends on a series of variables that determine growth. A number of variables have been introduced to model physical capital, human capital and innovation:

- Capital stock: uses a measure of infrastructure (motorways) because data at the regional level are not available.
- Human capital: educational attainment for primary schooling and for tertiary education.
- Innovation: patents and research and development (R&D) expenditures. Several variables that reflect expenditure in R&D were included, such as those carried out by the government, the private sector, higher education institutions, and non-profit organisations.

In addition to economic growth theory variables, employment rates were used as a proxy for the proper functioning of labour markets. Since data on all variables of interest are not available for all regions, several were estimated. The values and significance of the estimated coefficients are reported in Table 1.4.

Convergence is visible across OECD regions, but only when key assets and investments are in place. Using the full sample for the period 1995-2005, the model suggests that some convergence did take place across OECD regions, but that this depended on a series of factors.

Box 1.2. **Explanation of the regional growth model using a cross-section approach**

The model that is tested is:

$$\frac{1}{T}\ln\left(\frac{GPD_{t+T}}{GDP_t}\right)=\alpha+\beta_1\ln(InitialY_t)+\beta_2\ln(Infrast_t)+\beta_3\ln(PrimEdu_t)+\beta_4\ln(TertEdu_t)+$$
$$+\beta_5(EmplRate_t)+\beta_6\ln(Patents_t)+\beta_7\ln(R\&DTotal_t)+\beta_8\ln(R\&DBUS_t)+\beta_9\ln(R\&DGOV_t)$$
$$+\beta_{10}\ln(R\&DHE_t)+\beta_{11}\ln(AggAg_t)+\beta_{12}\ln(AggMan_t)+\beta_{13}\ln(AggFin_t)+\beta_{14}\ln(MktAccess_t)$$
$$+\beta_{15}\ln(DistMkts_t)+u_t$$

where t = 1995 and T=9, and annual average per capita GDP growth rates are regressed on:

- $Initial\ Y_t$ =initial GDP per capita
- $Infrast_t$ =motorway density defined by kilometres of motorway to population
- $Prim\ Edu_t$ =primary educational attainments
- $Tert\ Edu_t$ =tertiary educational attainments
- $Empl\ Rate_t$ =initial year employment rates
- $Patents_t$ =patent applications
- $R\ \&\ D\ Total_t$ =total research and development expenditures
- $R\ \&\ D\ BUS_t$ =research and development expenditures carried out by firms
- $R\ \&\ D\ GOV_t$ =research and development expenditures carried out by the government
- $R\ \&\ D\ HE_t$ =research and development expenditures carried out by higher education institutions
- $Agg\ Ag_t$ =agglomeration economies in agriculture defined by the size of the sector (*i.e.* employment in agriculture) multiplied by the index of specialisation (see endnote 3) in agriculture
- $Agg\ Man_t$ =agglomeration economies in agriculture defined by the size of the sector (*i.e.* employment in manufacturing) multiplied by the index of specialisation (see endnote 3) in manufacturing

Source: OECD (2009), *How Regions Grow: Trends and Analysis,* OECD Publishing, Paris.

Infrastructure is the foundation of regional development and has been the target of significant investment through regional policies over the past decades. However, at least in OECD economies, improvements in infrastructure do not lead automatically to higher growth; investment in infrastructure needs to be combined with improvements in

education and innovation (Models 6-7). One possible explanation for this is that investment in public infrastructure does not stimulate growth in the absence of workers with higher levels of education and innovation activity. This suggests that it could be productive to co-ordinate policies for building human capital, enhancing innovation and providing infrastructure.

Table 1.4. **OLS cross section results for regional economic growth in OECD TL2 regions, 1995-2005**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
Constant	0.0268	0.0013	0.1695	0.1553	0.1582	0.1934	0.193	0.3014	0.2972	0.104	-0.0126
	(2.65)**	(0.11)	(11.54)**	(9.06)**	(9.33)**	(6.44)**	(5.08)**	(6.27)**	(9.62)**	(1.46)	(-0.32)
Initial Y	-0.0006	0.0012	-0.0122	-0.0097	-0.0094	-0.015	-0.0152	-0.0261	-0.026	-0.0214	-0.0047
	(-0.59)	(0.95)	(-9.45)**	(-6.21)**	(-5.95)**	(-5.39)**	(-4.14)**	(-6.18)**	(-8.6)**	(-5.04)**	(-1.2)
Infrast	---	0.0075	---	0.0093	0.0132	0.0156	0.02	0.0155	0.0172	0.0148	0.0284
		(0.86)		(1.36)	(1.92)	(1.99)*	(2.31)*	(1.89)	(2.21)*	(1.89)	(3.23)**
Prim Edu	---	---	-0.0096	-0.0126	-0.0129	-0.0035	-0.004	-0.0075	-0.0079	-0.0091	---
			(-9.72)**	(-11.03)**	(-11.46)**	(-3.55)**	(-2.93)**	(-5.06)**	(-5.42)**	(-6.36)**	
Tert Edu	---	---	0.0076	0.0091	0.0097	---	---	0.0089	0.0087	0.0096	0.0067
			(8.79)**	(9.31)**	(9.81)**			(6.42)**	(6.83)**	(7.13)**	(4.58)**
Empl Rate	---	---	---	---	-0.0205	---	---	---	---	---	---
					(-2.37)**						
Patents	---	---	---	---	---	0.0015	---	---	---	---	---
						(2.5)**					
R&D Total	---	---	---	---	---	---	0.0019	-0.0007	---	-0.0009	---
							(1.71)	(-0.47)		(-0.6)	
R&D BUS	---	---	---	---	---	---	---	---	---	---	-0.0026
											(-2.3)*
R&D GOV	---	---	---	---	---	---	---	---	---	---	0.0028
											(2.98)**
R&D HE	---	---	---	---	---	---	---	---	---	---	-0.0078
											(-5.81)**
Agg Ag	---	---	---	---	---	---	---	-0.0014	-0.0009	-0.001	---
								(-2.04)*	(-1.41)	(-1.65)	
Agg Man	---	---	---	---	---	---	---	-0.0047	-0.0052	-0.0028	---
								(-2.89)**	(-3.62)**	(-1.77)	
Agg Fin	---	---	---	---	---	---	---	0.0029	0.0031	0.0014	0.0015
								(2.02)*	(2.32)*	(0.96)	(1.03)
Mkt Access	---	---	---	---	---	---	---	0.0002	0.0009	---	0.0013
								(0.39)	(1.75)		(2.19)*
Dist Mkts	---	---	---	---	---	---	---	---	---	0.0333	---
										(3.67)**	
R^2	0.0011	0.0082	0.2916	0.3235	0.3451	0.1652	0.1515	0.4712	0.4728	0.5111	0.4014
Adj R^2	-0.002	0.0019	0.2989	0.3134	0.3329	0.1505	0.1338	0.442	0.4493	0.4841	0.3717
F	0.35	1.29	40.93**	32.16**	28.24**	11.23**	8.57**	16.14**	20.17**	18.94**	13.5**
N	333	315	292	274	274	232	197	173	189	173	170

*/ Significant at the 95% confidence level; **/ Significant at the 99% confidence level

Countries missing as the model grows in variables due to lack of complete data (mainly on R&D expenditure): model 1- Iceland; model 2- Australia, New Zealand and Norway; model 3- Denmark, Iceland, Japan and Turkey; models 4 & 5- Australia, Denmark, Iceland, Japan, New Zealand, Norway, and Turkey; model 6- Australia, Denmark, Iceland, Japan, New Zealand, Norway, Switzerland and Turkey; model 7- Australia, Belgium, Denmark, Iceland, Ireland, Japan, Mexico, New Zealand, Norway, Sweden, Switzerland and Turkey; model 8, 9 & 10- Australia, Belgium Denmark, Germany, Iceland, Ireland, Japan, New Zealand, Mexico, Norway, Sweden, Switzerland and Turkey.

Note: For technical explanation of the differences between the models as well as additional models of growth see How Regions Grow: Trends and Analysis.

Source: OECD (2009), *How Regions Grow: Trends and Analysis*, OECD Publishing, Paris.

Human capital investment supports growth in all types of region, with particularly high returns for some levels of education and in some types of region. In terms of human capital, only the level of primary schooling is negatively associated with growth, while a high level of tertiary education improves regional performance. Thus, infrastructure provision along with tertiary education promotes growth. One possible explanation for the estimated negative relationship between growth and employment rates is that regions

with lower employment rates are not fully exploiting their labour resources and therefore have great untapped production possibilities. With appropriate policies, regional economies could tap into those dormant resources and achieve higher growth rates. In the longer term, however, the spur to growth of the more intensive use of labour resources will eventually cease once they are fully utilised. Thereafter, growth will have to come from other sources.

Innovation is clearly important and its influence would be clearer if more sensitive indicators (*e.g.*, on non-R&D driven innovation) were available. Innovation activity (to date measured by patents) has a positive impact on regional growth over a five and a ten year period (Model 6 in Table 1.4). Some factors are clearly more important than others in determining the innovation performance of a region. Policy makers need to know which "input" factors have the clearest impact on innovation and, in turn, where public investment will have the greatest impact. Our estimation of the knowledge production function for OECD regions suggests very large disparities in innovation outcomes and a spatially concentrated innovation map. In general the results confirm that:

- Human capital is the strongest determinant of innovation. There is a strong positive relationship between educational attainment at tertiary level and economic growth, measured in terms of patenting activity.
- Investing in R&D has a positive effect on patent activity in all categories considered: R&D expenditures by business, the public sector, higher education institutions and the private non-profit sector.
- The number of R&D personnel has a smaller impact on patenting than expenditures.
- The presence of knowledge-intensive services and high-tech manufacturing enhances regional innovation (measured as patent applications).
- The presence of economies of agglomeration only has a positive influence on innovation in the case of financial intermediation. Where there is no agglomeration economy, patenting activity is reduced.

In general, the results highlight the influence of the main theoretical factors that promote innovation – the usual list of "hard" inputs such as education, research investment and so on. The strength of the relationship confirms that it would be worth investing in these policy areas to achieve innovative, commercially viable products and processes. Although there are clear limitations to an approach that focuses on patents as a proxy for innovation output, the concentration of patenting and its links with other variables do suggest some spatial "logic" governing the distribution of innovation outcomes. Technology and innovation are fostered in favourable environments. These favourable environments certainly offer material advantages for innovators, whether they are on the scientific research or enterprise side. For example, the research confirms a close link between R&D expenditure and patenting activity. There is also a close link between the number of R&D personnel per thousand workers and patenting. These correlations are robust even after controlling for such things as industry sector. There is also a link between patenting and educational attainment, which suggests that levels of public investment in education and especially in science and engineering disciplines will promote innovation activity. The principal weakness of the approach, however, is that a sizeable minority of OECD regions have very low or approaching zero values for key indicators (such as R&D investment or patenting activity) and as such the analysis does

not provide clear orientations for them. More work is needed to improve the sensitivity of sub-national indicators in order to capture the breadth of innovation activities in firms that public policy seeks to target.

Box 1.3. **Summarising the results from the growth model and related analysis**

Additional econometric models using the OECD Regional Database (see OECD, 2009a) have looked at the evolution of regional economies from different angles and using different breakdowns of the available data. The results of this research can be summarised as follows:

- Human capital and innovation positively influence regional growth as endogenous growth theories suggest.
- Elements from new economic geography theories, such as agglomeration economies, are also relevant and reveal that there is a strong spatial content to growth.
- Infrastructure is a necessary but not sufficient condition for growth, but is only relevant if human capital and innovation are present.

The results suggest that in order to promote regional growth, policy makers should develop a comprehensive regional policy which not only links regions through infrastructure investments, but also fosters human capital, thereby facilitating innovation. The risk of a partial vision of regional policy is of creating a leaking, instead of a linking, process. A partial policy could provide only infrastructure, or lead to "brain-drain" if only human capital is promoted. Our models seem to bear this out.

The second type of analysis is based on dynamic econometric modeling through panel data analysis which allows for our spatial analysis to interact with time. The results of all these sets of models confirm the vast majority of results obtained in our cross-section models (OECD, 2009b). However, a deeper analysis reveals that:

- Infrastructure and human capital require three years to positively influence growth.
- Innovation is a longer-term process and only has a positive effect on regional growth after five years.

A third type of analysis is based on a knowledge production function that relates innovation input variables such as human capital and research and development (R&D) to innovation outcomes such as patenting activity (OECD, 2009b). The results show that:

- Human capital has a strong impact on regional growth both directly (see previous analysis) and indirectly through patenting.
- R&D is an indirect determinant of growth through its impact on patenting activity.
- Geographic space plays a role in determining innovation in these models as agglomeration economies emerge as a determinant.

The final analysis is dedicated to spatial econometrics, through which we find that the performance of neighbouring regions strongly determines the performance of any given region in the OECD (OECD, 2009b). This spatial aspect of growth also confirms that infrastructure and human capital drive economic expansion. These results suggest that as capital and talent concentrate they tend to positively influence growth in neighbouring regions – and *vice versa*. However, innovation remains a highly local element that does not necessarily influence growth in neighbouring regions.

Source: OECD (2009b), *How Regions Grow: Trends and Analysis,* OECD Publishing, Paris.

Conclusion

Regional development depends on the interplay between physical capital, human capital and the business environment. The results of the analysis show the benefits of strong interaction between different types of regional assets. Discerning which factors will result in regions becoming more productive and competitive is crucial for ensuring their future prosperity, attracting investment and retaining their best workers. Educational attainment is an important enabling factor. While public investment in infrastructure has a positive effect on regional growth, the effect is much stronger when educational attainment is high. As the determining factors of regional performance appear to be mutually reinforcing, this underlines the importance of a cross-sectoral approach to policy formulation and delivery. Our results also suggest that the effects of investment in human capital and on infrastructure typically take about three years to emerge.

A key rationale for a renewed regional policy is that simple concentration of resources in one place does not necessarily translate into agglomeration benefits. Such benefits depend on the existence of a pooled labour market, backward and forward linkages among firms, and knowledge spillovers. The key appears to be how assets are used, how different stakeholders interact and how synergies are exploited in different types of regions. This underlines the importance of integrated regional development policy strategies that cut across sectors and that are based on inclusive governance arrangements.

Notes

1. Tthe Gini Index is defined as

$$G = 1 + \frac{1}{N} - \frac{2}{mN^2}\sum_{i=1}^{N}(N - i + 1)\, y_i \qquad \text{(A.6)}$$

where regions are ranked in ascending order of y_i

2. Let y_i be the income (GDP) of region *i*, for *i* = 1,…,*N*, and *m* the arithmetic mean income. The Atkinson Index is:

$$A(c) = 1 - \frac{\left[\frac{1}{N}\sum_{i=1}^{N} y_i^{1-c}\right]^{\frac{1}{1-c}}}{m} \quad \text{for } c > 0 \text{ and } c \neq 1$$

$$A(1) = 1 - \frac{\frac{1}{N}\sum_{i=1}^{N}\log(y_i)}{m} \quad \text{for } c = 1$$

3. Let y_i be the income (GDP) of region i, for i = 1,…,N, and m the arithmetic mean income. The General Entropy is defined as

$$GE(c) = \frac{1}{c(1-c)}\left[\frac{1}{N}\sum_{i=1}^{N}\left(\frac{y_i}{m}\right)^c - 1\right] \quad \text{for } c \neq 0 \text{ and } c \neq 1$$

$$GE(1) = \frac{1}{N}\sum_{i=1}^{N}\frac{y_i}{m}\log\left(\frac{y_i}{m}\right) \quad \text{for } c = 1$$

$$GE(0) = \frac{1}{N}\sum_{i=1}^{N}\log\left(\frac{m}{y_i}\right) \quad \text{for } c = 0$$

4. This figure is obtained by regressing the log of GDP per capita relative to its national value to the log of employment rates relative to the national value for 92 TL2 regions for the year 2005. The estimated coefficient value is 0.283 with a t-value of 2.30 (*i.e.* statistically significant at a 90% confidence interval).

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Chapter 2

A More Effective Approach to Promoting Sustainable Regional Growth

Introduction and key policy messages

This chapter explores the current state of regional policies and highlights the key policy issues illustrated by examples of good practice from across the OECD. It discusses the evolution of regional policy in OECD countries and the "new paradigm". It then looks at the key components of regional policies: infrastructure, human capital development and measures to promote innovation. Finally, it discusses how the new approach to regional policy has influenced shifts in urban and rural development policy.

Key Policy Messages

- Regional policy has been evolving from short-term subsidies into a much broader family of longer-term development policies designed to enhance regional competitiveness.
- Equity and efficiency are not mutually exclusive objectives, and regional policy should aim to address both.
- Governments are increasingly realising that investing in the regional dimension of innovation is a crucial part of strategies to promote growth.
- There is no single policy formula to promote innovation in all regions, but more systematic policy analysis is required to understand which region-level instruments generate innovation and where.
- Despite economic and demographic challenges, rural regions are not synonymous with decline. New rural policy aims at valorising unused resources and opportunities while preserving the environment and adjusting to an ageing demographic structure. Innovative public service delivery plays a key role.
- City competitiveness is high on the policy agenda. Ensuring a clean and attractive urban environment is increasingly recognised as an integral aspect of creating dynamic cities rather than a mere offsetting of their undesired consequences.
- Sustainable growth and combating climate change are the key urban development challenges.

Regional policies have evolved significantly in recent years

It is widely believed that balanced growth can be achieved by promoting faster national economic growth, while automatic adjustment mechanisms ensure that the level of development across regions converges (a formulation of the Kuznets inverted U-curve). However, there does not seem to be any correlation between national growth and regional convergence. The evidence suggests that convergence occurs slowly, if at all. New economic geography models, by contrast, predict that in some cases the flows of investment and workers between regions reinforce rather than reduce concentration and therefore disparities. All of this has provided a challenging environment for regional policy over the past few decades.

Regional policy began in most OECD countries in the 1950s and 1960s, a period of relatively strong economic growth, fiscal expansion and low unemployment. The principal objectives of the measures introduced were greater equity and balanced growth in a period of rapid industrialisation. The main instruments used were wealth redistribution through financial transfers by the national government, accompanied by large-scale public investments. During the 1970s and early 1980s, successive economic shocks and changes in the global economy led to the emergence of geographical concentrations of unemployment in many countries and regional policy evolved rapidly to address this new challenge. The earlier focus on reducing disparities (in income, in infrastructure stock, etc.), was widened to include employment creation. The assumption was that public policy could alter supply conditions (essentially by changing production cost factors through production subsidies and incentives) and thereby influence industrial (re)location decisions for both existing firms and new investments.

Overall, the results were disappointing. Regional disparities were not significantly reduced, appearing as entrenched as ever in many countries despite significant public investment. At a regional level, there was only limited success in restructuring the economic base of the target areas. The case of inward investment illustrates the limitations of these regional policies. Many governments attempted to attract foreign direct investment (FDI) into target regions in order to create employment, but also on the assumption that spillovers would benefit local enterprises, increasing their technological and organisational capacity. However, experience suggests that in many cases the facilities brought into the region generate few productivity gains among local enterprises. Often, these branch plants are weakly integrated into the local economy with few links to local suppliers. Most foreign-owned subsidiaries show low levels of innovation and very few conduct R&D locally or link into local centres of innovation, preferring to retain their R&D in their main country of origin (*e.g.*, Pavitt and Patel, 1991).

In response to these poor results, regional policy continues to evolve from top-down, subsidy-based interventions designed to reduce regional disparities into a much broader "family" of policies designed to improve regional competitiveness. These can be characterised as follows:

- a development strategy covering a wide range of direct and indirect factors affecting the performance of local firms;
- a greater focus on endogenous assets rather than exogenous investments and transfers;
- an emphasis on opportunity rather than disadvantage;

- a collective/negotiated approach to governance involving national, regional and local government along with other stakeholders, with the central government taking a less dominant role.

The rationale of the new regional approach is based on the principle that opportunities for growth exist in the entire territory, across all types of regions, as documented in Chapter 1. The aim is to maximise national output by assisting and encouraging each individual region to reach their growth potential endogenously, thereby departing from the old view of regional polices as a zero sum game (see Table 2.1 below). Evidence of this so-called "paradigm shift" in regional policy can be seen in recent reforms of regional policy in a number of OECD countries.

Regional policy has become more central to policy making in OECD countries in recent years, after having been marginal for a long period of time. Over the past decade the future of regional policy has been subject to debate, formal review and/or new legislation and the introduction of regional development programmes in many OECD countries. Examples include Finland's Regional Development Acts (2002, 2007), regional growth agreements and a new regional governance architecture in Sweden, a new regional development law in Switzerland (2008), strengthening of the regional development agencies in Canada, development of regional plans and devolution of powers to regions in Italy, RDA-led regional strategies in England and specific strategies in Scotland, Wales and Northern Ireland, Peaks in the Delta in the Netherlands, EDA-led regional competitiveness programmes in the US, area agreements and regional partnerships in Australia and EU-sponsored regional development strategies for its members supported through the 2007-13 Structural Funds. In Japan, the Urban Renaissance Programme (Box 2.1) is a good illustration of the evolution of policy from top-down, infrastructure-driven projects focused on lagging regions towards more integrated and market-oriented approaches to solve national growth challenges. There is widespread evidence of new policy thinking and an identifiable shift in the paradigm of regional policy. The details of the change will be specific to the individual countries, but there are common features, as shown below (Table 2.1).

Table 2.1. **Old and new paradigms of regional policy**

	Old paradigm	New paradigm
Objectives	Compensating temporarily for location disadvantages of lagging regions	Tapping underutilised potential in all regions for enhancing regional competitiveness
Unit of intervention	Administrative units	Functional economic areas
Strategies	Sectoral approach	Integrated development projects
Tools	Subsidies and state aids	Mix of soft and hard capital (capital stock, labour market, business environment, social capital and networks)
Actors	Central government	Different levels of government

Source: OECD Territorial Reviews.

Box 2.1. **Private investment-led regional development: Japan's Urban Renaissance Programme**

After the so-called bubble economy burst in the early 1990s, Japan fell into a deep recession. Although Japan introduced a massive economic stimulus package of public investment, the economic slump set in and tax revenues needed to fund public investment fell sharply. For example, Japan's tax revenues (general account) were JPY 60.1 trillion in FY1990 but fell to JPY 43.3. trillion in FY2003.

To help jump start the economy, the Urban Renaissance Special Measures Law was enacted in 2002 to shift urban investment policy away from conventional, large-scale and direct public investment in rural or peripheral regions It was replaced with the promotion of private-sector real estate investment through public-sector incentives, notably deregulation, relaxation of land-use controls and faster approval procedures for projects. The aim was to move the focus of regional policy away from a top-down, lagging regions approach, to one that was more market oriented and that emphasised promoting growth where potential seemed highest.

An important aspect of the policy was its emphasis on integrating policies from different sectors. The Urban Renaissance policy covers not only urban development, but also a range of sectors including employment and industry with several central government agencies involved. For this reason, the Urban Renaissance Headquarters was established directly under the supervision of the Prime Minister, thus creating a strong, comprehensive government framework for promotion.

So far 65 districts have been designated as urban renaissance urgent development districts, and various projects are underway. In those districts, the value of private-sector investment is estimated at approximately JPY 12 trillion, with an estimated JPY 23 trillion in economic impact. For example, one of the biggest projects aims to bolster Tokyo's international finance hub in the Otemachi-Marunouchi-Yurakucho region of Tokyo. The construction and renovation of approximately 100 commercial and hotel buildings is under way.

Environmental sustainability has recently become a core focus of the programme. In another project, covering the Tokyo Mid-Town area, a new environmentally-conscious business and commercial facility was completed in March 2007 to demonstrate how technology could be used to make urban development compatible with ecological targets. It employs approximately 20,000 people and about 35 million people have visited during the first opening year (March 2007-February 2008).

Source: Toru Kurahashi, "*Regional Policy and Economic Downturn*," Presentation to OECD Workshop "Investing for Growth" held in Washington, January 15, 2009 and *OECD (2005), OECD Territorial Review of Japan; MLIT.*

Countries have moved to adopt this new paradigm for regional policy at different speeds. It represents one end of a continuum of approaches currently being used. To what extent have countries implemented policies and programmes in line with the new paradigm? The reform of regional policy, as with other economic structural reforms, has to achieve not only a short-term efficiency goal but above all has to increase the ability of economic actors to adapt to the turbulent global environment. However, policy reform encounters different forms of resistance, particularly collusive and rent-protecting behaviour. In a process of policy change, the losers are often more readily apparent than the winners. The policy prescriptions encompassed in the paradigm shift have different requirements whose implementation may be resisted. Moreover, even though regional policy objectives have evolved, there are criticisms that this evolution has not gone far

enough and/or that the continuing existence of support for specific regions is inefficient, even where this is not the primary target of the policy. Some recent studies criticise the provision of economic assistance to less developed regions. They argue that government expenditure in favour of lagging regions diminishes performance in the growth poles of an economy –assumed to be the wealthiest regions. However, where there are underused resources in lagging regions, mobilising them will contribute to both equity and national development objectives (Box 2.2). Chapter 1 showed that lagging regions generate an important part of national economic growth; where they underperform, national output suffers. As such, there are clear arguments in support of regional development, but these should be evaluated against other uses of public funds (notably the use of resources to support *individuals* rather than *places*).

Box 2.2. **The equity-efficiency trade-off**

Equity approaches aim to reduce financial disparities between people and places (where sub-national authorities are responsible for basic public services).

Efficiency approaches aim to foster growth in places that may already be relatively wealthy. They are based on the increasing acknowledgment of agglomeration effects.

In practice, equity and efficiency policies can be complementary:

- "Increasing returns to adoption" (positive externalities associated with a growing number of users) is a characteristic of knowledge economics. This is obvious in the case of network technologies. It is also the case with education since the larger the number of diploma holders, wherever they studied, the better the national innovation capacity. Similarly, the greater the number of people receiving health treatment, the better it is for the whole population. Thus equity in public spending can increase efficiency

- "Decreasing returns on investment": an excessive concentration in the allocation of public spending will meet limits in its ability to produce additional results. For example, in France, *Grandes Ecoles* students are few in number, but they receive far more public spending per student than for university students. The average results are lacklustre. Again, more equity in public spending can raise efficiency.

- "Dynamic perspective": investment in already wealthy regions with favourable growth potential can lead to extra wealth which can then be redistributed. Similarly, efficiency in public spending (either by limiting the cost of public policy for the same results, or by improving its outcomes) could increase resources available for the equity objective.

Source: OECD Territorial Reviews.

This new thinking in regional policy concerns not only the most developed countries, but developing countries as well. The challenge for non-OECD countries is often to manage rapid industrialisation and urbanisation through active regional intervention, but without repeating the mistakes made by some OECD countries in the period when there was an attempt to artificially redefine economic geography through major public investments. So, the new paradigm in regional policy – an emphasis on market mechanisms, endogenous growth and on collaboration across levels of government – has clear relevance for these countries. The challenge is in the implementation, both because of the scale of the challenges (*e.g.* in China, see Box 2.3) or the centralised nature of the administration (*e.g.* in Chile).

Box 2.3. **Regional development challenges and responses in China**

Between 2000 and 2007, China achieved an annual GDP growth rate of 10.3% which is significantly higher than the target of around 7.5% included in the 11th Five-Year Plan for the period 2006-10. The lower objective reflects partly the expectation in 2005 of a moderate fall of global economic growth, but also a new policy orientation which emphasised a sustainable and co-ordinated "scientific development concept" as well as social welfare and a more equal income distribution within a "harmonious society". The aim was a more balanced rural-urban and inter-regional development, responding to the fact that the development process has lead to increasing gaps between the coast and interior regions, and between rural and urban areas, which has triggered social tensions and conflicts.

The response of the Chinese policy makers to these regional development challenges includes the adoption of three broad regional strategies: the "Western Region Development" plan (initiated in 2000) including 12 provincial-level territories in western China, the "Revitalising Northeast China and Other Old Industrial Bases" plan (2003) mainly targeting three north-eastern provinces, and the "Rise of the Central Region" plan (2006) concerning six central provinces behind the coastline areas. These broad regional programmes have led to adjustments in fiscal transfers from the central government and to special programmes or investments managed by the centre. In addition, in 2006 the government adopted a programme targeting rural areas and listed "Building a New Socialist Countryside" as a priority in the 11th Five-Year Plan. This strategy includes measures aiming at agricultural productivity, land use, rural residents' income, local governance reforms and the delivery of rural public services (health care, social security, education, financial services etc.) and infrastructure. Other initiatives have been introduced, such as the regional planning exercises developed for the Yangzi river delta, the Pearl River delta, the Jing-Jin-Ji area (Beijing, Tianjin, Hebei) and the Chongqing-Chengdu corridor, and more generally China's urbanisation strategy.

Indeed, urbanisation has remained a mighty force behind China's economic growth, with 132 million rural migrant workers leaving their homes in 2006 (71% of them to urban areas), distorting the demographic composition of rural areas, but also having positive impacts on rural income, consumption and investments. Regional development programmes risk being affected by multi-level governance problems as the division of responsibilities across levels of government is not always clearly defined. Moreover, in spite of increased transfer payments, gaps between expenditure and financial resources of sub-national levels of government are rising. Governance dysfunctions particularly at sub-national levels of government negatively affect the regional development dynamics and risk making the implementation of effective policies more difficult.

Source: OECD (2009), *Rural Policy Reviews: China* and GOV/TDPC(2007)14, OECD Publishing, Paris.

Enhancing the impact of regional development policies is complicated because the factors that determine the competitiveness of each region are so diverse. Nonetheless, the OECD national territorial and region-level policy reviews, in line with the analysis in the previous chapter, suggest that despite the broad range of potential attributes that affect the competitiveness of a region, a small number of common success factors appear repeatedly. These can be grouped under three broad policy areas:

- **The capital stock dimension:** essentially the level of past and present investment in a region's infrastructure. In OECD countries this has tended to mean transport infrastructure, while in less developed countries it also implies infrastructure for basic needs. More recently, ICT infrastructure has become a key target.

- **The labour market dimension:** this includes policies relating to both the labour market – for example, (dis)incentives for labour mobility and participation in the labour market – and human capital development.
- **The business environment dimension:** this covers a range of policies designed to support firms, such as cluster policies, policies to promote links between research and industry, and, in particular, promotion of innovation in regions.

The assumption of the new regional policy paradigm is that the implementation of regional development policies involves the integration of these core policy areas. The emphasis on the quality of the local environment for business leads directly to the question of the quality of locally provided services and public goods. Firms, especially SMEs, are dependent on the environment in which they are located to provide them with different types of "local collective competition goods". This involves the participation of various categories of actors (public authorities at local, regional and central levels, private firms or nonprofit organisations etc.) to ensure that the provision is appropriate, relevant, high quality etc. For example, regional innovation systems are based on relations between industry and universities, between small and large enterprises, and between sectors (*e.g.* training and employment).

In terms of policy implementation, OECD work has also highlighted the important place of both urban and rural policies within the regional policy "family" and the evolution of policy thinking in both domains. At its most general, this means a distinction between rural and urban policy. Increasingly, however, within both rural and urban policy areas, policies vary according to the specific nature and needs of individual regions. For example, urban policies distinguish between large metro regions and smaller urban centres or cities in industrial transition; rural policies distinguish between lagging and dynamic remote regions and urban fringe or well-connected rural regions. Given that many administrative regions include both urban and rural areas, the issue of urban-rural linkages and complementarities is also crucial.

Thus, the framework for regional policy can be seen from two complementary perspectives: a range of old and new policy tools (infrastructure, innovation, etc.) and policies adapted to specific region types (urban, intermediate or rural). The following sections explore the evolution of policy in these different fields and highlight some principal OECD findings.

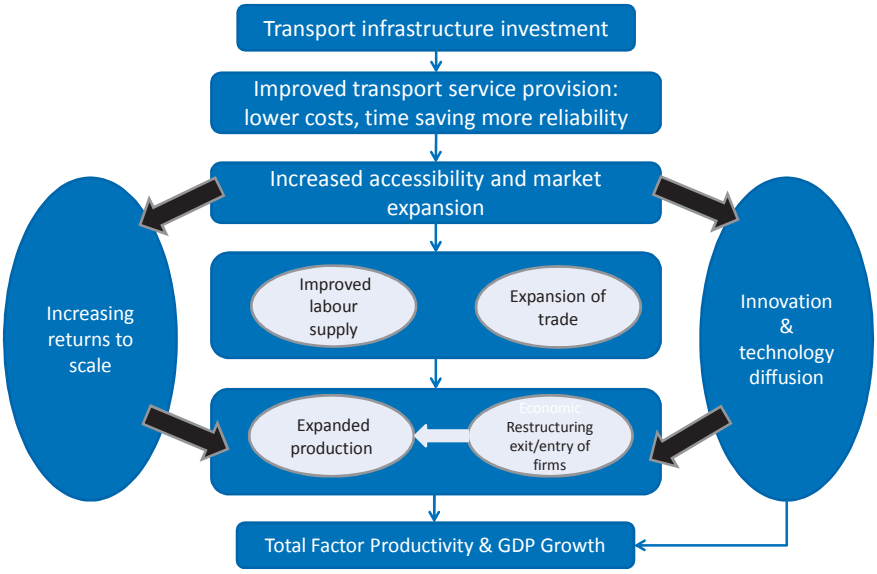
Investment in infrastructure is still prominent, but is now more integrated

Investment in physical capital has always played a prominent role in regional policy. Many national government policies have tried to reduce disparities by reducing travelling times from the target region to other regions and by eliminating gaps in telecommunications networks. Recent examples of this approach include Mexico's Plan-Puebla-Panama or the EU-TEN transport corridor programme. The expectation that improvements in physical infrastructure will generate productivity gains for local businesses and increase the attractiveness of an area for investment has been a recurring theme in OECD reviews. High quality infrastructure and services are accepted as being vital to a strong economy - locally, regionally and nationally (Figure 2.1). To take the example of transport, upgrading infrastructure changes access (travel times) which, in turn affects property prices and economic rents, influences decisions of households (residential location, patterns of consumption) and firms (production location, access to markets and investment decisions) and these, in turn, should have a net positive impact on

the economy, increase tax revenues, create employment and generate resources for further investment. For business, the benefits could include:

- Access to a wider labour market pool, with more diverse skills;
- Faster access to suppliers and customers, reducing transaction costs;
- Expanded market reach, including suppliers, as well as customers;
- Reduction of land use constraints.

Figure 2.1. **Transport infrastructure investment and economic growth effects**



Source: Adapted from Larkshmanan, (2002).

For example, the case of the Czech Republic (OECD 2004) demonstrates the importance of adequate domestic and international road and rail connections as a means to improve the competitiveness of large parts of the country. It highlights the accessibility issues for Ostrava, third city in the country, which is still not connected to the rest of the highway network thus stifling the development efforts of an industrial area undergoing deep restructuring and experiencing high unemployment. Poor accessibility prevents Ostrava, and more generally the region of Moravia-Silesia, from attracting a more sizeable share of FDI in spite of its assets (human capital, excellent university and research centres) and strong financial and other incentives for investors.

Similarly, in Poland a main focus of regional policy since 2004 has been road development (expressways, motorways, national roads). Major EU transport infrastructure investments have concentrated on Poland because it is crossed by four out of the ten pan-European transport corridors. One of Poland's critical priorities is to create an effective network of motorways connecting the country's major urban centres and connecting these with the Trans-European Transport Networks and to improve road-bearing capacity and quality. The focus on roads has continued in the 2007-13 regional development strategy: 51.7% of total funds for the infrastructure programme (including co-financing) are allocated to road development (EUR 11.2 billion from EU funds and EUR 1.98 billion from national funds), while 21% is for rail transport and 13% for urban transport. In the regional programmes, 26% of the funding goes to transport (EUR 4.4 billion out of a total of EUR 16.6 billion), (OECD, 2008a). However, the review also notes the efforts of the Polish national and regional authorities to adopt a balanced policy mix for regional development, focusing on transport, but also human capital and innovation and to maximise the economic multiplier from the huge infrastructure investment through integration with other policies (Box 2.4).

The OECD reviews and the analysis presented earlier suggest that the construction or upgrading of transportation infrastructure can have a positive influence on a region's economic development, but that economic growth is not automatic. Growth effects are likely to appear only when positive externalities exist in the region. Faster transport connections can exploit potential positive externalities that exist in various markets – typically unexhausted economies of scale, scope, agglomeration, density or network – and consequently improve (labour) productivity, enhance output, reduce production costs and promote more efficient use of resources. If such latent economies do not exist, however, improvements in accessibility could lead to changes in existing transport flows and spatial patterns without having long-term effects on growth.

The case of the Öresund region (OECD, 2003) underlines that the bridge between Copenhagen and Malmö is only one element in a wider strategy to build on the complementarities that have developed between the two regional economies (see Box 2.5). The challenge for policy makers explicit in the recommendations is to ensure that the potential in the labour market, research community and enterprise systems is realised. The review of Vienna-Bratislava provides a similar example: providing infrastructure to link the two centres will not necessarily generate sustainable growth unless policy challenges relating to economic specialisation, innovation and governance can be resolved.

If regional policy concentrates only on providing capital in the form of infrastructure, a lagging region may end up losing economic resources (the "leaking by linking" phenomenon). By reducing inter-regional transport costs, firms continue to find it cheaper to concentrate in the core regions, reap the benefits of agglomeration economies and thick markets and ship the goods to the periphery. For example, improved motorways in eastern Poland will enable goods to reach foreign markets faster and at lower cost, but competition from other parts of Europe will also increase for local firms (OECD, 2008a).

This raises the issue related to agglomeration often termed "the privatisation of benefits and the socialisation of costs". It refers to the fact that cities can continue to grow to a point at which they generate net costs for the society as a whole (pollution, congestion, crime etc.) while they continue to generate benefits for (some) firms. Thus the process of concentration continues with society paying an increasingly high price.

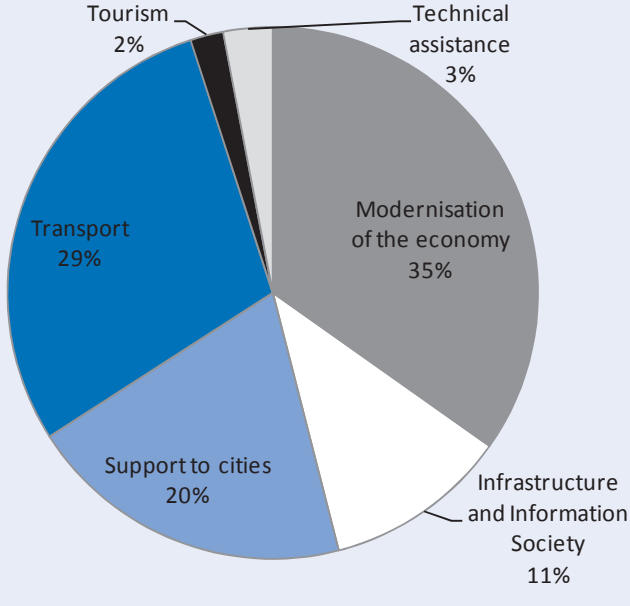
Box 2.4. **Integrating infrastructure investment: Eastern Poland development programme (2007-13)**

The development of Poland's eastern regions, the poorest in the European Union in terms of GDP per head until the accession of Romania and Bulgaria, is a major policy objective of Poland and the European Commission. The five eastern regions situated along Poland's eastern and northern borders are the smallest contributors to GDP (less than 3% each) and have the lowest growth rates in Poland.

A macro-regional programme targeting the development of the five eastern regions has been developed with the EU funds for 2007-13, co-financed with national funds. An additional budget of EUR 2.2 billion has been allocated by the European Commission for Poland for this purpose. This is the first macro-regional programme of this type in the European Union. Previously, several programmes had been implemented for eastern regions, but they targeted specific regions or locations rather than the macro-region as a whole. The macro-regional programme is an opportunity for eastern regions, not only in terms of additional funding, but also in terms of co-operation and connections among the five regions, to address underused potential (such as environmental assets and tourism), develop transport networks within the area, and elaborate a common strategy for cross-border co-operation. The added value of the programme lies precisely in its macro-regional dimension, as it is a way to go beyond the administrative borders of voivodships (regions).

The Eastern Poland operational programme is managed by the central government (Ministry of Regional Development). It aims to enhance the attractiveness of eastern regions, strengthen the metropolitan functions of cities and improve the quality of transport infrastructures. The programme has a well-balanced strategy, with six priorities (modernisation of the economy, infrastructure and information society, transport infrastructure, support to cities, tourism and technical assistance) and aims to integrate various sector policies in a regional perspective. However, there are challenges: the insufficient cross-regional common vision of the various pillars; and the limited involvement of local actors in the design of the programme.

Development of eastern Poland: allocation of funds 2007-13 (total: EUR 2.2 billion).



Source: OECD (2008), *OECD Territorial Review of Poland*, OECD Publishing, Paris.

Box 2.5. **Impacts of the Öresund bridge on attractiveness and competitiveness**

Three levels of impact should be considered: the regional level, the national level and the international level. At each level, the effects are different and, more importantly, the reactions of stakeholders are quite diverse.

At the regional level (Öresund), the new infrastructure links – in addition to the bridge – have framed a new internal network of mobility and communication which has increased interactions between people, firms and institutions. Such interactions increase the "value" of internal inter-dependence as a factor of robustness of the local economy and society in terms of competitiveness and attractiveness. The main feature of this evaluation is identifiable in the strengthening of the two main poles, Copenhagen and Malmö, but that growth has also affected a many other areas within the region. Thus, on both sides of the strait, the spatial "continuity" between the cores and their hinterlands causes fewer problems today than in the past.

At the national level, he competitive role of the Öresund Region has also affected its relative position within the two countries. This is a relatively minor issue for Denmark, where Copenhagen, as national capital and already a main pole of attraction in the Öresund Region, saw its role gain in importance. However, in Sweden, the growth of the Öresund Region will inevitably have a more significant impact. Stockholm and Gothenburg in particular have felt the impact of the growth in the Öresund region and are reacting to its increased competitiveness. On the one hand, the strengthening of the position of Malmö and Skania has led to a new development area in Sweden, increasing the overall output of the country. On the other hand, the acceleration of growth in southern Sweden has upset traditional political thinking on regional policy in the country. Due to its marginality, the north had always been in a privileged position when it came to the allocation of regional subsidies, in comparison with the central part of Sweden (along the Stockholm-Gothenburg axis), which was self-sufficient, and the south, which, despite the industrial decline in Malmö, had always been considered as developed and not in need of intervention. The opportunity represented by the growth of the Öresund Region has brought about a change in this approach. The tendency to favour equality rather than supporting dynamism is slowly reversing and, as a result, greater attention is being paid to the southern part of Sweden (also because this area of the country is the link with the rest of Europe).

Source: OECD (2003), *OECD Territorial Review of Öresund*, OECD Publishing, Paris.

Whether transport infrastructure becomes a link or a leak depends on a broader strategy - regional policy - that takes into account labour and business dimensions. Infrastructure provision is a response to a market failure: private agents under-providing or not providing infrastructure. The type of infrastructure thus depends on the nature of the market failure. If the infrastructure is a natural monopoly, the private sector will provide it at a lower quantity and at a higher price than the social optimum. There are many channels through which infrastructure can have an impact on growth. Besides new markets and increased competition, it can facilitate the division of labour and therefore specialisation, assist in the diffusion of technology, and complete value chains with intermediate inputs in other regions. This further underscores the idea that transport infrastructure needs to be associated with human capital and innovation (more broadly the business environment) for it to have an impact on growth.

Furthermore, constraints on infrastructure development are growing. In particular, the cost of developing new infrastructure has increased dramatically, while maintenance represents a significant share of total infrastructure spending in OECD countries. In Japan, for example, projections regarding the proportion of total investment that will need to be spent on maintenance suggest that in the relatively near term, expenditures on renewal of infrastructure will equal expenditures on new facilities. Assuming limited increases in total spending, Japan's maintenance budget is likely to overtake the budget for new construction in the next decade (OECD, 2005a). As a consequence, infrastructure investment policies in the OECD tend to emphasise three aspects: better use of existing infrastructure, better targeting of new investment, and mechanisms to increase the level of private-sector financing in public projects.

Investing in and retaining human capital, without restricting mobility

According to the regional growth model described in Chapter 1, human capital is even more important than infrastructure as a determinant of regional performance, both as an advantage for regions with a highly educated workforce and as a competitive disadvantage in regions with low educational attainment. Evidence derived from the econometric analysis shows that human capital plays a significant role in enhancing regional growth. This implies that regions where unskilled labour is relatively abundant are likely to be disproportionately affected by skill-biased technological change and *vice-versa*.

The analysis in the previous chapter showed that in general lagging regions have substantial reserves of un-mobilised labour, indicated by high unemployment rates and low participation rates. Their labour markets function sub-optimally over long periods of time without obvious adjustment in terms of either wage rates or out-migration. Hence, there is a structural problem with labour markets in a large number of regions. If the potential supply of labour is chronically higher than the average demand, this suggests that the price of labour is too high, or (what amounts to the same thing) that the human capital and skill sets of all those who would be willing to work is too low at the margin to interest potential employers. Moreover, even where incentives for individuals to move to regions with higher demand exist, they do not do so, or not in large enough numbers.

The policy implications are twofold. The first concerns the room for manoeuvre for labour markets to adapt to local conditions. Despite reforms over the past decade in many OECD countries, there remain major barriers to flexible labour market operations. Some level of constraint on the totally free workings of the labour market can easily be justified on social grounds, as well as on grounds of market failure and information asymmetries. Overall, however, the experience gained in the course of the OECD Jobs Study and its follow-ups shows that more flexible labour markets reduce unemployment and create jobs. Employers are more willing to hire, employees fear unemployment less because they are confident of getting another job, and more people at the margins of the labour market gain job experience that makes them more attractive to potential employers. Hence part of the solution for mobilising regional labour reserves in some countries must include reforms of national labour market legislation to make inactivity less attractive, and agreements that allow wages to more accurately reflect regional (and enterprise) conditions.

Recent challenges brought by pressures of population ageing,[1] changes in technological advances, globalisation and integration of the labour intensive countries have changed the policy priorities from cutting high and persistent unemployment to removing barriers to labour market participation. The main objective of reform in the restated OECD Jobs Strategy (Box 2.6) is to raise employment by reducing unemployment but also by allowing people to move from inactivity into work. Labour productivity can suffer from pro-employment policies in the short run through a composition effect as low-skilled workers enter the labour force. However, in the long run, when reforms to reduce impediments to labour market participation, and to remove demand-side barriers are supplemented with policies to improve the skills and competences of the workforce, labour productivity will increase. The restated OECD Jobs Strategy is an integrated policy which combines labour market and human capital development policies. Regional polices can assist horizontal co-ordination through multi-level governance mechanisms.

Labour is neither fully fixed nor fully mobile because there are systemic and personal barriers to migration.[2] Standard neo-classical theory treats labour as mobile and in many theories capital is considered to be fixed. In reality, both factors are quasi-fixed in the short term, and in the long run it is not clear whether mobility is fully achieved in either case. Economic intuition says that labour responds to wage differentials among regions. In the US, traditionally the exemplar of high labour flexibility, labour mobility is positively associated with unemployment rates, implying that American workers respond to job opportunities elsewhere by moving, though even here mobility is sticky. In most other countries, labour mobility is relatively low and represents a very imperfect adjustor to changes in the labour market. The conclusion is that strengthening regional labour markets will normally be a more successful policy option than encouraging people to move.

The second policy implication is that policies should address educational attainment and skills orientation in poorly performing regions. Investing in human capital is a key element of public investment for regional development. For a long time it has been neglected in regional policies in favour of investment in hard infrastructure. Now the situation has changed radically, with human capital development being a core component of spending within regional strategies. For example, in line with the Lisbon Strategy objectives, EU structural funds in Poland are being channelled towards improving human capital (education attainment and quality of education) through the Human Capital Operational Programme that accounts for 14% of the funding (OECD, *2008a*). Similarly, the EU has approved Portugal's National Strategic Reference Framework which enables the country to allocate almost 30% of EU structural funds to human capital development (OECD, 2007a*)*. Chile is another country that has made generalising access to quality education a national priority, including efforts to ensure that municipalities with limited fiscal resources are also able to improve educational provision (Box 2.7).

Box 2.6. **The restated OECD jobs strategy**

The sharp rise in unemployment rates in many European countries during the early 1980s presented a clear policy challenge to cut the high and persistent rates of unemployment. Initiatives such as the OECD Jobs Strategy in 1994 responded to this need with a list of ten policy recommendations.

Fourteen years later the external conditions and trends in labour markets have evolved, and although rates of unemployment still remain high in several countries, labour market conditions face new challenges mainly the ageing population, changes in technological advances, globalisation and the integration of the labour intensive countries. The restated OECD Jobs Strategy proposes four main lines of actions or pillars to meet these new challenges.

1. Macroeconomic policies must ensure price stability and the sustainability of public finances. The stability of the macroeconomic framework must make it possible for reforms to produce their effects in terms of job creation as quickly as possible, while at the same time reducing the risks of permanent falls in employment in the event of recession.

2. The participation in the labour market of the least represented groups should be promoted. To do this, it is essential to reform the rules on payroll taxes and welfare benefits. To be attractive, work must pay. Unemployment benefit systems and active labour market policies must also facilitate and support the quest for jobs, and lastly policies must be adopted to help the work/family-life balance, by providing for child-care services.

3. The regulations on labour markets and markets in goods and services should be reformed, since this plays an important role in creating jobs and mobility. Reforms in this area have proved difficult since they are often perceived by workers as a threat to job security.

4. There should be investment in human capital, concentrating on promoting education systems which, as well as providing basic schooling, should also encourage close links between education and work. Such systems facilitate the transition between school and working life, and reduce youth unemployment. The most highly-educated workers have the best employment prospects. Lifelong learning does not just promote growth and employment alone; it is also a factor for social progress.

The restated Jobs Strategy must be adapted to different national social preferences since there is no one path for reform: some successful countries, such as the United States, combine low welfare benefits and payroll taxes with fairly light job security legislation whereas others, such as Denmark and the Netherlands, offer generous welfare benefits while at the same time imposing strict obligations on job-seekers to actively look for work. In these countries, employment levels are high and income disparities low, but the budgetary costs involved are considerable.

Source: OECD (2006), Boosting Jobs and Incomes: Policy Lessons from Reassessing the OECD Jobs Strategy. OECD Publishing, Paris.

Often, however, the regional development dimension of educational provision has to address the concern that, by diffusing provision widely across the territory, quality is reduced and costs increase. If policy objectives are geared towards providing equitable access, the system will find difficulties in replicating quality training everywhere. In

addition, an equity-oriented system may run the risk of improving human capital in less-favoured regions only to see a brain drain towards more successful ones. In contrast, the result of a system oriented towards elite systems is likely to directly favour core regions. One possible solution to the problem is to set up a system that, as well as beingboth equitable and qualitatively sound, also includes part of the population that is highly attached to their regions of origin. Adult learners usually have links to a specific locality, and are therefore are less mobile than younger students. Upgrading their skills will thus have a more direct effect on the region's economic performance. Programmes should be flexible enough to spur on-the-job learning such as in the French *Conventions CIFRE* or the British *Knowledge Transfer Partnership*, e-learning and distance-learning frameworks, in order to accommodate non-traditional learners, those who combine work and study, and the needs of the employers.

Box 2.7. **Generalising access to education in Chile**

The economic value of ensuring good access to quality education at all levels for all citizens has been recognised by the government of Chile, which has made improving Chile's human capital a priority in its efforts to encourage growth in the medium and long term. The section of Chile's population aged between 25-64 had, on average, benefited from less than ten years of schooling in 2002, compared with the OECD average of nearly 12. In addition, the quality of education in Chile is below OECD standards according to PISA international standardised tests. Tertiary education rates also remain below the OECD average. Overall income and territorial inequalities are closely tied to inequalities in access to education. Those in the top quintile of income earners have close to five more years of education than those in the bottom quintile. At the same time, standardised tests of education performance results for primary and secondary education) reveal that students from the poorest families perform worse than those from families with higher incomes. Close to 70% of the poorest students attend municipal schools which challenges the capacity of municipalities to provide adequate primary and secondary education, one of their main devolved responsibilities. Moreover, reasonably qualified students from low and middle income backgrounds who could be successful in university have restricted access to higher education because of financial barriers to entry (OECD, 2004).

Source: OECD (2009), *OECD Territorial Review of Chile*. OECD Publishing, Paris.

The key question for regions is to find policies that can encourage, retain and attract human capital despite strong competition for increasingly mobile skilled workers. It is unavoidable, however, that movement from one region to another will dilute the direct impact of educational investment or job creation within the region making the investment. These movements can be quite large, and, where they favour core regions, can also sometimes run counter to policy aims such as that of reducing concentration or diffusing economic activity more widely.

New forms of innovation emphasise proximity, in spite of globalisation

If the regional business environment is not dynamic and innovative, the economic benefits from investment in infrastructure and human capital are unlikely to accrue to the target region: infrastructure will promote leaking and trained individuals will move to where more dynamic businesses are located. Therefore, a third dimension is crucial for an effective regional policy. Regional policy has always had an objective of promoting

private sector activity. In the past this has often been focused on bringing in FDI and providing subsidised facilities for investors and/or new firms. More recently, the focus has moved to making domestic firms more competitive, and this led to interest in cluster policies and similar instruments to build co-operation and exchange among firms, particularly SMEs. The focus has now shifted towards innovation, with the emergence of specifically regional innovation policies.

The importance of innovation as a fundamental cause of growth has long been recognised, and is currently an important theme in the work of the OECD. Its role in regional performance is now also becoming clear and the growth model presented in Chapter 1 shows how innovation positively influences regional growth rates. The current economic recession has amplified the importance of innovation in economic growth. Policy responses by OECD countries are seeking to achieve a so-called "double dividend", both restoring short-term growth and reforming economic structures. Strengthening the innovation capacity of firms is seen as one area where public investment can achieve this dual objective. Hence, increased investment in R&D and technology development are components of economic recovery packages. Politicians around the world have emphasised that the way to recovery is via more innovation in both the private and public sectors.

Increased interest in innovation, and more specifically its regional dimension, is also spurred by recognition that some places appear to be more effective in the way they use innovation-related assets and investments than others. Many of the leading firms in "new economy" industries – those driven by rapid innovation in products, processes and commercialisation – have emerged in a limited number of regions. Such regions appear to provide more conducive environments for business innovation. Much of the effort of policy makers in other regions aims to replicate or nurture the positive environmental conditions that the best-performing regions offer.

Two policy considerations appear to drive the current interest in regional innovation:

- Generating dynamic innovation in regions is crucial for achieving national innovation policy objectives.
- Improved innovation can contribute to improving the overall economic competitiveness of individual regions.

With innovation high on the policy agenda, interest centres on the main factors that propel innovation. It is accepted that innovation is a market-driven process and that firms need to be assured that they will be able to reap the fruits of their innovations. The main question is how inputs into the process are transformed into successful innovation and why some places seem to do this better than others. The fact that some regions appear to be more innovative than others contradicts assertions that globalisation reduces the importance of distance in business, as firms can access the inputs and knowledge that they need from anywhere across the globe. Over the last few years, many of the leading firms in "new economy" industries - those driven by rapid innovation in products, processes and commercialisation - have emerged in the same few locations across the world. This contradicts the hypothesis that many of the drivers of economic change (particularly globalisation and technological advances) are "flattening" the world economy.

While successful innovative city-regions such as San Diego, Boston, Stockholm or Eindhoven generate more than 400 patents per million inhabitants annually, other large cities produce less than half that number. More than one-third of OECD regions generate

less than ten patents per million inhabitants per year. As shown in Table 2.2., these regions tend to invest less in R&D as a percentage of regional GDP, their firms engage less in R&D, and they have lower shares of total employment in high technology sectors. This suggests a challenge for public policy: how to design and target innovation policy to make it relevant and effective in different contexts, particularly those for which R&D and patented innovation represent a negligible part of the innovation activity of firms located there.

Table 2.2. **Correlations between patenting and other indicators of innovation**

Patents per million, class	Number of regions in class	As % of all regions	Of which, % of the regions that are rural regions	Average expenditure on R&D as % of GDP	Average employment in high technology sectors
0-10	112	33.43	46.43	0.57	23.26
10-50	52	15.52	44.23	1.57	28.52
50-250	85	25.37	41.18	1.63	37.50
250 +	86	25.67	18.60	2.41	43.24

Source: OECD Regional Database.

However, even using measures of research-based innovation such as patents, it is clear that location is not a permanent factor in innovation performance. Overall, patterns of innovation performance change slowly, but some regions have shown strong improvements in recent years. There are clear examples of regions that have progressed from moderate to high performance on indicators of research-driven innovation (*e.g.* Catalonia, the Basque Country, and Florida). And there are examples of regions that were formerly weakly involved in these activities becoming more integrated into knowledge- and research-intensive activities (*e.g.* Andalusia and Galicia in Spain, several regions in Eastern Europe). In contrast, some of the leading regions, particularly in the US and Scandinavia, have seen their position decline in relative terms. Again, even with the most recent relative shift of innovation-related investment to specific regions in Asia (*e.g.* some regions in India and China), there are notable exceptions to this trend, with some OECD regions making strong efforts to improve the level of investment and/or seeing improved outcomes from their innovation effort.

What should regional innovation support be and what it should aim to achieve? First, it is not an end in itself. Its success should be judged on how well it performs in addressing the challenges faced by firms and by society in general. It should be more than just a buzzword, being more ambitious than just an aggregation of technical business support measures. Rather, it should be a broad vision that permeates a wide range of public and private sector activities. And it should lead to a clear investment strategy for the public sector that also encourages investment by the private sector. Finally it should help to channel creativity towards objectives that increase wealth and well being. These principles – broad though they are – nonetheless suggest a new type of public policy.

The OECD, among others, acknowledges a need for considering innovation in a broader sense, beyond the linear, science-based approach. The OECD suggest three ways of thinking about this broader approach to innovation (DSTI/STP/TIP(2009)6):

- *The output-based approach.* This approach looks at the results of innovation. This includes the type of type of innovation (technological – process and product; and non technological – organisational and marketing, as defined by the Oslo Manual) and the relationship between them.

- *The behaviour-based approach (new collaborative arrangements for innovation).* This strand of thinking identifies new forms of innovation according to the new ways of organising the process of innovation. The focus is on the ways in which innovation agents interact and change behaviour to innovate.
- *The challenge-driven approach (innovation to address social challenges).* This approach considers innovation by its objectives, in particular to address specific challenges be they social, community-based or global. It starts from the recognition that contemporary societies are undergoing a shift in production and consumption priorities pushed by issues such as climate change, the sustainability of production, persistent inequality and poverty to name a few.

Although policies and research have tended to focus on innovation in research hubs and success stories, there has been an increase in interest on promoting innovation in areas that are not core R&D centres. In 1994, Finland introduced a specific urban policy to foster innovation and growth of its eight largest city-regions (excluding Helsinki). The programme was initially called the Centre of Expertise programme (CoE), and reshaped under the name Regional Centres Programmes (RCP) in 2001. This was a regional policy with the objective of balanced territorial development, but there was a clear recognition that a certain degree of concentration is needed to reach a minimum critical mass as it includes as a main objective for the allocation of funds more collaboration (and thus economic integration) between a core city and its neighbouring municipalities (OECD, 2005b).

A key policy debate arising from this is whether it is better to concentrate resources in leading regions or to use innovation resources to trigger catch-up outside the leading regions. The arguments in favour of the former tend to emphasise efficiency and higher returns from research excellence; the counter arguments emphasise regional development and/or tapping into new ideas and innovative research. As interest in regional innovation hubs increases, it seems likely that more effort will be made to harness research capacity outside traditional research centres. Either way, if research funding is concentrated, then the mechanism by which innovations and technologies are diffused across the economy becomes crucial. Many countries have technology transfer programmes designed to bridge across industries and between regions. For example, most countries have programmes to disseminate research relevant for farmers (such as biotechnology), mainly developed in cities, out to the rural world.

Why do some places seem to transform inputs in the innovation process into successful innovation better than others? The ability of and incentives for firms to innovate are linked to a wide range of national factors, such as legislative and macroeconomic settings (IPR and patent law, taxation, corporate governance, exchange rates, tariffs, competition etc.). But innovation is strongly influenced by regional factors (or the ability of firms to access these factors from outside the region). These factors are physical and human, individual and collective, and found in both public and private spheres. Innovation depends on the *scientific capacity* of actors and institutions (their understanding of existing knowledge and concepts, their openness to new knowledge and ability to assimilate it etc.). But the *technological capacity* of actors (their ability to perceive the usefulness of knowledge and how to apply it) is also important. And finally, *industrial capacity* plays a role (the capacity of actors to transform concepts and ideas into useful, commercially viable products).

Box 2.8. Can regions develop their own endogenous innovation capacity? The case of the US nanotechnology industry

One way to test how regions can become innovation hubs is to look at the evolution of an industry that has few historical roots in specific regions. For instance, nanotechnology potentially has wide cross-industry applications. But does this mean that nanotechnology research and innovation will emerge in many different locations as nanotechnology is developed and applied by a range of institutions and companies in existing and new industries? Or will it be focused in a small number of clusters where demonstrated capabilities and expertise for high-technology development are already present, as has been the case so far with biotechnology? (Shapira and Youtie, 2008). There are a number of different possible influences – existing government research centres are often the focus for extra nanotechnology-related investment by the public sector, or large anchor firms could exert a catalytic effect on nanotechnology research in their immediate vicinity. Research using publication citations in the field of nanotechnology suggests that there are multiple factors associated with the development of nanotechnology research regions that accommodate both the path-dependency course (where existing strengths form the basis for continuing high performance) and the potential for emerging aspirants to become new centres for nanotechnology R&D (Shapira and Youtie, 2008).

Source: Youtie, J. & Philip Shapira (2008), "Mapping the nanotechnology enterprise: a multi-indicator analysis of emerging nanodistricts in the US South", *The Journal of Technology Transfer*, Springer, Vol. 33, April, No. 2, pp. 209-223.

Innovation clearly depends on more than just the volume of research or the per capita R&D effort made by a region. Most research on the geography of innovation now looks beyond the absolute levels of innovation-related investments and assets that places have and looks for more systemic reasons behind the relative success of some locations. This research emphasises knowledge flows and the concept of spillovers, Some general observations about the kind of knowledge used in innovation support this emphasis:

- Knowledge includes an important tacit component that cannot be easily codified and therefore requires direct interaction, on-the-job learning and workforce mobility in order to circulate.
- The high degree of uncertainty surrounding innovation may be reduced by the exchange of information among firms.
- The complexity of innovation requires the co-ordination of different capabilities and benefits from the ability to access sophisticated complementary inputs.

Recent efforts by national and regional authorities to develop regional innovation policies have included attempts to design policy frameworks that support these positive externalities by improving the efficiency with which partners interact and share knowledge and by systematising their relationships (the regional innovation system approach). Despite this ongoing evolution in policy thinking, it is crucial to clarify the general "rules" that determine how innovation policy is managed across levels of government. Evidence from reviews suggests that the respective roles of national and regional policies can be described broadly as follows:

- **National policy** sets an "anonymous" framework of regulations and institutions that is designed to shape the policies and initiatives of a wide range of actors towards some general economic and specific S&T related objectives.

- **Regional policies** relate to more or less direct collaboration among identifiable actors, implementing policy in specific places to achieve specific targets. The role of regional authorities is to offer services and other mechanisms that augment the inter-linkages between these actors.

Within this general framework, the multi-level relationship has the following features:

At the national level:

- Guiding and defining strategic policy, on the assumption that science and technology policy and associated budgets are strategic for a country.
- Setting research funding priorities and designing programmes to allocate funding according to these priorities.
- Setting university funding and assessment criteria.
- Decisions on large-scale investments in S&T facilities and equipment (*e.g.* synchrotrons).
- Informing and engaging industry, research, talent and stakeholders in support of the above.

Regional activities should be complementary and designed so that the level of intervention is appropriate. In general, this means that they are closer to the "output points" of the innovation process.

At the regional level:

- Activities should be close to the market, assisting firms to translate knowledge into marketed products and services.
- Mostly actively animated by a regional-level body, often a relatively autonomous agency of a central department or a sub-national authority. These public or private bodies tend to be more hands-on and engage directly with the targeted actors (firms in key sectors, HEI etc.) rather than being services provided to all firms.
- Strategies usually involve grants, loans or equity investments to assist firms or support research initiatives (usually where there is some persistent market failure, such as provision of public venture capital or building of business incubators).
- Policies will increasingly have international dimensions: developing regional and inter-regional supply chain programmes to enhance innovation by firms in the home region or seeking to attract innovative foreign firms to raise the demand for innovation from local ones. More generally, regional actors are engaged in learning networks with other regions.

In practice, this still leaves different institutional options for the delivery of policy (Boxes 2.9 and 2.10). Federal or strongly decentralised countries will have some form of constitutional arrangement that devolves powers for important dimensions of innovation policy to sub-national units. The central government maintains some role in providing funding for key sectors or technologies and usually retains a guiding influence over science policy and major funding streams for scientific research. This is the case in the US and Germany, for example. In other countries, where decentralisation is more recent or ongoing, innovation policy is more of a joint responsibility. In Italy, for example,

responsibility for innovation policy has been shifted to the regions, but the central government ministries still have important functions.

In more centralised countries, the regional dimension of innovation policy remains strongly driven by the centre, with the regions involved in business support delivery (*e.g.* cluster policies) or more real-estate based actions such as science parks. Some governments, such as the UK government, have established arms-length agencies to give a more private sector feel to policy delivery while maintaining central government control over how resources are spent.

In most countries, a significant trend is the strong desire of regions to be more active in innovation policy and the central place of innovation in regional strategies. This has led many regions and cities to establish their own innovation support agencies, sometimes growing out of SME or cluster support bodies or local development agencies. Prominent examples of such agencies include SPRI in the Basque Country, ASTER in Emilia-Romagna and Bretagne Innovation in Brittany.

Box 2.9. **The emergence of a regional dimension to innovation policy in Chile**

Chile has made progress towards a territorial approach to regional development. Between 2006 and 2007 the Chilean government established regional development agencies (RDAs) based on co-operation between the private and public sectors. 15 RDAs have been established, one for each region. The process was directed by the Chilean Economic Development Agency (Corfo), and was co-financed by the Inter-American Development Bank (IADB). One of the main roles of the RDAs is to develop bottom-up regional agendas for productive development based on each region's assets, strengths and opportunities. They represent a promising means of creating regional frameworks for business development and public/private partnerships. Within the same context, some programmes are trying to spread the benefits of Chile's innovation system (strongly concentrated around the capital, Santiago) to the regions. In 2000, the National Commission for Scientific and Technological Research (Conicyt) launched the regional programme on science and technology, which now supports 11 scientific and technological centres in different regions of the country. The objective of this initiative is to stimulate the development of centres of excellence in disciplines or specific areas of research that are consistent with regional assets and advantages. In addition, the launching of the Competitiveness Innovation Fund of Regional Assignment in 2008 appears as a major effort to improve innovation in the regions. The 2008 budget of the Competitiveness Innovation Fund amounted to CLP 80 907 million (more than USD 154.5 million), or close to 30% of total public investment for innovation in 2008. Regions assign 25% of these resources and thus participate in decisions on the use of public resources for innovation, giving them the opportunity to link innovation investment to regional priorities.

Source: OECD (2009) Territorial Review of Chile, OECD Publishing, Paris.

Box 2.10. **Supporting regional innovation systems: national and regional examples**

National approaches

- Encouraging regional innovation strategy development: The United States Department of Labour has promoted the WIRED programme in an effort to build regional strategies that support the development of the labour market in ways that meet the region's business and innovation needs. France, in response to EU evaluations, has been providing technical assistance to different regions to better tailor their innovation strategies to specific regional situations. The United Kingdom offered seed funds to help its Regional Development Agencies develop regional innovation strategies.

- Decentralising innovation support responsibilities: Through a series of legal changes, Italy has devolved authority for innovation policy to the regions. In practice, only some regions have actively taken on this new role, notably Piedmont and Lombardy. In Spain, decentralisation of responsibilities has also included supporting science and technology. Therefore, the Autonomous Communities are increasingly financing business R&D, public research institutions, technology parks and centres, and other innovation system-building instruments.

- Supporting innovation hubs: Finland and now Norway have funded regional Centres of Expertise to act as hubs for regional innovation systems in different. Numerous other programmes across OECD countries are supporting increased collaboration between knowledge generators and firms, including the NRC Technology Clusters Initiatives in Canada, the Innovative Cluster Cities in Korea or the VINNVAXT programme in Sweden. These different programmes combine innovation resources with the regions' industrial strengths.

Regional approaches

- **Co-ordination:** The regional level (as opposed to the national level) is more suited to bringing actors together in definition of a strategy. While one region may have a few key actors or leaders in the innovation system, in others the landscape can be very complex. One of the core challenges for the ***Piedmont region*** (Italy) is to bring together these different actors under a coherent regional strategy.

- **Adapting instruments:** National level instruments tend to be more focused on setting up the overall framework, whereas regions focus on instruments that are closer to the market, assisting firms to translate knowledge into products and services. Mexico, having one of the highest intra-regional disparities in productivity of all OECD countries, requires differentiated regional responses. For example, the ***state of*** Yucatan is strong on research but could have better ways to link this expertise with the agricultural sector. In some northern border states, such as the state of Chihuahua, they are seeking instruments to capitalise on spillovers from the significant FDI flows to the *maquiladora* plants and to attract design centres of multi-national firms.

- **Filling gaps:** One of the roles for a particular region is to identify and fill in gaps within the region's innovation system. In the north of England, the North East region has a thin institutional landscape in terms of firms and has some strong universities but was missing intermediaries. Through its Strategy for Success, the region has supported the development of private closer-to-market, translational, scale-up and demonstration facilities.

Source: OECD Territorial Reviews and OECD Reviews of Regional Innovation.

Innovation network building – cluster policies are still popular

Despite a certain level of "cluster fatigue" in academic and policy circles, national programmes using a cluster model continue to be introduced, and in some cases are becoming more prominent on the policy agenda. The concept of clusters has been adapted and revised to fit a wide variety of new contexts and often acts as a bridge between regional policy and national science and technology or innovation policy.

There are many basic motivations for these policies. There is strong quantitative evidence that many industries remain relatively concentrated in specific regions. There is also evidence that firms close to research generators can out-perform their counterparts located in less rich environments. Countries seek to strengthen or replicate the factors that have successfully encouraged the emergence of the concentrations of innovative firms in those regions associated with the "new economy". They are also looking for instruments that can help maintain employment and promote restructuring and adaptation in other sectors. Finally, regional policy, science and technology policy and industrial/enterprise policy all increasingly promote the importance of regional actors working effectively together with a goal of greater regional and national competitiveness as well as increased innovation. This shared perspective is also encouraged by the belief that clusters are a convenient and pragmatic organising principle around which to focus resources and build partnerships.

Table 2.3. **Policy trends supporting clusters and regional innovation systems**

Policy Stream	Old Approach	New Approach	Cluster Programme Focus
Regional policy	Redistribution from leading to lagging regions	Building competitive regions by bringing local actors and assets together	• Usually target or include lagging regions • Focus on smaller firms as opposed to larger firms, if not explicitly than *de facto* • Broad approach to sector and innovation targets • Emphasis on engagement of actors
Science and technology policy	Financing individual, single-sector projects in basic research	Financing collaborative research involving networks with industry and links with commercialisation	• Usually high-technology focus • Both take advantage of and reinforce the spatial impacts of R&D investment • Promote collaborative R&D instruments to support commercialisation • Include both large and small firms; can emphasise support for spin-off start ups
Industrial and enterprise policy	Subsidies to firms; national champions	Supporting common needs of groups of firms and technology absorption (especially SMEs)	Programmes often adopt one of the following approaches: • Target the drivers of national growth • Support industries undergoing transition and thus shedding jobs • Help small firms overcome obstacles to technology absorption and growth • Create competitive advantages to attract inward investment and export brands

Source: OECD Territorial Reviews.

National and EU level programmes to support clusters and regional specialisation originate from one of three main policy families: regional policy, science and technology policy or industrial/enterprise policy. All three policy areas have undergone changes in

policy orientation away from a top-down and single-sector approach towards policies that favour co-operative, multi-actor and often more place-based approaches, as described in the Table 2.3. These trends have supported increased policy interest in programmes to develop or strengthen regional specialisation and cluster development.

Regional policies promoting competitiveness rather than equity or other objectives use cluster approaches as a means of aggregating key economic actors in regions. This geographical focus results in policies to promote greater linkages among local actors or to reap the benefits locally of the knowledge produced there. Innovation is a prominent objective in programmes to support specialisation, even in regions where the industry or industries concerned are not those most closely associated with research-based innovation.

One of the reasons behind the effort to build networks of actors is to generate innovation, including small-scale, incremental and process innovation. One appealing feature of the approach in the context of regional policy is that it seems to be applicable in both advanced regions with dense knowledge infrastructures and in non-core or former industrial regions. For example, in leading regions with a portfolio of economic activities, the policy goal is often to support specialisation in a subset of these sectors or clusters. In other regions, those where traditional manufacturing industries are strongly embedded, cluster policies are designed to help the region diversify into new activities or change the value structure of current specialisations. This policy shift acknowledges that the industrial base in both leading and lagging regions is undergoing transformation and these approaches offer one way to improve the linkages and facilitate the transformation.

Some concerns remain about the ability of such policies to be effective in a rapidly evolving economic environment; especially since the place of clusters in global value chains is not fully understood. After all, most, if not all, of the highly coveted innovative clusters, such as those related in ICT or biotechnology, have emerged without specific policies to promote networking or cluster behaviour. Furthermore, clusters built up over decades are transforming rapidly, which makes them difficult targets for policy. Many regions that historically were production centres in a particular sector are still specialised in that industry, but are also increasingly involved in non-manufacturing or niche activities. For example, car producing regions like Turin, Italy or Gothenburg, Sweden remain in the automotive sector, but new areas of expertise have emerged (transport-related GPS technology and safety equipment respectively). And even some of these upstream activities have begun to be off-shored to lower cost OECD and non-OECD countries.

The question for policy makers is how durable the competitive strengths on which cluster policies are based are, and how they can avoid locking regions into a strategy with only short-term value (Box 2.11).

Box 2.11. **Cluster policy approaches: lessons learned from OECD analysis**

One of the major challenges to clearly identifying what we have learned about cluster policy is that we lack robust tools to measure whether or not such policies have been successful. Evaluations are not available for all programmes, although several use some sort of evaluation or monitoring component for on-going funding decisions. Possible evaluation methods might cover either the performance of a cluster or cluster initiative or the impact of a particular policy intervention. Both merit stronger analytic frameworks. Despite these challenges, policy learning, even if not through a formal evaluation, has provided useful input into the design of programmes and cluster processes. There are also many lessons to be learned in programme design, based on the practices from many OECD countries, that could help at least improve the likelihood that the programmes will meet their ultimate goals. These can be broadly grouped as follows

First, to what degree are these programmes appropriate, realistic and flexible enough to achieve their goals? There needs to be a compelling reason why a cluster policy - as opposed to any other policy open to all firms - is the most appropriate to achieve the stated goals. Often the goals of these cluster-type programmes are broad or vague, seeking generally to enhance competitiveness or innovation capacity. This lack of clarity in turn makes it difficult to select the right targets and establish funding levels and duration that are adequate to meet those goals. Given that these clusters may be in different lifecycle stages, region types or sectors, programmes are more likely to be successful when there is a certain degree of flexibility.

Second, how much policy coherence is there within and across levels of government? Because these policies are emanating from at least three policy streams, it is even more important for policy makers to have a clear understanding of what other policies exist and how they can work together or in a complementary fashion. Because of the importance of clusters to a particular region's economic health, as well as their importance for national competitiveness goals, the policies are developed at different levels of government. The interests of each level, as well as their respective resources and capacity, are important considerations in the articulation of national and regional level programmes.

Third, what risks do such policies run, for example due to insufficient private sector engagement? The long-term effectiveness of such policies depends on the private sector continuing to act even after a programme ends. Even during the programme period, it is the private sector that is best equipped to react in a timely manner to market changes. Several programme evaluations have noted an excessive public sector role and an unsuccessful public sector exit strategy, if any. There are also general risks to supporting clusters. One common problem is the ability of the public sector to "pick winners." Other risks include locking in existing clusters and technologies, making it more difficult for other clusters or technologies to develop. Careful policy design can help mitigate these risks if they are explicitly addressed.

Source: OECD (2007), Competitive Regional Clusters: National Policy Approaches, OECD Publishing, Paris.

Higher education institutions have a key role to play in regional innovation

In many regions, the main providers of skilled workers are local universities and colleges. Their role in building human resources for regional development was until recently somewhat detached from the regional economy itself, being relatively unresponsive to changes in local demand. This situation is, however, changing. Pressures to enhance the employability of university graduates brought workplace skills onto the tertiary education agenda. As a consequence, higher education institutions are now called

upon for tasks that go far beyond their traditional teaching and research functions, such as regional engagement, urban planning, and, perhaps most significantly, collaboration with firms. Many higher education institutions (HEI) have now taken steps to respond better to the needs of their regions and to transform themselves into entrepreneurial universities. Table 2.4 outlines the main ways in which higher education institutions interact with their local environments (Lawton Smith, 2005).

Interactions between businesses and universities have generally increased, although the degree varies greatly by region and by country. Three main types of relationship are distinguished:

- Relationships between multinational enterprises and world-class universities. Multinational enterprises are externalising part of their research and development activities and are looking for the best laboratories, scientists and students. Their concern is not whether specific universities meet their needs, but that they are world-class.
- Relationships between universities and small high-technology firms (spin-offs and knowledge intensive business services). Although this phenomenon is small, it is important in terms of quality and needs to be assessed in a longer-term perspective.
- Regional relationships between firms (often SMEs) and the local university. Here firms are looking for short-term, problem-solving capabilities.

These new roles for universities are particularly apparent in the US where many public research universities have long-established missions to encourage business development. A recent study of the most successful US universities (see Box 2.12) highlighted the importance of university leadership (in championing economic development and innovation missions), faculty culture and rewards, active and well-organised technology transfer and entrepreneurship incentives throughout the university, and strong partnerships with private and other public organisations (Tornatzky *et al.,* 2002).

Universities are traditionally managed and supervised by ministries of education and ministries of research (when these are separated) at national or, in federal and decentralised countries, at regional level. Their strategic missions are influenced by the programmes, instructions (in the case of public universities) and regulations of the ministries. Moreover, regulatory frameworks can also reduce the freedom and incentives for institutions and individual researchers to engage in projects with the private sector. OECD countries have introduced reforms in the governance of universities with the aim of increasing their flexibility and autonomy and, thereby, promoting better interaction among universities, public research organisations and firms. Japan is a good example (Box 2.13).

Table 2.4. **Taxonomy of relationships between tertiary education and business**

Innovation	
Knowledge production and transfer of knowledge	• Formal research collaboration • Links to global technological and scientific networks • Take up of patents & licences • Published papers *e.g.* joint academic industry articles • Contract research • Specialisation in new technologies and leadership of new industries
Technological applications of research, expertise and in-house facilities	• Testing services *e.g.* carbon dating, equipment testing • Prospects of application (*e.g.* X-rays, lasers) • Engineering design tools and techniques including modelling, simulation and theoretical prediction • Product and process development • Instrumentation
SME support	• Prototype development • Consultancy services • Testing • Contract research
Entrepreneurial culture, entrepreneurship and cluster development	
Entrepreneurship	• Spin-offs
Buildings	• Science parks • Incubators
Networks	• Cluster-focused technical assistance • Network facilitators, developing academic and non-academic networks • Mentoring services
Image	• Location marketing and development, promoting brand image, organisation of showcase events
Human capital	
Recruitment	• Recruitment of undergraduate and post-grad students
Vocational training	• Vocational courses – technical and teaching *e.g.* technicians training • Placement schemes
Public access to knowledge	• Continuing professional development and extension programmes • Public lectures and public access to libraries, museums, galleries, sporting facilities
Direct multiplier effects	
	• Staff, student and visitor spending • Purchase of goods and services • Contribution to tourism • Support for inward investment
Governance	
Engagement in decision-making processes	• Economic • Cultural • Sustainability • Transport
Contribution to sustainable development	• Contribution to the quality of the built environment • Contribution to property-led urban regeneration • Provision of student accommodation • Effects on parking and traffic problems • Other land use issues

Source: H. Lawton Smith (2005).

Box 2.12. **Research-industry relationships: the example of Georgia Tech**

The top-ranked "Innovation-U" in a recent study by the Southern Growth Policies Board was Georgia Institute of Technology (Georgia Tech) in Atlanta. A prominent research university, Georgia Tech also works closely with the Georgia state government, local communities, and businesses in a variety of technology-focused initiatives. Economic development and technology transfer activities are housed in Georgia Tech's Economic Development Institute, which operates a network of regional technology transfer offices in 18 communities in the state, and in its parent organisation, the Office of Economic Development and Technology Ventures, which sponsors advanced technology incubators and faculty commercialisation programmes. Many other academic units, research centres, and the university's continuing education programme support regional innovation missions. Long-term results from Georgia Tech's regional innovation efforts include a massive expansion of industry-research partnerships, the development of cutting-edge, technology-based economic development programmes, scores of new high technology start-ups, ongoing technology and business support for thousands of existing firms, specialised industry training of thousands of people each year, and the fostering of systems for entrepreneurial development in the state.

Other "Innovation-U's" highly ranked in the study were Carnegie-Mellon, North Carolina State, Ohio State, Pennsylvania State, Purdue, Stanford, Texas A&M, UC San Diego, Utah, Wisconsin, and Virginia Tech. The practices and partnerships of these innovative universities emerge from the grass roots and not from the federal government or through a top-down standardised formula. "There are common practices," the study authors conclude, "but no one model or approach is followed by all"(Tornatzky et al., 2002).[3]

Source: Example cited in OECD (2005) *OECD Territorial Review of Japan,* OECD Publishing, Paris.

Box 2.13. **Deregulation of universities: the case of Japan**

In 2004, Japan's national universities – positioned as part of the central government for more than a century – were reformed as independent public corporations. University faculty members are now non-governmental employees, not civil servants as before. From 2004 onwards, it is also possible for other public universities to be incorporated by the prefectural government concerned. Selective mergers to create economies of scale and other changes in academic incentive and evaluation systems are also under way. Universities are rapidly establishing Technology Licensing Offices, incubators, collaborative industry-research centres, and other programmes to promote research commercialisation and regional development.[4] The aim is to stimulate a more flexible, competitive and entrepreneurial university system in Japan that can not only undertake world-class research but also have significant impacts on regional innovation and development. Whether the latter goal is achieved will depend not only on the extent to which universities themselves embrace these reforms, but also on the ways in which regions and localities can build new linkages between universities, economic sectors, and territorial innovation strategies.

Source: OECD (2005), *OECD Territorial Reviews: Japan*, OECD Publishing, Paris.

Box 2.14. **HEI responses to regional business needs: examples from Germany and Korea**

Karlstad University Professional Services AB was established in January 2005 to handle the business side of all commissioned training and education given by the university to companies and public organisations. The company has five staff and organises courses using Karlstad University staff and external experts from Sweden and beyond. The arrangement complements the traditional course delivery within the university and contributes to the general development of more applied and regionally relevant curricula. It allows university lecturers to make external contacts, giving them experience of other kinds of teaching and providing them with interesting and well-worked case studies for inclusion in their regular teaching activities. Clients include County Council of Värmland and other public organisations, such as the municipalities of in the region; Paper Province and other non-profit trade associations; companies such as AstraZeneca, Ericsson, MetsoPaper, SkiStar. It also has international clients *e.g.* Jiangxi University and several Norwegian counties. The overall goal of the courses given is to strengthen research and teaching. Major areas include culture and learning, management, business and administration; health care, industry, IT and technology. Examples of courses include Pulp Technology; Production Management; MBA; Tissue Technology, Business Administration and Computer Vulnerability Analysis.

The Family Firm System was launched by Dongseo University in Busan in 2004 after a four year development phase. Under the system, a senior academic mentor is assigned to five companies which offer students and graduates internship and job opportunities. The Family Firm System has attracted 556 companies which have benefited from such close co-operation through reduced recruitment and induction costs. The system has enabled the university to develop courses reflecting business needs; effectively utilise internship programmes; share equipment; conduct joint projects with business; increase job opportunities for graduates; improve the university's reputation and improve the university's contribution to the regional community. The existence of the Family Firm System was an important factor in enabling Dongseo University to win five projects from the national New University for Regional Innovation scheme (NURI) competition in 2005.

Source: OECD (2007), *Higher Education and Regions*, OECD Publishing, Paris.

Innovation offshoring and the challenge for OECD regions

Policy makers in OECD countries clearly need to understand the global dimension of innovation activity and how it is evolving. To capture this global dimension, OECD is working with the Knowledge Competitiveness Report to track the evolution of innovation-related data in both OECD and non-OECD regions over the past five years. The results show strong growth of non-OECD regions with respect to innovation-related investment. Some noticeable patterns include:

- There has been a clear rebalancing of resources with a west-to-east shift. There are relatively strong geographical patterns in the variations, indicating the reallocation of innovation-based resources towards specific regions, especially China.
- Chinese regions, among others, have in recent years established a virtuous circle of innovation-related development. In these "virtuous circle" regions, growing business-led investment in innovation fuels economic growth, which is fed back into higher earnings and greater investment in education.

- Within leading regions in OECD countries, many regions which previously specialised in knowledge-based manufacturing have begun to shift towards more service-related knowledge-based activities. This decline in manufacturing employment in technological sectors is not directly linked to a poor performance on innovation indicators, but it is likely that there will be some impact over the longer term on business R&D investment.
- Conversely, some OECD regions such as Brussels, better known as advanced service centres, appear to be finding niches in high-technology manufacturing sectors such as biotechnology.
- Despite offshoring, many of the less advanced regions in the sample, such as the southern regions of the US, are continuing to experience growth in their knowledge economies thanks to manufacturing-based employment in technology-intensive industries.

The concern of policy makers in the future will be to ensure that regional economies are innovative and thereby more resilient in the face of economic shocks and increased international competition. For example, the ability of Ottawa and Stockholm to recover the output and employment lost during the ICT crisis is a sign of their adaptability, although in each case the restructuring has fundamentally altered the nature of the activities carried out in the region. The performance of the major car manufacturing regions in Europe and North America – which are still strongly oriented towards production – will offer more evidence of whether traditional sectors can be restructured as industrial locations, in spite of the concerns about the pressure of global competition.

The response of regions to these changes takes a variety of forms, some more explicit than others. In most cases, there is some form of regional economic strategy that includes a business development and innovation plan elaborated at either the regional or municipal level, often co-ordinated with a national level strategy that includes specific programmes, instruments and funding. OECD research in a cross-section of industrial regions suggests there are at least six main policy objectives for regions (Table 2.5). These are closely inter-related and are often covered by the same programme, but they highlight the different dimensions of regional competitive advantage that policy makers are trying to enhance and illustrate the main region-specific assets on which regional policy makers are building their strategies.

Table 2.5. **Summary of policy objectives**

Regional asset	Objectives
Supporting firms	
Existing specialised firms	Broadening the customer base of specialised firms, reducing their dependence on multinationals, helping them to reach global markets.
Innovative small firms	Supporting small firms with technical facilities, linking them to venture capital and other finance, helping to create networks among small firms.
MNEs	Embedding certain functions/activities of multinationals in the region through stronger supply chains and a richer regional environment, supporting interaction between large firms and innovative small firms.
Improving the regional environment	
Cross-over technology	Reducing dependence on single industry by identifying cross-over or enabling technologies, finding new applications for sector-specific technologies.
Regional innovation system	Promoting linkages between economic actors through co-location (science parks etc.), strengthening the applied research dimension of public R&D facilities, supporting open innovation mechanisms.
Other measures of regional attractiveness	Improving infrastructure, ensuring that skills supply is appropriate, limiting brain-drain and trying to attract skilled people.

Source: OECD Territorial Reviews.

The tools available at the regional level vary considerably according to institutional frameworks and the focus varies according to the industry or industries targeted. However, a number of relevant findings emerge:

- First, the basis for any potential regional action should be a clear and systematic analysis of the region's economy and assets in the context of global trends. Quantitative and qualitative data is useful for the analysis of what strengths are durable and where there may be new opportunities. This also requires a clear understanding of the changing roles of different categories of firms (start-ups, SMEs, multinationals, etc.) and their role in global supply chains. However, the data available are often at too large a scale to capture the very localised dimension of the knowledge spillovers that policy should be targeting (evidence from the US points to a rapid decline in the positive spillover effect with distance).
- Second, a common understanding of the problem facilitates the development of a consensus over strategy. Given the numbers of stakeholders, both public and private, this consensus is needed for a co-ordinated response. Often a compelling problem or crisis serves as the trigger for co-ordinated action, and there is a strong risk of complacency when regions fail to anticipate future trends because current indicators are positive.
- Third, perhaps the most important role for regional strategies is to favour adaptation to change. While public actors are not well-placed to predict the future of global product markets, they can play a clear role in developing an environment that supports private actors in their efforts to adapt and seize opportunities. Tools are needed both to understand and monitor how their research and educational assets interact with enterprises with the goal of designing policies to help build more systematic links between all actors.

Sustainable regional development: a new role for spatial planning

Regional policy strategies can make better use of spatial planning in order to enhance synergies and avoid duplication and conflicts within and between regions. Three main dimensions of spatial planning are consistent with the discussion above, namely:

- The achievement of national and regional economic, social and environmental goals can be supported by improving synergies between sectoral policy measures.
- Spatial planning is one important means by which to promote these synergies and improve the allocation of investment and resources.
- However, the effectiveness of current spatial planning approaches needs to be improved.

Spatial planning can be seen as one means by which to manage demand for future public investment, encouraging trajectories that maximise growth opportunities without overstretching public investment requirements. As countries, regions and cities strive to improve their competitiveness with respect to other places, so the (local) inputs that contribute to economic success, including the quality and functioning of infrastructure and public services, are being closely scrutinised. In this context, spatial planning, as both a means to reduce factor costs and to reduce public investment needs, should have an important role to play.

Spatial planning is practised at various levels of government, and the level has a major influence on the objectives and scope of the planning process. The highest level of plan is usually the macro-level plan – usually at national level but also in some countries at large region level (*e.g.* for US states). Many countries, for example the UK and US, no longer have a national spatial development plan as such. Others are exclusively conceptual (*e.g.* France) or have become increasingly conceptual (*e.g.* Japan), concerned with economic development issues in the aggregate but not directly with decisions over allocation or land use.

The nesting of plans at different levels has become less and less straightforward. In the past, macro plans were specific and directive, which made it somewhat easier to disaggregate them into regional and local plans. Recently, these national development plans have become broader and more conceptual, combining physical development objectives with less tangible goals such as sustainable development. A principal challenge facing spatial planning today is, therefore, how to reconcile the diversity of roles that spatial planning is expected to play at different scales. In particular, the middle level plans - examples include the *Schéma directeur* in France, the *structurplan* in the Netherlands and regional spatial strategies in the UK - have become more important as expressions of a regional development strategy.

Despite some variations, the planning systems of OECD countries can, in general, be said to encompass the following fundamental functions:

- Spatial planning provides a long or medium-term spatial strategy in pursuit of agreed objectives, often controlling regional disparities and working towards sustainable development.
- Spatial planning is also frequently a tool to co-ordinate various sectoral policies in pursuit of these spatial development objectives.
- Spatial planning is increasingly understood as a mechanism of integration which enables sub-national governments to shape their own spatial development policies in conformity with national or even international policy goals, and facilitates the regional and local adaptations of national policies.

The last point - spatial planning as a means of policy integration - seems particularly relevant. For example, Portugal's recent explicit attempt to design a regional policy at a national level has been the recent reform of spatial planning. Portugal followed various OECD countries (such as France and Japan) in considering spatial planning as the closest policy to regional policy, due to the focus on the territorial distribution of resources and the specificities of different types of regions. After decades of limited use of spatial planning,[5] Portugal has just adopted a wide-ranging instrument called the National Spatial Policy Programme (NSPP), which aims to assess national territory, forecast possible development trends, and propose lines of action (Box 2.15.).

A basic problem of spatial planning is its relative weakness within the overall hierarchy of government departments. Many sectoral policies are strongly interdependent – transport and housing, for example. They are also influenced by and exert an influence on land use. Transport demand is closely related to the "trip generation" potential of land use; the density of housing affects the demand for transport. As such, choices about zoning and other mechanisms that affect the density and spread of residential areas will determine, to a large extent, public transport or road network investment decisions. In some cases, the objectives of policies in different sectors can be contradictory – for

example, there is often tension between housing and industrial policy and environmental policy where greenfield sites are concerned. Planning is usually seen as the main instrument by which sectoral policies are co-ordinated and given a spatial articulation.

Box 2.15. **Portugal's National Spatial Policy Programme (NSPP)**

The National Spatial Policy Programme (NSPP - *Programa Nacional da Política de Ordenamento do Território* or PNPOT in Portuguese) was designed as a tool to "know national territory; forecast its future; and act for spatial planning and territorial development". After a task force was set up in February 2003, the technical proposal was put together in 2005 followed by a public participation process in 2006. The parliament voted the law approving the NSPP in July 2007 (published as Law nº 58/2007 on September 4th, 2007).

The NSPP is composed of two parts:

(1) A report identified 24 "territorial and spatial planning challenges" (in terms of natural resources and risk management; urban and rural development; transportation, energy and climate change; territorial competitiveness; infrastructure and collective services; civic culture and spatial planning) and put forward a vision for Portugal 2025 ("a well-planned and sustainable territory; a competitive, integrated and open economy; an equitable territory; a creative society with a sense of citizenship").

(2) An action programme proposes six "strategic objectives" (preserve and value biodiversity, landscapes and cultural heritage; reinforce territorial competitiveness and international integration; promote the polycentric development of territories; ensure territorial equity in the provision of infrastructure and collective services; expand networks and ICT infrastructure; reinforce spatial planning quality and efficiency), which in turn have been developed into 36 specific objectives and 197 measures.

At the same time, Regional Spatial Plans (*Plano Regional de Ordenamento do Território* or PROTs in Portuguese) are being prepared in order to cover all NUTS 2 regions. They are elaborated by the Commissions for Regional Co-ordination and Development (CCDRs), *i.e.* the devolved bodies of the central government (Ministry for Environment, Spatial Planning and Regional Development) in the five mainland NUTS 2 regions, and by the regional governments in the two autonomous regions of Azores and Madeira. The CCDRs organise plenary and sectoral sessions to discuss the PROTs, and municipalities are invited to participate via commissions. The PROTs have a binding power over municipal development plans (PDMs) elaborated by municipalities.

Note : Further information about the Portuguese NSPP is available on *www.territorioportugal.pt*.

Source: OECD (2008), OECD Territorial Reviews: Portugal, OECD Publishing, Paris.

However, spatial plans appear in some cases to have been reduced to a suggestive role rather than an expression of agreed commitments. Within this, the mismatch between the long and medium-term strategic planning function that is a key element of public investment and the more short-term mechanisms of policy programming and funding (managed directly by line ministries) has become an important obstacle to alignment across different sectors.

Spatial plans cross not only local government boundaries but often two or more administrative regions as well. This causes major problems of co-ordination in general

and makes planning and the implementation of plans complex. Manifestations of poor co-ordination include:

- Poor quality of public services where administrative boundaries inhibit efficient use of resources and investment.
- Duplication and waste where sectoral policies are poorly integrated and have different, even contradictory objectives.
- Reluctance to share resources and information with other public authorities.
- Dispersal of funds to a multiplicity of agencies with similar mandates.

Many problems of co-ordination are related directly to weaknesses in the system of governance, which often does not adequately reward co-operative behaviour. There is a tendency to view public investment in infrastructure and service provision at regional or local level as being spatially neutral, *i.e.* as following an optimal economic allocation model, whereas in fact the process is strongly influenced by spatial factors, in particular local political dynamics. The choice of what type of infrastructure is funded or where a particular facility is located will have both an economic and political bottom line, and the ability of a governance system to arbitrate competing demands across, as well as within, administrative borders, goes a long way towards explaining the effectiveness of policy implementation.

Rural development policy's new paradigm

While rural areas can be found within large urban agglomerations, the typical focus of rural development policy has mainly been on remote rural regions, where the majority of the population is found in the open countryside or in small cities and towns, and secondarily on intermediate regions, where much of the population is in an urban setting but there is still a significant share of population in small settlements and the open countryside. In framing policy, rural areas are too often still seen as characterised by a dependence on agriculture, a low level of economic performance, and as a source of underused labour for urban centres. Although there is a historic truth in this stereotype, it is no longer an accurate depiction of the majority of rural regions in the OECD countries.

In virtually all OECD countries agriculture now plays a minor role both in national GDP and as a source of employment. Moreover, agriculture shares the same characteristics in the majority of rural regions in OECD countries. Most of the people who live in both rural remote and intermediate regions do not earn their incomes either directly, or indirectly, from agricultural production. Agriculture continues to play a key role in income and employment in a small number of regions and, in most of the OECD, agriculture still dominates land use, but most rural residents are now engaged in economic roles that differ little from those found in urban areas. Where agriculture is instructive is that for decades it has continuously demonstrated a high rate of innovation and in the process has vastly increased output on a slowly declining land base by substituting capital for labour.

Since its inception in the early 1990s, OECD territorial analysis has shown that rural regions vary widely in economic performance. Some rural regions in member countries are among the worst performing, but some have higher rates of economic growth than their urban counterparts. This demonstrates that economic growth is not just an urban phenomenon. It also suggests that there may be a role for government in identifying why

some rural regions grow while others do not and then in providing appropriate support to lagging regions in order to improve their performance.

Finally, while some outmigration continues to take place from rural to urban areas it is considerably smaller than it was in the past. Internal migration is no longer a significant source of urban growth in most OECD countries because the demographic conditions in most rural regions can no longer support outmigration. Moreover in many rural areas, particularly those with a high level of amenities or strong growth, there is net migration.

The changing situation in rural areas dictates a need for a new rural policy. In 2006 the OECD member countries adopted the principles of the New Rural Paradigm (NRP) as a way to formalise current best practices in rural development into a set of principles for national policy development (see Box 2.16). The guiding ideas that underpin the NRP include:

- Recognition that sectoral policies have only limited capacity to achieve rural development objectives.
- A change in policy which has reduced aid for disadvantaged regions, including rural regions, and moved the focus from equity to making investments that enhance local competitiveness.
- Greater emphasis on sustainable development and resource management as a policy objective.
- An understanding that rural regions occupy the majority of the national territory of most nations and that land-specific issues remain a crucial element of rural policy, although now in the form of public goods rather than the traditional source of raw material inputs to production, even as natural resources play a smaller role in national GDP.

Evidence from national rural development programmes, suggests an ongoing evolution of rural policies towards some or all of the following elements and policy objectives:

- Efforts to reinforce rural economies, principally through diversification of economic activities. This often involves identifying a competitive advantage of a region that may be based upon its location, its specific resource endowment, or its potential to manufacture a product for export to either an urban area or internationally.
- Upgrading of transport and communications infrastructure, promoting networks of knowledge and expertise, supporting education and training, increasing the attractiveness of areas for new enterprises including enhancing business assistance and business services, establishing inter-regional and international business networks and encouraging endogenous innovative initiatives.
- Recognition that the adoption of better technologies, as has been the case in agriculture, mining and forestry, is crucial to maintaining the competitiveness of rural areas against developing countries with a huge cost of labour advantage.
- Improving the functioning of local labour markets by providing small-scale forms of training, increasing awareness of job openings, providing job matching services and broadening the skill set of the local labour force.

- Encouraging greater collaboration between individual units of local government within a region to overcome the rural disadvantages of distance and lack ofdensity and critical mass.
- Restructuring agriculture through intensification, modernisation and increasing value added in productive regions; extensification and development of multifunctional agriculture in less productive regions; and internal diversification and high-quality products in areas of "traditional" agriculture.
- Providing public services in rural areas in new ways, sometimes combined in service centres and sometimes using information and communications technologies, as in the case of telemedicine and distance learning.

Bringing these different elements together into a multi-sectoral policy capable of promoting rural diversification and competitiveness while increasing the quality of life of rural inhabitants represents, to varying degrees, a challenge for all OECD countries. But the recent series of Rural Policy Reviews suggests it is a challenge to which member countries are responding positively. Reviews have been conducted for Finland, Germany, Italy, Mexico, The Netherlands, Scotland and Spain. Reviews are underway in the province of Quebec in Canada and England. In addition, a review has been completed for China and one is planned to start in South Africa.

Box 2.16. **The New Rural Paradigm: summary of the main findings from OECD work**

After more than a decade of analysis of rural conditions in member countries and considerable discussion of rural policy strategies the OECD released a New Rural Paradigm (NRP) document in 2004. The strategy provides a broad conceptual approach for the design of rural policy in member countries. It suggests that rural regions can play a vital role in national development even in the modern global economy, but only if policies are revamped to foster growth. In particular, the NRP argues for a shift from a policy framework that was largely developed in the post World War II era to one that reflects conditions in the twenty-first century. Typical rural policies in OECD countries focused on national strategies for modernising agriculture and subsidising the provision of public services to rural areas. This top-down entitlement approach provided little incentive for proactive behaviour by rural people and their local governments and not surprisingly the results were often disappointing. By contrast, the NRP advocates a greater degree of local responsibility for designing region-specific development strategies and an "investment approach" by national governments that provides support to these locally-based strategies. This approach builds on the success of nationally funded locally based organisations, such as LEADER in the European Union and Community Futures in Canada, that have demonstrated the power of bottom-up development policy.

Source: OECD (2006), *The New Rural Paradigm: Policies and Governance*, OECD Publishing, Paris.

These reviews show that, while there has been considerable progress in moving rural policy away from an exclusive focus on agriculture in many countries, it often remains largely linked to that sector. This reflects a combination of factors: persistent, strong, national, financial support for agriculture as a sector; the tendency for ministries of agriculture to also have lead responsibility for rural policy; limited interest by other ministries in rural issues; and, in Europe, the dominant role of the CAP in EU programmes.

Those member countries which have been reviewed are also steadily reducing the dominant role of national governments in defining local development strategies. National governments continue to play lead roles in providing funding and establishing broad parameters for acceptable activity but there is an increasing recognition that each rural region has to define its own unique approach reflecting its particular competencies and opportunities. One way that rural areas are encouraged to act locally is through national support for multi-community development organisations, such as LEADER in the European Union countries, Community Futures in Canada, Regionen Activ in Germany and PRODER in Spain. These organisations all provide a vehicle for creating local development strategies and funding to implement them. Evaluations of the various organisations uniformly find that these approaches are effective in improving rural areas.

Finally, the reviews have identified an emerging issue in virtually all OECD. This is a new focus on the interaction between rural and urban policy at the urban-rural fringe. Much of the discussion is framed by urban efforts to restrict the pace of suburban development to preserve access to green space and to avoid the costs of providing new public services. Clearly, developed land has greater value than farmland in almost all circumstances and conversion generally increases aggregate social welfare. The main issues from a rural perspective are the incidence of benefits and costs from either allowing or prohibiting farmland conversion. This is particularly important because rural interests typically play only a minor role in these decisions. Prohibitions on conversion reduce rural property values and allow the urban population to obtain access to green space at low cost. If conversion is allowed there is a loss of the public good of green space, and how the windfall gains from conversion are shared becomes an important policy issue.

Countries in markedly different situations including the Netherlands and England, where the majority of rural land is found in predominantly urban areas, and Australia and Canada, which are both highly urbanised societies despite their large land base, share this concern over effective management of rural land conversion. Policies in the different countries reflect differences in land tenure rules, the relative responsibility of national and local government for land use planning and management, and different cultural values regarding public access to private property.

In essence, very different development trajectories are appearing in rural regions. The main drivers of this process are the same as those that are driving economic transformation in the OECD in general, namely globalisation, technological change, demographic shifts and the reorganisation of production and work. For example, in rural regions, where accessibility has always been a key impediment to growth, decreases in transport and communications costs are having a major impact. The time-savings from faster transport and better communications are important for both enterprises and individuals. Rural regions with the right mix of endowments can now be both attractive as residential locations and competitive as locations for enterprises in established and new industrial and service sectors.

The examples of France and Canada are particularly illustrative in this regard (see Box 2.17).

This heterogeneity has led to a different approach to rural policy. Broadly speaking, the positive signs coming from some rural regions suggest that policy should be less "defensive", *i.e.* focused on limiting decline, and concentrate more on seizing new opportunities. Moreover, they also suggest that policy needs to differentiate among rural regions with respect to their problems and potential, rather than assuming decline and

limited potential in most, if not all, rural areas. An influential report on rural policy in France by the DATAR (now DIACT), for example, emphasised that rural policy should be capable of responding to two needs – continuing support for the most vulnerable regions and new approaches to building on the endogenous/emerging potential of the other regions. This finding is uniformly supported by the various rural reviews.

Box 2.17. **Diversity in rural performance: France and Canada**

In France,long-standing fatalism about the future of France's rural regions has, to some extent, been replaced by cautious optimism. For the first time in a century, more than half of France's rural municipalities experienced a net growth in population over the period 1990-99 and this trend appears to have consolidated since then. Despite a worsening natural balance (163 000 more deaths than births), this deficit was more than offset by strong inward migration (410 000 new residents). Even the regions classified by INSEE as isolated had for the first time a net demographic increase. Moreover, despite a continuing decline in agricultural employment, rural regions experienced net employment growth over the same period, with strong growth in service employment and stable industrial employment. It is evident that regions where traditional agriculture or traditional manufacturing industries predominate and where the population density has declined significantly face the most pressing problems. At the same time, other types of region, including those with strong manufacturing sectors (agro-food, but also other sectors), tourism industries or significant new populations, are faring well.

In Canada, manufacturing is moving to rural regions close to metropolitan areas. Even though the value of agricultural exports continues to decline, manufacturing remains an exportable sector for predominantly rural regions (Freshwater, 2003). It is interesting to note that in the 1990s, across all predominantly rural regions in the OECD, employment in manufacturing grew by 0.5% per year whereas in intermediate and predominantly urban regions, manufacturing employment declined.

Source: OECD (2006), *Territorial Review of France*, OECD Publishing, Paris and OECD (2006), *The New Rural Paradigm: Policies and Governance*, OECD Publishing, Paris.

The issue is then how to review and reform policies so that they are more focused on seizing new opportunities in rural regions.

As a first principle, the need to differentiate policy is clear. Some forms of public policy are appropriate for large cities in promoting diverse knowledge-based activities and addressing congestion costs. Conversely, other policies are appropriate for rural areas to facilitate the adoption of new technologies and reduce the burden of low density. These differentiated policies can help smaller places, as well as rural areas, to better exploit their own development potential. Distinctive advantages related to higher quality of life and the existence of various natural and cultural amenities have fostered a movement from large cities to rural areas in some countries, *e.g.* in France and the UK, or from rural to rural areas *e.g.* in China. In a number of OECD countries more people would prefer to live in the countryside than in an urban setting. In response, some smaller places have been able to exploit niche markets and offer a more attractive living environment than congested urban agglomerations. Diversification of the rural economy is positively correlated with population growth, higher income and employment growth across OECD countries, which suggests it is an important avenue to raise the use of resources in rural regions and foster regional development.

Fostering economic growth is a clear priority for rural areas. Without locally generated income and employment, rural people and communities can only survive if they receive transfer payments. A key part of the New Rural Paradigm is a reduction in subsidies, but there must be a consequent increase in self-sufficiency. An important policy area will be ensuring that rural firms have appropriate access to financial capital, access to the innovations that are generated in urban areas and access to labour-force development programmes that can increase the skill level of workers.

Another priority policy area is sustainability. Rural areas play a major role in environmental sustainability since the people in rural areas manage the majority of the natural environment in each country. In many cases, individual farmers, forest owners and owners of other forms of rural property are asked to provide stewardship functions that are pure public goods. In most cases, they are not fully compensated for these functions and they are often constrained in their private decisions by society's desire for specific levels of these public goods. Finding better ways to reconcile the economic aspirations of rural residents and broader social desires for environmental preservation is a crucial task for rural policy.

A further issue is the role of policies to address climate change. Most of the policies proposed to reduce emissions or reduce energy consumption have a disproportionate impact on rural residents. For example, high fuel taxes adopted in some member countries to reduce the use of cars and encourage the use of public transit place a much larger burden on rural residents who already face longer commutes to work and who typically have few or no public transport options. Similarly, efforts to reduce emissions have large implications for quintessentially rural industries such as agriculture, ore extraction and refining and energy production. While it can be argued that negative externalities associated with these industries should be limited, it is also the case that the costs of control will largely fall on rural people while the benefits will accrue to all of society.

Public service delivery in rural areas is a final key policy area. Most public policies are merit goods, so there is a social benefit if all citizens have access to them. But in rural areas service delivery for even basic public services such as education, health care, electricity and transport is complicated by low density, low volume and long distances. This makes the unit cost of service delivery higher in rural areas than in urban areas. In some countries there is a national right to equal access for all services and in these countries there is great pressure to find ways to reduce the cost of providing rural services. In other countries where there is no right to receive services, there is a tendency to reduce the level of services available in rural areas.

Innovative ways to deliver rural public services have been found in most OECD countries, allowing rural people to receive basic services in more cost-effective ways and to take advantage of additional services that improve both the quality of life and directly contribute to the economic competitiveness of the regions (see Box 2.18.). In particular, ICT services in rural areas both provide connectivity to the rest of the world and act as a delivery platform for other services, such as health care, education and worker training.

While individual policies serve specific functions it is also important for governments to recognise the importance of policy coherence. There is a growing recognition that the various elements of rural policy, and indeed some national policies, need to be connected, or joined up, so they reinforce each other rather than conflict. In order to overcome accessibility limits while valorising place-specific assets, individual rural policies

typically need to cut across several policy streams, including transport and ICT, public service delivery, and SME development.

Transport investment in rural areas often requires more sophisticated assessments than traditional cost-benefit analysis, which tends to focus on the direct user benefit, and needs to avoid excessively thin and broad coverage which might increase maintenance needs and reduce overall returns on investment with only limited impact on development.

The diffusion of ICT and particularly broadband access has generally yielded positive results as it is not confined to one sector (*e.g.* in France and Spain).

Public service delivery in rural areas faces traditional challenges in terms of critical mass and accessibility but represents a key factor to help embed new migration and seize development opportunities. Innovative solutions successfully tried in OECD countries have ranged from multi-purpose one-stop shops (*e.g.* Citizen Service Offices in Finland) to increased use of ICT (*e.g.* telemedicine in Norway).

SME development in rural tourism has also been encouraged through active collaboration between public and private sectors to promote amenity markets (*e.g.* the Bregenzerwald "cheese route" in Austria, rural museum networks in Sienna, Italy), specialised brokering, networking and business support services (*e.g.* the "Fusion" programme in Scotland), and credit guarantee or micro-credit mechanisms (*e.g. Cajas de Ahorro* in Spain). Upstream investment needs to focus on enhancing both supply and demand of education in rural areas (*e.g.* tele-education facilities in Norway, improved rural school bus routes in Australia, teacher-parent partnerships in Canada).

Given the lack of institutional mass frequently found in sparsely populated regions, effective investment for rural development requires particularly flexible mechanisms to provide joint resources and integrate local social capital into the policy-making process. Municipalities can pool resources together by signing inter-municipal agreements, for example through the creation of voluntary micro-regions in charge of joint public service delivery and economic development initiatives (*e.g.* Czech Republic, Hungary). Municipalities also find valuable partners in local development associations, social enterprises and non-profit organisations. Central governments could easily make more use of well proven initiatives, such as LEADER and Community Futures, that support community-based initiatives based on local knowledge. This has been the case in some countries (*e.g.* "On the Ground" programme and Community Development Trusts in Scotland) but most countries still provide vary limited funding for this type of activity.

The rural development strategies being introduced by member governments are, therefore, based on a cross-sector and global approach to the rural economy and take into account the interdependence of its components and the diversity of its structures. The recent trend to integrate sectoral action plans into more general territorial plans means that rural development is now viewed in most countries as being spatially oriented and a cross-sectoral policy area, taking into account such issues as efficient and well-targeted agricultural policies, active labour market policies, the creation of new market opportunities, alternative uses of land (both within and outside agriculture), protection of the environment and improvement of the quality of life, the provision of services and infrastructures, and the need to address human capital issues.

Box 2.18. **Public service delivery in rural areas: summary of OECD research findings**

Remoteness, low density, and adverse demographic trends - such as declining numbers, an ageing population and increasing relative poverty, - are the main challenges for public services whether provided by the public sector, volunteer groups, or by for-profit providers. Public service delivery issues in rural areas include:

- Making services accessible and equitable.
- Financing public services.
- Making public services sustainable.

Mechanisms for addressing challenges

OECD member countries have implemented several mechanisms to overcome these challenges in rural areas. Although the examples reviewed are linked to particular services, some could be transferable. Nevertheless, some services continue to be provided by traditional modes, as access remains dependent on physical proximity. OECD member countries have innovated to improve the delivery of public services in rural territories in the following ways:

- By modifying local administrative or service delivery boundaries.
- By moving users to services or bringing services to users.
- By facilitating access to a wider range of services through ICT and shared professional responsibilities models.
- Through community-based delivery schemes.
- By adopting market-based service delivery in some rural areas.
- By improving co-ordination across levels of government for more efficient resource allocation.

A territorial strategy for rural service delivery

Public services contribute to social welfare and economic development in four main ways. They provide a platform for economic development, enhance human capital, bolster social cohesion and strengthen network economies. Rural service delivery requires finding an appropriate balance among the four functions of public services. The relative importance of these functions may vary among a country's rural territories and this will help determine how the service delivery system functions. However, the emerging interest in fostering locally based economic development supported by sound investments in firms, people and institutions, as described in the OECD's New Rural Paradigm (OECD, 2006b), emphasises the growing importance of addressing the role of public services as a platform for economic development.

A territorially sensitive, public-service delivery strategy needs to be structured. OECD countries face the challenge of finding efficient ways to deliver public services to their rural areas, while simultaneously refocusing these services to enhance economic competitiveness. It is important not to lose sight of the other functions of public services in the course of this reorganisation. Limited budgets challenge all governments and there may be a tension between addressing citizen entitlements and expectations while expanding the local economy.

Flexible governance schemes that can be adapted to different locations can allow for innovation in the provision of public services and address concerns about the viability of some rural areas. Differences between rural areas and in their populations' needs and preferences call for differences in the conditions under which public services are made available and thus for a mix of more innovative policies and public service arrangements adapted to regional needs.

Source: OECD Territorial Reviews and GOV/TDPC/RUR/RD(2008)5.

"Greening" urban growth policies

Cities are home to more than half the people living in OECD countries and almost 50% of the output and jobs of many nations can be found in their largest city. Successful cities attract talented, young, highly-skilled workers, are centres of innovation and entrepreneurship and are competitive locations for global and regional headquarters. The proximity of universities to research and production facilities means cities are where new products are developed and commercialised. More than 80% of patents are filed in cities. As mentioned in Chapter 1, the concentration of economic activities in urban areas occurs mainly because of benefits associated with economies of agglomeration generated by the proximity of firms and talents. But these benefits are not unlimited: large cities, with more than 6-7 million people, tend to outgrow the economies of scale. Urban concentration can also generate negative externalities. Though cities often have higher economic growth, foreign investment and labour productivity than the rest of the country, they are also more polluted, crime-ridden and socially disparate. Some cities, like Berlin, Lille, Naples, and Pittsburgh, can also falter, performing below the national average for income, productivity, skills, and employment. In this context, national urban policies are often necessary to foster or preserve the benefits of agglomeration and to address the negative externalities of urbanisation.

Urban policy faces a number of specific challenges. These challenges relate very closely to those that animate discussion of regional policy's new paradigm. However, they are also specific to the urban context as well. For example, they relate directly to questions of equity vs. efficiency (particularly in a context where cities, even the most successful ones, host large pockets of poverty, unemployment and deprived neighbourhoods); they also relate to questions of how competitiveness policies can promote competition among places without generating harmful or market-distorting fiscal competition; and to the need to determine clear roles for different levels of government and to co-ordinate among them. Given the scale of energy use and CO2 emissions in cities (60% to 80% of total national emissions), urban policy is also at the forefront of some of the new issues that are emerging in the regional policy domain, notably climate change and sustainable development. In this respect, urban policy in OECD countries has a new momentum and the responses of urban policy to such key challenges as those listed below are crucial to the evolution of regional policies in general.

Before addressing the main emerging trends in urban policy, it is important to recall some basics about the concept. This transcends narrow definition as nearly all public policies directly or indirectly affect urban development. Central governments have a large impact on urban living conditions through a variety of policies, programmes and projects implemented by a wide range of national ministerial departments and agencies. At the most basic level, national governments directly contribute to the operating budgets of metropolitan areas. National programmes affect cities in myriad ways: national housing programmes often determine density, patterns of urban growth, and the efficiency of energy use; national support of transportation infrastructure may change the built environment and accessibility of entire cities and neighbourhoods; and a nation's investment in education and local R&D facilities can greatly improve the environment for innovation and entrepreneurship. While particular programmes channel funds directly to cities, a national government may also support regional programmes, where it becomes difficult to disentangle rural and urban impacts. This is particularly challenging when urban policy also applies to very small towns in rural locations.

Besides, urban policy objectives differ across countries. They are contingent on the specific challenges facing cities; for example, the approach used for cities undergoing industrial restructuring will differ from that used for high-growth cities. Some countries, such as the United Kingdom, the United States and France, are facing more serious spatial segregation issues in their cities than in Nordic countries, and their policies need to target specific neighbourhoods. The importance of urban development also varies across countries due to different urbanisation rates in OECD countries, ranging from over 90% (Iceland, Luxembourg, the Netherlands, Australia, United Kingdom) to less than 60% (Finland and Ireland).

Urban policy must take into account different levels of political centralisation between federal and national governments. In federal countries, intermediate levels of government, whose responsibilities are comparable to the national government of unitary countries, tend to be in charge of urban development. However, there is a growing interest in urban issues on the part of federal governments, for example in Canada, the federal government created a Secretariat for Cities under the aegis of the Prime Minister (later merged within Infrastructure Canada); in Switzerland, the Confederation inaugurated a policy for agglomerations (OECD, 2002); and the central government of Spain passed legislation that confers a special regime on large metropolitan areas. In more decentralised countries, the national government has often restructured its administrative and technical machinery at the sub-national level. For example, some national administrations have reorganised authorities into metropolitan regions, supra-municipal authorities to which certain powers (mandatory and optional) have been transferred. In other circumstances, national-level reforms are less explicit and are limited to subsidising existing regional councils and infrastructure projects.

Last but not least, many policies that are not seen as constituting urban policy have considerable differential effects on different locations, favouring development in some areas rather than others. Some of these are clearly spatial, such as the location of airports or major research institutes, but may not always be seen as affecting cities as such. Others are only implicitly spatial, though the impact on cities and their economies can be very strong. These could be regulatory decisions that advance or hinder specific economic sectors, which are located in some areas rather than others; constitutional arrangements that bring political prominence to some areas rather than others, for example under schemes of devolution, or through the geographical basis of governing majorities. It is important for the success of urban policy that these "implicitly urban" policies are recognised as such.

Comparative analysis of national urban policies among countries is difficult for these reasons yet OECD studies conducted at national and urban levels have identified two key emerging trends:

The first trend is that regional and urban development policies increasingly endorse a more pragmatic approach to the concept of balanced territorial development which will benefit urban regions. For a while, many national governments have tended to perceive excessive urban concentration as negative. The main argument was that the impact on the overall development of a national economy of such concentration of population and output in metro-regions was negative because it drained skills, capital and physical resources from other regions, compromising balanced territorial development. Moreover, the fact that this high concentration was generating a number of negative externalities gave more legitimacy for taking action. Based on this argument, many OECD countries have implemented (and are still implementing) specific policies to restrict the

development of their largest metropolitan areas. These include France, the Netherlands, the United Kingdom and Korea (2.19). Policies include both incentive or deterrent measures to contain the development of large cities such as: specific regulations and taxes (new or higher taxes) to set up new offices (France, United Kingdom, Korea), direct subsidies for the relocation of firms to other areas (United Kingdom), restrictions on housing supply (the Netherlands), or relocation of public functions and universities (France, Korea).

Box 2.19. **Controlling the growth of large metro regions: examples from OECD countries**

In the Netherlands, the Randstad is above all a spatial planning concept that was born shortly after the Second World War and refers to the position of a belt of cities (in particular the four large cities of Amsterdam, Rotterdam, The Hague and Utrecht) encircling a green open area named the Green Heart in the western part of the Netherlands. National spatial development policies have in recent decades switched back and forth between promoting and discouraging the development of the Randstad into a metropolitan region. Repeatedly, fears of the Randstad growing together into one amorphous metropolis have led to policy initiatives to limit expansion of the large cities and urban sprawl around them. Until the 1990s the consequences were that within the Randstad, planning policies focused on the preservation of the green heart, seen as a key asset for the region, and the restriction in housing policy; policies were focused on dispersing growth towards more peripheral regions in the North and the East of the Netherlands. In reality, however, population growth continued to be concentrated in the Randstad and led to urban sprawl. Despite explicit policies to concentrate population growth in designated areas and to keep the Green Heart unaffected by urban construction, the whole area has gradually become more urbanised, including the Green Heart.

In Korea, since at least the 1964 enactment of "Special Measures for the Restriction of Population Growth in Seoul", there have been efforts to control the growth of Seoul and the greater capital region in order to ensure balanced national development. These efforts include the relocation of government offices outside of Seoul, the relocation of university branches outside Seoul and financial incentives to relocate firms and regulations to curb the expansion of industrial establishments and academic institutions in Seoul. The nature of the policies has changed numerous times over the years as various measures proved ineffective and encountered criticism that curbing the growth of Seoul was undermining Korea's competitiveness on the international stage. Even so, there are many indirect, economic disincentives to locating in Seoul. For example, the Capital Region Readjustment Planning Act (1982) divides the area into three main categories: congestion restraint zones, growth management zones and nature conservation zones. Depending on the category, the central government prohibits or controls the construction of new factories and buildings, levies over-concentration taxes, and bans or administers the creation of new universities (except for smaller and vocational colleges). In addition, the registration tax is five times higher in Seoul than in the rest of the country because of the Capital Region Planning Law.

Source: OECD (2007), *OECD Territorial Review of Randstad* and OECD (2005) *OECD Territorial Review of Seoul,* OECD Publishing, Paris.

This debate over urban concentration is linked to the opposition of urban (including the largest cities) and rural regions. National governments in OECD countries have for a while contrasted "rich urban regions" with "lagging rural regions" so that distribution of funds for regional development policies went mainly to what used to be classified as "rural". OECD analysis of regional trends has shown that this generalisation was

unfounded, as rural areas were not synonymous with decline while there were a number of declining urban regions which were systematically lagging for a number of indicators. Moreover, focusing only on lagging regions, and thus in effect excluding champion urban areas, did not produce a positive outcome. It did not solve the issue of concentration nor help to meet the balanced territorial development objectives because champion urban areas have in many cases continued to attract people and firms, but with increasing difficulties in facing the challenges of global competition and the associated social, economic and environmental costs. It is interesting to note that the acceleration of the urbanisation process in China, the country which counts the highest number of urban dwellers in the world today, has occurred despite a successive implementation of anti-urban policy measures from the central government. The Chinese government's approach to urban policy has changed over the years. Economic development of rural areas is a priority, but the central government understands that the prosperity of different types of regions is closely interlinked, and therefore the government is paying greater attention to the development of cities, including that of the major urban clusters (Pearl River Delta, Yangtze River Delta and Pan Bohai Metro region) that were, for the first time, explicitly mentioned in the last Five Year Development Plan.[6]

Several factors are forcing national governments to rethink their policy approaches to urban areas. First, as mentioned previously, countries have now endorsed the idea that economic performance depends on their capacity to maintain the competitiveness of their urban regions. The role of large cities in the international marketplace has clearly had an impact on the way national governments perceive high urban concentration. The process of establishing or reinforcing urban areas as a preferred location for advanced economic activities, while in many cases stemming from market forces, has quickly become a major field for public policy. Moreover, the negative externalities mentioned previously tend to worsen over time so that national governments are increasingly concerned with taking a more active role in such issues as maintaining and developing infrastructure, social cohesion, distressed areas, crime and so on.

In this context, countries that previously oriented their regional development policies towards the objective of balanced territorial development are now adopting a more pragmatic approach which takes into account the role of their champion cities. In France, for instance, concerns have been expressed about the competitive position of the Paris metro-region on a global scale. The Territorial Review of France (OECD, 2006a) highlighted the fact that the region recently fell behind its major EU competitors in innovation capacity and competitiveness, partly because of the decision to relocate some public research centres outside the region. Since the 1960s, France has implemented a succession of redeployment policies towards other urban poles of growth to meet its objective of more balanced territorial development. These policies have led to the emergence of eight major provincial – although not global – metropolitan areas (Toulouse, Lille, Nancy, Strasbourg, Lyon, Nantes, Bordeaux and Marseille), to the detriment of Paris as the unique global city of the country and the unique international competitor. Recently, however, the ministry for the capital region was given the mandate to come up with a strategy to enhance the city's international competitiveness. In a similar vein, the Randstad-Holland region has also been endowed with a national ministry, while the national government focuses mainly on sustaining other regions.

In Nordic countries, such as Finland or Sweden, which are dominated by one single metropolitan area and a large number of smaller urban regions (also called city-regions), national governments are just beginning to develop differentiated urban policy approaches to preserve the growth capacity of their champion cities while enhancing the

development of a number of subsidiary urban poles. In 1994, Finland introduced a specific urban policy to foster the innovation and growth of its eight largest city-regions (excluding Helsinki), initially called the centre of expertise programme (CoE), and restructured in 2001 under the name Regional Centres Programmes (RCP). This policy had a regional focus, with balanced territorial development as a key objective. It also recognised that a certain degree of concentration was needed to reach a minimum critical mass, and included as a main objective for the allocation of funds more collaboration (and thus economic integration) between a core city and its neighbouring municipalities (OECD, 2005b)). Meanwhile, a policy package has been prepared for the major urban regions, including Helsinki. In Sweden which, like Finland, was focused only on regional equity objectives, the national government has paid greater attention to Stockholm since the start of the decade, supporting the initiative to foster the integration of the larger Stockholm Malar region through public infrastructure investment, social support in distressed areas (metropolitan policy) and a well designed regional innovation policy strategy (OECD, 2006c). German spatial planning policy also sought to link the eleven most developed "European metropolitan regions" (*europäische Metropolregionen*) with smaller centres, for example through secondary road.

The second main trend is that national urban policies are becoming more proactive and forward looking. In the past, urban policies have tended to be remedial. Remedying the decline of industrial cities and managing issues of decay, crime and social welfare were often synonymous with the term "urban policy" in the 1980s and even the 1990s. Today, urban development policies in most member states are no longer solely preoccupied with the regeneration of declining areas but with programmes for creating large urban spaces capable of being creatiuve hubs and competing in the most innovative and dynamic sectors of the global economy (see Box 2.20). Such policies are resulting in forward-looking programmes to provide the high-quality urban infrastructure demanded by highly mobile firms in the most innovative and dynamic sectors, and their associated highly skilled work forces. The change in approach has not occurred because the negative issues associated with declining urban structures and aggregations of social problems in large cities have been resolved. On the contrary, these issues continue to loom large among those addressed by urban development policies. However, a number of governments, including those of Japan, Germany, Finland and Norway have recently reoriented their national spatial strategies in order to come to terms with the changing geography of economic dynamism. For example, Japan abolished the Industrial Allocation Promotion Law in 2006 and abolished subsidies for factories moving out of metropolitan areas. It also deregulated the relocation of universities and factories into metropolitan areas. They are developing national policy for regional innovation systems in metropolitan areas, building universities as strategic hubs and launching major infrastructural projects.

While there are successful examples of urban policy approaches that manage to preserve the growth capacity of their champion cities while enhancing the development of a number of subsidiary urban poles (such as the Finnish policy mentioned above), governments are often forced to make tough choices and identify priorities. Urban policy must avoid wasting resources by trying to help cities continue growing long after they have become uneconomic, or by supporting the expansion of particular economic activities that are not guided by market signals. For example, there is room for doubt over the viability of heavy subsidies to attract FDI or to build science facilities in Newcastle in the absence of prior experience or local entrepreneurial base. Lack of links between firms and universities can also hamper the development of effective cluster policies, even in

wealthy cities (such as Milan and Madrid). Some OECD countries have therefore identified scope for better targeted action in support of firms' existing market-based strategies (*e.g.* the emphasis on SMEs in Japan's new approach to innovation policy, or the building up of universities as strategic hubs in the Danish-Swedish region of Öresund).

Box 2.20. **Competitive Cities in a Global Economy: Summary of main findings from OECD work on cities**

Competitive Cities in a Global Economy argues that there is no 'one size fits all' policy for cities. But the report makes recommendations that can be tailored to meet specific needs. These include:

- A flexible, strategic vision is necessary to foster competitiveness, ensure a diversified range of interdependent ventures, and information and transportation links between universities, researchers, technicians, and manufacturers.
- Liveable cities with high-quality infrastructure, green spaces, inner city residential areas and public projects can contribute to economic success, attracting foreign investors as well as highly qualified professionals and tourists.
- Effective governance of cities depends on leadership from the national government to encourage reform, formal government at the metro-regional level, and lower-level local networks including non-governmental actors, associations and businesses which can deal with social tensions and understand market realities.
- To balance the financial needs of cities with those of the rest of the country, cities can diversify tax revenues with "smart taxes" such as congestion charges and use public-private partnerships to raise money for public projects. Equalisation payments between metropolitan regions can be effective, but national equalisation schemes to redistribute resources from richer to poorer regions sometimes disregard the higher spending needs of cities and act as a disincentive to poorer regions to increase tax revenues.

Source: OECD (2006), *Competitive Cities in the Global Economy,* OECD Publishing, Paris.

While urban policies are becoming more proactive and forward looking, national governments cannot overlook the negative externalities associated with urban concentration (pollution, declining infrastructure, social distress, crime and inequalities). Ensuring a clean and attractive urban environment is increasingly recognised as an integral part of the creation of dynamic cities rather than a consequence of it. There are limits to how dynamic a city can be with increasing traffic congestion and pollution. The introduction of a congestion charge has generally been perceived as an effective measure to limit traffic and improve the use of public transportation (*e.g.* London). While policies aimed at distressed neighbourhoods have produced mixed outcomes, there are some successful examples of urban regeneration policies (*e.g.* Bilbao, Kitakyushu, and Glasgow) which have led to the development of tourism and creative industries. Some metropolises that experienced massive urban sprawl have, at times, resorted to revolutionary measures with spectacular results (*e.g.* converting a motorway into a watercourse as part of the Cheonggyecheon project in Seoul).

Urban development is by nature multi-sectoral and the integration of different policy sectors remains largely underdeveloped. National policies have tended to follow a sectoral approach to urban development. When urban policies included economic development objectives, such as developing regional innovation systems, building major infrastructure, or addressing the lack of employment in specific areas, they tended to be addressed in isolation. Yet it is becoming increasingly apparent that the different underlying objectives of urban development cannot be pursued in isolation. In light of the experiences of the major OECD agglomerations, it seems that economic growth at the metropolitan level depends on economic interdependencies as well as other factors such as social cohesion and the physical environment. Areas which are isolated from the economy and labour market of the metropolitan region are hindering the competitiveness of the region as a whole and compromising the achievement of collective goals. Competitiveness is only one contributing factor to improving quality of life and social cohesion; however without a competitive urban economy it is difficult to raise living standards and improve the environment.

More generally, there is no obvious distinction between spatial policies specific to cities or metropolitan regions and sectoral policies. Housing, transport, local development, environment or economic infrastructure policies all have an impact on urban areas, even when they do not explicitly target urban areas. Therefore, any urban policy ought logically to incorporate these different dimensions. One of the OECD's recommendations regarding urban development is to develop a multi-sectoral policy avoiding duplication across different sectors' policies and taking into account the possible interdependencies between them. This is very difficult in practice, and is therefore one of the main challenges for governments. To achieve this objective, governments must identify those national sectoral policies which are not explicitly included in a defined urban policy and which have an impact on cities.

Finally, effective governance can help to foster an integrated and multi-sectoral approach to urban development. National urban policies cannot be conducted in isolation from sub-national existing planning frameworks and policies. Multi-level contractual arrangements are useful instruments as they force a better alignment between the cities' own development strategies (by nature, more multi-sectoral) and national urban policies (*e.g.* the Vancouver Agreement combined federal, provincial and municipal programmes to finance projects related to economic and social revitalisation in 2000 and 2005). Implementing such collaborative mechanisms at the scale of a functional urban area can help to address the issues of horizontal collaboration between local jurisdictions, identified as one of the main obstacles for effective policy implementation for urban development (OECD, 2006d). In Canada, this tripartite agreement has been implemented on a scale which includes the Greater Vancouver area. Similarly, the French agglomeration and metropolitan contracts involves sub-national actors at a larger scale than the centre city administration. National urban policy can also play a key role in promoting urban and metropolitan governance for instance through fiscal incentive mechanisms for horizontal collaboration.

Better harnessing rural-urban linkages

The economic importance of strengthening the functional linkages between rural regions and cities is now widely recognised. The issue is broad – covering issues such as accessibility and its influence on enterprise performance, equity and access to public services, environmental protection and the link between those who preserve amenities

and those that consume them, as well as issues of territorial and social cohesion. This increasing inter-dependence of urban and rural regions has several origins, including for example:

- *The diminishing share of agriculture in the economy of many rural areas*: This may lead to the development of other activities such as tourism for city dwellers and the introduction of tertiary activities in rural towns, thereby modifying their socio-economic profile. Outmigration and ageing, consequences of the reduction of agricultural employment can thus be counter-balanced to a certain extent by these positive developments, witnessed in an increasing number of rural areas.
- *The expansion of urban areas into rural hinterlands*: This creates mixed-use areas which are hard to define as either urban or rural. This land is often under significant development pressures which tend to compete with agricultural and horticultural activity.
- *Improved access to rural areas:* Substantial investments in transport infrastructures such as new rapid transport technologies, deregulation of air travel and low-cost flights to regional airports in rural areas, and the extension of ICT networks, are making hitherto inaccessible rural regions with lower-cost housing accessible to newcomers.
- *Lifestyle changes*: The high cost of housing in major cities is fuelling a trend towards cheaper homes in rural areas and increased daily commuting over considerable distances, leading to large "functional urban regions" which also encompass lower density/rural areas. At the same time, shorter working hours and more flexible working arrangements are inducing people to live part of the week, month or year, in the city, and part in the country, while tele-working (part-time and full-time) also allows people to live and work even in remote rural areas.
- Cities of all sizes exert a strong influence on their surrounding regions. In many cases, there are strong synergies in relationship between urban centres and surrounding. These appear particularly important where a large region is dominated by a single large urban centre, a so-called regional city or city-region. Employment opportunities and services such as banking, health care, education and training as well as shopping centres, cinemas and other cultural facilities are provided by the urban centre, while the rural regions possess lifestyle advantages are accessible to people working in the urban area and can also be residential locations for people wishing to commute (meaning that regional cities often have very large labour market areas).
- For a long time, these cities have been overshadowed by the demographic and economic expansion of capital cities and major metropolitan regions. Now, however, the importance of regional cities as sources of economic growth in their own right and as anchors for rural regions is becoming clear. The phenomenon of "counter-urbanisation", apparent in a number of OECD countries, suggests that in some cases regional cities can develop into important economic centres on the basis of good transport linkages such as regional airports, economic specialisation, greenfield development possibilities, dynamic entrepreneurial universities etc. The interest of policy makers in regional cities also stems from their ability to provide basic and some advanced services for large rural regions, which would otherwise be threatened by outmigration because of the lack of employment opportunities and low-quality public services. Strong regional

centres provide the principal means by which to offer the kind of social and economic infrastructures that can maintain population and retain and attract investment.

Policies can be divided into two types:

- Those that aim to link the city region to the rest of the country (*i.e.* an outward looking, competitiveness-based perspective).
- Those that seek to enhance the synergies between the urban and rural functions within the region (including the sense of a common regional identity).

A central question is how public goods and services can be provided in a cost-effective way to support development. This raises some important questions for policy makers at both national and local levels, for example:

- How should priorities be set for public investment to build rural-urban linkages? What is the role of private investment markets?
- Do local and regional policy makers have the capacity and tools to address conflict and competition in land usage?
- How can rural communities plan for and develop new economic activities that depend on inflows of visitors and new residents while at the same time modernising and protecting high-value agricultural activities?
- Does enhanced interaction between regional towns and the core urban areas represent a rural-urban linkage strategy?

In many cases, the issue of rural-urban linkages is complicated by the issue of how to guide development in such a way that the social benefits of rural regions are not destroyed by efforts to generate economic opportunities.

Often, the characteristics of rural assets as pure public goods mean that there are few direct incentives for private actors, or even public ones, to provide, maintain or invest in the supply of amenities because it is difficult to convert this investment into revenue for the investors. Nonetheless, these are clearly important assets for a region and can represent an important, and sometimes even the only, source of competitive advantage in some rural regions. Moreover, the valorisation of amenities is often the best incentive for their conservation. The central question is: how can policy makers "internalise" the externality benefits inherent in rural amenities so that providers have financial incentives to maintain and/or provide access to these amenities at a reasonable cost to the various users (both individual visitors and, in many cases, society as a whole). Two key elements in this process are estimating the value of (demand for) amenities and thereby setting prices and encouraging the creation of market or market-type mechanisms to transfer benefits.

Work on valuing amenities has its origins in efforts to quantify the multifunctional dimension of agriculture by separating amenity provision from commodity production functions, as well as in attempts to estimate the value of biodiversity and other ecological assets.[7] Recreational (use) value of rural amenities can be estimated using revealed (observed, actual) preference models that are relatively robust. However, the non-use values of rural amenities expressed by, for example, a willingness-to-pay for the preservation of biodiversity or agricultural landscapes have to be based on stated preference techniques, and are therefore more problematic. As such, the ability of policy makers to estimate the cost effectiveness of programmes that support amenities with

significant non-use values is limited, which partly explains why policies to develop markets or substitute markets for amenity goods are preferred.[8]

Instruments to ensure optimal provision of amenities can take several different forms: for example, creating direct amenity markets (paying for access, user fees); creating amenity-related commodity markets ("green" markets); the buying of resources by interest groups; incentives, taxes and subsidies to providers etc. There are two main types of policy that include market-oriented economic instruments: first, policies to stimulate co-ordination between supply and demand, and, second, instruments that provide regulatory or financial incentives or disincentives to act in a particular way.

Policies designed to stimulate direct co–ordination between amenity providers and beneficiaries, can work either through the market or through co-operation among agents acting collectively.

- *Support for enhancement of the commercial value of amenities:* The aim is to encourage commercial transactions between providers and beneficiaries of amenities with regard to either the amenities themselves or to related products. Targeted amenities are those which are potentially private goods (such as food products or crafts) so that the establishment of an amenity market is possible with certain assistance, such as the introduction of an institutional framework for amenity markets, support for the valorisation of rural enterprises, official certification on amenity value added products, etc.
- *Support for collective action:* The aim is to promote and support actions initiated and pursued by groups of agents with a view to adjusting amenity supply and demand. Targeted amenities are those which need collective action for the maintenance and/or valorisation by providers and beneficiaries.

The specific case of green belts around large cities illustrates how countries have tried to develop mixed use or complementary use areas, where rural and urban functions exist in close proximity. For example, the Randstad shows that it is possible for farming to be highly profitable in an urban environment, but, in the process, the commodity outputs of farming become separated from the provision of environmental services (see Box 2.21). Controlled-environment agriculture in glass-houses is profitable, but produces no amenities.

Box 2.21. **Rural-urban linkages – managing competing land uses in Canada and the Netherlands**

In Canada, land use is a provincial responsibility and each province has its own legislation, policies and programmes regarding land management and use. Ontario is the most populous province in Canada, and Toronto is by far the largest city, with a metropolitan population of 5.5 million in 2006. Moreover, the Greater Toronto Area (GTA) has grown to this level from 4.2 million in 1991. Prior to 1991, the GTA was not a defined administrative unit, but in 1971 the Toronto metro area had a population of 2.8 million, which suggests a GTA population of about 3 million. This means the population of the GTA has increased by roughly 50% in 25 years. The GTA is the main urban centre in a region known as the "Golden Horseshoe" that curls around the west end of Lake Ontario and has a population of about 8.1 million people, approximately one-quarter of the population of Canada.

The Greenbelt Protection Act in Ontario was created by the Ontario provincial government in 2005 to designate and limit development on a significant portion of rural land close to the Greater Toronto metropolitan region. The designated land consists of approximately 1.8 million acres with the potential for adding additional land. The Greenbelt includes lands that were designated for protection under the Niagara Escarpment Plan of 1973 and the Oak Ridges Moraine Conservation Plan of 2001. Additional land was added to these two areas to provide a continuous band around the largest urban concentration in Canada. Provisions of the Greenbelt Act require all other agencies to conform to its requirements for land that is protected by the Act.

The Greenbelt Plan, which was established under the Greenbelt Protection Act, was initiated to address the following issues:

- Urban sprawl: to keep development within specific urban boundaries and support infrastructure within those boundaries.
- Preserving agricultural land: prevent further encroachment of the urban shadow.
- Environmental protection: protection of wetlands, natural environment and natural resources.

The key objective of the Greenbelt Plan is to enhance the rural areas and the overall quality of life through agricultural protection; environmental protection; culture, recreation and tourism opportunities; support and sustain a vibrant rural community; support infrastructure; and recognise the benefits of protecting renewable and non-renewable resources.

The Netherlands has known a long tradition of land-use planning in which separation of urban and rural areas was a key concern. Zoning policy has been used to manage the spatial demands of opposing interests. This holds in particular for the demand for houses and business sites on the one hand, and agricultural land use on the other (Overbeek and Vader, 2006). The Randstad is the most urbanised part of the Netherlands. It contains the major cities of Amsterdam, Rotterdam, Utrecht, The Hague and Delft, as well as a number of satellite urban areas. These peri-urban areas are often embedded between several cities and are used for work and recreation not only by urban citizens that live closest, but also by citizens of several nearby cities. However, the Randstad is a major agricultural producer, especially for greenhouse agriculture, and has a significant dairy sector.

Dutch spatial policy established eight buffer zones in the region in 1958 as a way to control urban sprawl and maintain green space. While there has been continual pressure for urban expansion, there is still considerable amounts of green space for a large urban population.

A key factor to this success has been strong land-use controls accompanied by government purchase of land. On acquiring land, the government guarantees that its use will not be changed. This, combined with a comprehensive land plan that originates at the national level and is reinforced at the provincial and local level, ensures that development pressures are shifted away from land designated as green space.

Source: OECD (2007), OECD Territorial Review of Randstad, OECD Publishing, Paris.

Conclusion

Over the past few years, OECD countries have promoted a new paradigm of regional policy which should evolve from short-term subsidies into a much broader family of long-term development policies designed to enhance regional competitiveness. The rationale of the new regional approach is based on the principle that opportunities for growth exist in the entire territory, across all types of regions,

In the context of new regional development policies, governments are increasingly emphasising innovation as a crucial target for policy. Innovation is being redefined at national level, and local knowledge is refined to play a stronger role in shaping policies. Policy frameworks, governance arrangements and funding streams need to adapt. The national level should set a broad framework while the region takes advantage of local knowledge to better target policy action. A clear division of labour helps avoid duplication and improves outcomes. But not all regions can be leading innovation hubs. Some regions (not only rural but also some industrial and urban regions) perform poorly because of institutional problems, notably a lack of critical mass or no culture of networking that supports innovation. A focus on regional innovation systems helps mobilise assets and actors even in less advanced regions.

Despite economic and demographic challenges, rural regions need not be synonymous with decline. Distinctive advantages related to higher quality of life and the existence of various natural and cultural amenities have fostered a rural renaissance in some countries, as made visible in recent migration trends. Certain small and medium-sized settlements were able to seize niche markets as alternative sources of growth in the face of relative decline of agricultural employment. New rural policy aims at valorising under-used resources and promoting employment opportunities in rural economies while preserving the environment and adjusting to an ageing demographic structure.

The new paradigm also endorses a more pragmatic approach to urban development. While cities often serve as important engines of national growth, some of them perform below national average in almost all socioeconomic indicators. Ensuring a clean and attractive urban environment is increasingly recognised as an integral aspect of the creation of dynamic cities rather than merely offsetting their undesired consequences. Urban policy is therefore increasingly concerned with addressing the negative externalities of urbanisation and maximising economies of agglomeration by providing collective goods.

There is a growing recognition that rural and urban areas are more strongly interlinked than has been thought in the past. Rural areas in close proximity to urban areas provide a flow of environmental and recreational services to urban areas. In some countries, virtually the entire rural territory is within easy reach of urban residents who commute to work on a daily basis. Because of such economic connections, regional development strategies need to take into account the cascading effects of policy decisions that link rural and urban regions.

Notes

1. According to OECD estimates while at present there are four active people for each retired person in the OECD, this figure is projected to fall to around two to each retiree in 2050.

2. Mobility refers here only to the spatial component, but mobility also refers to sectors and job families.

3. See also OECD, Benchmarking of Science Industry Relationships, 2002.

4. The 1999 Industry Revitalization Law (also known as the "Japanese Bayh-Dole Act") reduced obstacles to collaboration between universities and private enterprises and also allowed private firms to acquire intellectual property rights from publicly-funded research. This has stimulated the growth of Technology Transfer Offices in Japan, of which there are now 37. See also: J. Rissanen and J. Viitanen, Report on Japanese Technology Licensing Offices and R&D Intellectual Property Right Issues, The Finnish Institute in Japan, 2001.

5. In the past, the effective impact of sectoral policies in terms of spatial planning was not monitored thoroughly.

6. The Pearl River Delta Metro region (or Pearl River Delta Economic Zone) covers nine prefecture level cities in Guangdong and is officially defined as including Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, parts of Huizhou (the urban district of Huizhou, Huidong County, and Boluo County), and parts of Zhaoqing (the urban district of Zhaoqing, Gaoyao and Sihui). The Yangtze River Delta Metro region covers Shanghai, eight cities in Jiangsu province (Taizhou, Zhenjiang, Changzhou, Wuxi, Nantong, Suizhou, Nanjing and Yangzhou), and seven cities in Zhejiang province (Jiaxing, Hangzhou, Ningbo, Shaoxing, Huzhou and Taizhou). The Pan Bohai Metro region covers Beijing, Tianjin and the Heibei province.

7. Valuation approaches have also come to the fore in efforts to quantify the environmental damage caused by oil spills for the purpose of determining costs to be borne by the polluter. Economic valuation is widely used in OECD countries as a way of assigning values (usually monetary) to goods that have no markets. Valuation methods are used to support or argue against projects and policy choices. The political relevance of the debate stems from the technical and ethical difficulties of assessing the value of non-market goods. This means that the validity of much of the information presented to or by governments, in defence of key arguments in domestic and international policy debates, is often contested. Economists have developed a variety of techniques to value non-market environmental and cultural amenities consistent with the valuation of marketed goods; *i.e.* based on individual preferences.

8. Even when the methodology may be sound, the fact that many estimates (particularly of non-use values) are based on hypothetical "contingent valuation" surveys means that the results cannot be taken too literally. There may be large differences between what people say they are willing to pay and what people will actually pay. To test this disparity, a willingness-to-pay mail survey was followed by an invoice requesting the sum that the respondent had claimed to be willing to pay. While many people paid, the discrepancy was nonetheless large.

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Chapter 3

Policy Implementation and Governance

Introduction and key policy messages

This chapter discusses the various approaches that national and sub-national governments have adopted to improve co-ordination among levels of government for supplying services and infrastructure tailored to the specific needs and opportunities of sub-national territories. The impact of economic downturn on sub-national governments and the national stimulus packages reflect an accurate illustration of this topic. The crisis is having a large negative impact on most sub-national governments' finances due a "scissor" effect: tax revenues falling sharply as a consequence of the fall in activity, while welfare expenditure soars. Regional authorities may consequently decide to reduce their investment spending. In order to avoid such a pro-cyclical behaviour, most national stimulus plans have a regional public investment support dimension. For this to be successfully implemented, effective co-ordination between levels of government is necessary. This chapter first examines the basic institutional and financial elements of sub-national authorities' mandates and resources. It then focuses on the use of specific instruments for co-ordination and capacity building in regional policy: contracts, collaboration between municipalities and the use of performance indicators.

Key Policy Messages

- Regional policy needs to be co-ordinated by an identifiable single "gatekeeper" at the national level.
- An effective use of knowledge in the policy-making process requires appropriate mechanisms for dialogue and co-ordination within and across levels of government, as well as across public and private spheres.
- Unified, co-financed, and multi-year funding for regional policy helps ensure the credibility and effectiveness of public investment.
- Monitoring and evaluation mechanisms need to be strengthened to ensure policy learning.

Regional development depends on efficient governance

The previous chapter analysed the forces that lead to disparities in regional income levels and growth, and the impact of policy choices on such disparities. It also emphasised that the focus of regional policies has moved from income redistribution (aiding the poorest regions) to regional development (enhancing economic performance and growth prospects in all regions, including the most advanced). The new focus on regional competitiveness means defining and implementing different regional strategies based on regional specific challenges and opportunities. The national ambition for regional policy is to ensure that different regional approaches contribute to national development and competitiveness.

As we have seen, regional competitiveness rests on networked production. Firms are thus more dependent on the local environment in which they are located. In order to develop and prosper, firms need to use all sorts of infrastructure, goods and services that can be considered as "local collective competition goods" (Crouch *et al*., (2001). This may involve relevant skills, access to information or access to a series of network infrastructures (transport, broadband etc.). These goods and services complement and specify the basic conditions for investment and development (OECD and Italian Ministry for Economic Development, 2007). Social cohesion is not incompatible with territorial competitiveness. On the contrary, regional strategies with economic, social and, increasingly, environmental ambitions are one of the strengths of regional policy. However, such strategies make implementation more challenging, and as such are strongly influenced by a variety of policy interdependencies.

Programmes of innovation, growth and cohesion can be more efficient if resources are pooled and information is shared. Collaboration (vertical and horizontal) between different government and non-government bodies exists in the great majority of countries. It brings about coherence and greater impact from public investments (more appropriate selection, funding and implementation monitoring). The key issue is the lack of co-ordination between different policies, as well as between their different providers and constituencies. Fragmented approaches mean that many countries face problems of overlapping or even conflicting policies, all aimed at having a regional impact. This fragmentation has consequences for the regional effectiveness of public policies, as well as for their national impact. The question is how to find a coherent and effective approach. Public organisations (sectoral ministries, levels of government, agencies etc.) find themselves in a situation of interdependence, where joint efforts are necessary to solve problems. This co-ordination may be required horizontally – between line ministries or between sub-national authorities – or vertically, between levels of government.

A necessary condition for implementing regional development policy is strong regional governance. Such governance supports the definition of regional strategy, the building of local networks, and the participation of all relevant stakeholders. The interpretation of what regional governance is and where its strengths lie, however, differs across OECD countries. Whatever the country, its unitary or federal constitution and the degree to which it is decentralised, central authorities continue to finance a large share of regional development programmes in order to ensure that they are cost effective and consistent with national and inter-regional goals, even if they do not enjoy all the legal powers necessary to do so. In order to implement these two complementary mandates at the regional and the national levels, collaboration and dialogue between levels of

government are necessary to redress the balance between two different types of asymmetries:

- financial: when fiscal gaps occur between resources raised in a place and the cost for financing mandated public services; and
- informational: the capacity of sub-national authorities both to define their own strategy for long-term development and to implement national policies for regions.

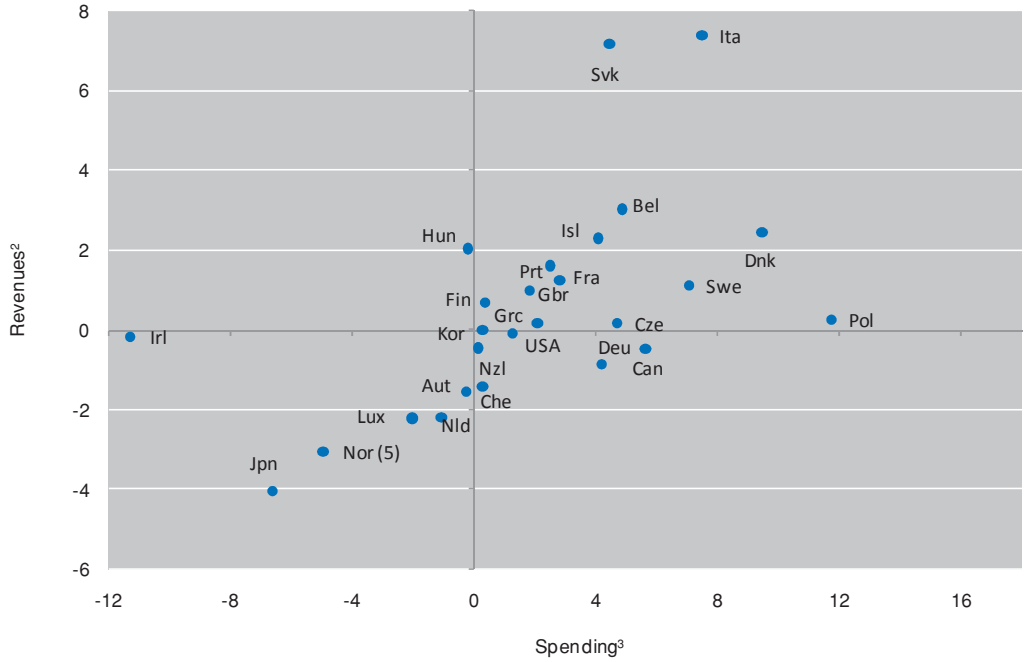
Even if regional and local actors are often in a better position than central government to design local solutions to local problems, central government remains a key partner for developing national strategies and supporting the creation of local capacity. The implementation of regional policy in a consistent way can, therefore, fill the "knowledge gaps" between central and sub-national levels of government. The efficient collation of relevant information is essential for creating a common frame of reference for regional policy.

Sub-national governments are playing an increasingly important role in public investment and expenditure, reflecting the increased devolution of responsibilities to the sub-national level. The rationale behind this is that such authorities are "closer to the ground" and are therefore better placed than the national authorities to decide where the priorities lie for optimal regional and local development programmes. However, it is precisely because they are closer to the ground that they are less able to take into account development strategies at the national level, creating the potential for conflict between regional and national policy goals. In addition, the transfer of responsibilities is comparatively recent in some countries, entailing the risk that some sub-national governments implement policies inefficiently. It is clear, therefore, that central governments have a role to play in supporting capacity building, in giving financial support, and for orienting local development policies so that positive spillovers benefit the rest of the country as much as possible.

There is a distinct trend towards greater decentralisation in many OECD countries. In the ten years between 1995 and 2006, the share of sub-national expenditure in total government expenditure grew from 31% to 33% (Figure 3.1). This increase in sub-national expenditures reflects both the allocation of new responsibilities to the sub-national level and increasing costs in local public service delivery. Across OECD countries, the transfer of competencies and revenues at sub-national level over the past three decades has addressed different considerations, including political/democratic (closeness to citizens) and economic and social (improved allocation of public services). An important dimension to keep in mind is that the degree of maturity of democratic institutions and administrative capacities are determinants for the success of decentralisation reforms (Box 3.1).

The increase in sub-national competencies has not decreased their dependence on central government for financial resources. Indeed, the increase in sub-national expenditures has often been covered by higher intergovernmental grants. The growth of transfer systems has tied central and sub-central fiscal policy and outcomes more closely together.

Figure 3.1. **Percentage change in share of sub-national expenditure in total government expenditure 1995-2006**



Note: Decentralisation is measured by the changes in the share of sub-national governments in total public revenues and spending. Or latest year available: 2005 for New Zealand.

1. Excluding transfers received from other levels of government.

2. Excluding transfers paid to other levels of government.

3. Or earliest year available: 1996 for Japan, Netherlands and Norway, 1997 for the Czech Republic, 1998 for Iceland; 2000 for Greece, Korea and Hungary.

Sources: OECD National Accounts database; Statistics Norway; Statistics Canada; US Bureau of Economic Analysis.

Multi-level governance is always required for managing public policies in a decentralised context. In Spain, there are 36 "sectoral co-operation conferences" – bodies which operate sectorally in areas where the competences of the central government and the regional autonomous communities are interrelated and need to be co-ordinated. Interdependencies between levels of government can be institutional (when the allocation of responsibilities remains unclear); financial (when central and sub-central governments co-fund public spending in regions); and socio-economic (when issues and/or outcomes of public policy at one level affect other regions and at the national level). A full separation of responsibilities and outcomes in policy making is, therefore, not possible. Even in the US, the federal government has progressively increased its role through intergovernmental regulations imposed on state and local governments. The US Advisory Commission on Intergovernmental Relations has even provided a taxonomy of "federally induced costs" (Posner, cited in Conlan and Posner, 2008).

Managing relations between central and sub-national governments is necessary for two main reasons: *i*) wherever they are located, citizens should be able to enjoy equal access to a basic set of public goods and services; and *ii*) regional policy should also enhance the growth prospects of regions by raising their competitiveness. As such, *the equity objective in regional policy* attempts to reduce disparities between people living in different places, while *the growth objectives in regional policy* might widen disparities.

Box 3.1. **Brief summary of selected empirical studies on decentralisation**

Most empirical studies that rely on observations over time find a positive correlation between decentralisation and government responsiveness (Faguet, 2004; Fisman and Gatti, 2002). Decentralisation can help public administration become more efficient by making use of local knowledge in decision making and problem solving. Sub-national governments have an advantage over central governments for making use of local knowledge and networks in the provision and production of public services. However, it is important to consider the nature of the specific collective goods and services. For some it may make sense for the municipal or the regional government to take increased responsibility for reasons of proximity or local knowledge, while for others it may be central government that for reasons of scale or capacity is in the best position to provide them efficiently.

The relationship between decentralisation and administrative efficiency is complex. A review of cross-national analyses of decentralisation and its effects on administrative efficiency showed that at the aggregate level it is highly dependent on the specific context. A case in point is a 2006 quantitative analysis of 35 countries which showed a difference in the effect of political decentralisation on government efficiency in rich and poor countries. The authors detected a positive relationship between political decentralisation and efficiency in rich countries, but a (non-significant) negative effect in poor countries. The institutional set-ups in developed countries may not work in developing countries (O'Dwyer and Ziblatt, 2006).

The literature abounds with arguments for and against decentralisation as a means of promoting economic growth. Economists who favour decentralisation often assume that it leads to better resource allocation and a more productive, and possibly smaller, public sector (Oates, 1972, 1999; Shah, 1998; Tiebout, 1956). Their logic is that locally determined policies are better able to take account of local conditions for the provision of public goods, such as infrastructure, health and education. Others assume that decentralisation will produce healthy competition among different levels of government, which in turn will promote lower tax rates and the efficient delivery of public goods and services (Brennan and Buchanan, 1980). Others have argued that decentralisation may also give local governments incentives to innovate in the production and supply of public goods and services (Thornton, 2007).

Economists who are more sceptical about the economic benefits of decentralisation argue that it poses many difficulties for managing macroeconomic policy, especially in terms of ensuring fiscal co-ordination and implementing stabilisation policies (*e.g.* Prud'homme, 1995). More specifically, several studies question the desirability of transferring responsibility for revenue and expenditure functions to local levels because a tax assigned to local governments might be more efficiently managed centrally. This depends on the nature of the function and the problems that the government seeks to address. Other research also reveals the potential reinforcement of territorial disparities as a result of decentralisation owing to pre-existing inequalities, especially when decentralisation is not accompanied by relocation of funds and institutional and technical support to match the new responsibilities (Rodriguez-Pose and Gill, 2003; Sanchez Reaza and Rodriguez Pose, 2002). Finally, arguments that link decentralisation and economic growth assume that the decentralised units have sufficient institutional skills to carry out the delegated competences; however, this is not always the case.

Source: Various sources including: OECD (2008), *Territorial Review of Chile*, OECD Publishing, Paris.

The cost of regional service delivery is strongly influenced by a region's size and population density. Differences in geographic location, population size, demographic trends and social composition all affect the cost of providing public goods and services in different places. More populated regions benefit from economies of agglomeration until they are outweighed by congestion costs (Chapter 1). Moreover, some goods and services

(*e.g.* hospitals or motorways) can be operated efficiently only beyond a certain scale. Thus the provision of public goods in sparsely populated or remote regions tends to be either more costly or else sub-optimal.

We noted earlier that regional policies which focus mainly on transferring income to the inhabitants of poorer regions were falling out of favour. We argued that standard national progressive tax and social benefit programmes are better instruments for transferring income from richer to poorer households, wherever the households are located. Nevertheless, a region that has a high proportion of poor households will also have a low tax base from which to finance the public services for which it is responsible. Since citizens should enjoy the same or similar level of access to, and quality of, public goods and services wherever they live, there is a strong case for inter-regional transfers of resources to make this possible.

Accountable and credible leadership: a keystone of good governance

Differences among levels of government are not limited to costs and resources. Sub-national governments differ in their capacity, both to implement national policies and to define their own strategy for long-term development. This capacity might be related to the level of education of municipal staff, weaknesses in project management and budgetary practices, or difficulties in responding to local citizens' preferences and firms' needs. In turn, capacity can be negatively affected because preferences are not expressed, because democratic processes for improving electoral accountability remain limited and/or because of ignorance about how co-operation with private entities should be organised in order to enhance social capital local resources.

Addressing fiscal and knowledge gaps requires concerted interventions by sub-national and central levels of government. It also means stimulating effort by different actors in charge of regional policy elaboration and implementation. In order to select targets for sub-national programmes, countries might use experimentation and pilot cases to identify best practice (supported by incentives to "innovative regions" to compensate for risks taken and to share information with other regions (Oates, 1999).

However, the greater the differentiation of place-based policies, the more challenging it will be to make consistent regional policy. Two types of benefits can emerge from consistency: *i*) in an allocative perspective, consistency enhances the policy efficiency by avoiding contradictory public actions, duplication of resources, etc.; and *ii*) in a dynamic perspective, consistency makes information more widely accessible, identifies and diffuses good practices, and maximises opportunities for action. The rationale for country-specific multi-level governance instruments arises from the need to have both sub-national ownership and central intervention.

In all countries, there are "deconcentrated" bodies that are the specific representatives of the central government in the regions. There are three reasons why they are not a substitute for sub-national government headed by elected officials (despite what is suggested in Evans and Manning (2004):

- Accountability to local citizens and firms is more effective than accountability to the central level for representing, promoting and addressing local challenges and opportunities.
- The relevance of regional strategies depends on information possessed only by local actors.

- It is desirable to integrate the specific knowledge of local and regional actors into the policy-making process, thus enriching national knowledge via regional experimentations.

Some OECD countries (France, United Kingdom etc) do not consider deconcentration and decentralisation as substitutes, but rather as complements. This can lead to duplication in public spending.

Although there is no master plan for assigning competencies across levels of government, there are some common trends across countries. Examples from EU countries show that environmental responsibilities are very often local (water, waste, roads, urban planning), with sub-national spending in this area accounting for as much as 75% of total government expenditure. Economic development, culture and tourism are often shared more or less equally among levels of government, although the sub-national share is rising somewhat. In 2004, across the EU primary and secondary school buildings were the responsibility of sub-national governments, while remuneration of teaching staff was a central responsibility in 50% of European countries. Public health is also often shared (for example, in 2004, hospitals were a sub-national government responsibility in just six EU countries). Municipalities are generally responsible for providing and managing basic community services, while higher-tier local governments are responsible for supra-municipal tasks such as health, roads or economic development. Some basic criteria relevant to the allocation of competencies are given in Table 3.1. However the weight given to each is more historical and political than economic and it is rarely possible to implement these theoretical principles. In addition, allocating responsibilities to sub-national authorities has been shown to have limited impact on the differentiation of strategies implemented in each place (Madies, 2001).

Table 3.1. **Criteria for the allocation of competencies**

Criteria	Decentralisation	Centralisation
Preferences	Heterogenous	Homogenous
Scale economies	No	Yes
Spillover effects	No	Yes
Congestion effects	Yes	No
Decision costs	If they increase in function of the size of the group	If they decrease in function of the group

Source: Dafflon, B. and T. Madies (2008). *Décentralisation dans les pays en développement: quelques principes issus de la théorie du fédéralisme financier*. l'Agence Française de Développement (AFD).

Beyond the relationships between central and sub-national levels of governments, there has been increasing acknowledgment that purely public intervention has its limits. This has opened the way for greater co-operation between the public and the private sector (OECD, 2005a). In fact, the involvement of private actors in the supply of so-called local public goods is nothing new (even if there has been a recent increase in the use of these methods in the fields of social welfare, environmental protection, etc.). Some regard it as the key element in the definition of governance. As long ago as 1974, Nobel prizewinner Coase used the metaphor of lighthouses to demonstrate that a public good

does not necessarily have to be supplied by the government. Indeed, throughout the centuries, lighthouses have been built and managed by private investors, maritime corporations and associations from the public and private sectors (Coase, 1974).

Public-private partnerships (PPPs) are increasingly important for the financing of large public investment projects. PPPs are contractual agreements between a public agency and a private firm which can take different forms (Box 3.2). Through this agreement, the skills and assets of each sector (public and private) are shared to deliver a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the potential risks and rewards. From the public sector's point of view, there are two major attractions. First, PPPs enable an authority to lever additional finance without recourse to fiscal means. Second, they split the costs and risks of projects between the public and private sectors, tapping into the expertise and economies of scale available in the private sector that are rarely exploited for public policy. The key issue in assessing the use of PPPs is whether they bring about any increase in efficiency and effectiveness.

At the same time, there are certain risks involved with PPPs; in particular, asymmetries of information and of commitment between the different parties. The private partners need to participate as early as possible, so that they can suggest initial infrastructure development plans or alternative plans. On the other hand, early participation by the private sector may raise transparency and accountability problems. Private firms may propose plans that concentrate on their own returns rather than the overall socio-economic benefits to a region. It is therefore important for policy makers to ensure procedures of enhancing the positive externalities of the projects without sacrificing private innovation. The public sector should prioritise lists of overall infrastructure projects and undertake feasibility studies for each project before deciding whether to go ahead with private participation.

However, beyond the advantages and risks of co-financing public investment with private actors, the main issue is the shared will of the different actors to improve their living conditions and the economic development of the territory. The economic dynamics of regions require that all actors at national, regional and local level, from the public as well as the private sector, be involved in decisions about their future. In an economy that places very high value on knowledge, regional development policy cannot afford to disregard the cognitive resources available. The participation of private key actors in the very definition and implementation of regional development strategies is directly attached to the notion of leadership at the local level, and this varies significantly according to the institutional framework of OECD countries (Box 3.3). Local and regional leaders are often responsible for making the financial arrangements when drawing up contracts between levels of government (see below).

Box 3.2. **Some common forms of public-private partnerships**

Public-private partnerships can take many forms:

- The private sector operates the facility for a fee. The public sector retains responsibility for capital costs.
- The private sector leases or purchases the facility from the public sector, operates the facility, and charges user fees.
- The private sector builds or develops a new facility, or enlarges or renovates an existing facility, and then operates it for a number of years.
- The private sector builds the required infrastructure, operates the facility for some specified period of time, and then transfers it to the government.
- The private sector builds and operates the facility and is responsible for capital financing. The public sector regulates and controls the operation.
- The private sector builds the infrastructure and then transfers ownership to the public sector.

Source: Kitchen, H. (2005), "Delivering Local/Municipal Services", in Anwar Shah *et al*. *Public Services Delivery*, Public Sector Governance and Accountability Series, The World Bank, Washington, DC.

Box 3.3. **Leadership and consensus building regional innovation strategies**

One of the most challenging roles for the public sector in supporting regional competitiveness is the ability to bring together public and private actors behind a common regional strategy. In a regional innovation system, the type of leadership style will depend on many factors, including:

- The size of the regional innovation system (RIS). This describes the number of actors engaged in regional innovation, their sectoral origin and their relative independence of interest and thinking. For example, some regions might be characterised by a single strong sector (such as telecommunications), dominated by a single industrial player (such as Nokia) and supported by a local university (like the University of Tampere). There is little diversity in such regions. Other regions might boast several strong players across different sectors, like in the north-west of England.

- Dispersal of regional decision making. This describes the degree of regional independence and autonomy, including the internal regional hierarchy; the regional political structures of accountability, and softer dimensions, such as the extent to which powerful actors permit other actors' freedom of behaviour. For example, the city of Barcelona has considerable autonomy as the seat of the Catalan province, whereas English cities in general remain largely dependent on the central government in London.

Source: Benneworth, P. (2007), "Leading Innovation: Building Effective Regional Coalitions for Innovation", *NESTA Research Report*, National Endowment for Science, Technology and the Arts, London, December 2007.

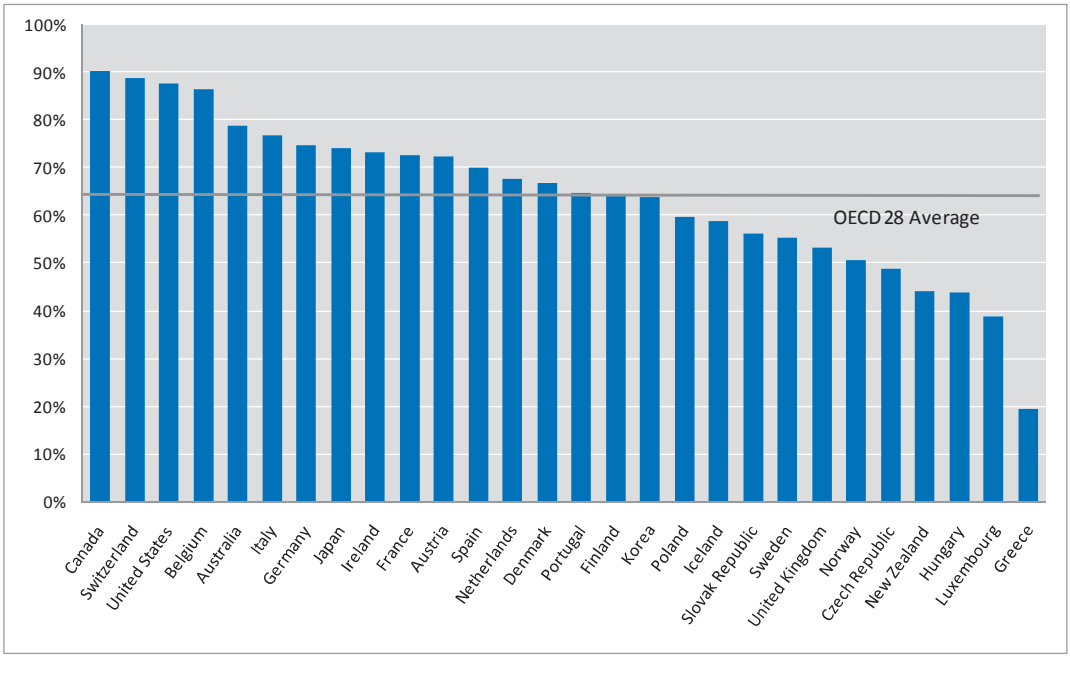
What financial resources support regional development?

In areas where both total public spending and sub-national responsibility are traditionally large, sub-national spending ratios have either risen slowly (education) or even declined (healthcare, for which trends towards "recentralisation" has been observed in some countries, Salman, 2008). Social security, the public spending item with the highest overall increase, is strongly centralised and therefore relative spending growth has little impact at the sub-national level in most countries**.** Spending patterns suggests that sub-national governments have so far escaped the fiscal pressure of demographic change, either because this pressure affects the central level more than the sub-national level (social security) or because policy measures such as intergovernmental transfers have compensated (education, family and childcare). Apparently, redistributive policies remain largely a central government competency.

However, spending pressure at the sub-national level varies considerably according to a country's institutional set up; it can also change. In Australia, for example, sub-national needs might increase since responsibilities such as education, childcare, elderly care and transportation infrastructure (all sub-national competencies) are growing faster than general government expenditures (Aigenger *et al.*, 2006). In France, the evolution of environmental standards is responsible for a major increase in sub-national public investment spending (OECD, 2006a).

Sub-national governments are the main contributors to public investment accounting for nearly 70% of public investment in Europe (see Figure 3.2). The central government's role is increasingly a guide and a warrantor of national consistency in regional policy.

Figure 3.2. **Capital expenditure by regional and local authorities, 1995 and 2004**



Source: Eurostat.

Sub-national governments have two main revenue sources (beyond borrowing): their own tax revenues and revenue from intergovernmental grants (they might also benefit, to a minor extent, from fees and charges. Normative principles of fiscal federalism provide a relatively clear set of rules for balancing grants and taxes. In theory, own taxes should be the primary revenue source to ensure efficiency, while transfers should be used as a supplementary revenue source to correct for externalities, act as an insurance buffer, or redistribute resources between regions. In reality, countries do not completely adhere to the normative view, nor do federal or unitary constitutional frameworks appear to be key explanatory factors. This deviation from theory reflects the variety of roles performed by sub-national governments in OECD countries, the variety of national approaches to ensure fiscal equalisation, the extent of externalities from sub-national policies, historical circumstances and a variety of political concerns. An additional element is that sub-national governments are sometimes unwilling to exploit all of their potential taxing power, with very different national political attitudes towards imposing high levels of local taxes. These would appear to be higher in Spain than in Scandinavian countries, for example. Sub-national tax competition (as for fees) might also promote a "race to the bottom" by sub-national governments (in delivering sub-national public services) to attract private investment.

Central and sub-national governments co-fund sub-national policies. By using different financial mechanisms it is possible to influence their outputs. For the sub-national government, the option of keeping part of local wealth for sub-national policies is a key incentive for economic development (this partly explains fiscal equalisation reforms in countries like Portugal or Switzerland). From the central government (CG) point of view, a variety of transfers can be allocated to sub-national governments for fulfilling the main functions normally associated with the CG role (OECD, 2006b). These could be to enable sub-national governments to finance a basic package of services for which they have competence (or to reach imposed standards); to compensate for spillover effects from sub-national policies; and to allow equalisation (provision of similar services with a similar tax burden).

OECD countries adopt very different patterns for financing their sub-national governments through transfers (Table 3.2). Types of grants have to be consistent with their objectives. Non-earmarked grants are usually more efficient instruments for financing and equalising purposes than earmarked grants. Earmarked grants can be relevant for risk-sharing projects, temporary co-operation projects and expenditures which need guidance from central to sub-national decision makers. For regional development objectives, earmarked grants are a good financial instrument through which CG can support regional strategies and contribute to sub-national capacity building. Among the variety of possible conditions associated with earmarked types of grants, some can be more favourable for collaboration between levels of government than others, as shown by the recent evolution of Japanese grants for urban renovation (Box 3.4). In Spain, the new regional funding system, approved in 2001, splits the inter-regional compensation fund into two investment instruments: the *compensation fund* and the *complementary fund*. Allocation of these resources to the different investment projects is agreed between the central government administration and the regional Autonomous Communities in the Public Investment Committee.

Table 3.2. **Grant revenue by type of grant, 2006**

% of total grant revenue

	Earmarked								Non earmarked			
	Mandatory				Discretionary				Mandatory		Discretionary	
	Matching		Non-Matching		Matching		Non-Matching		General purpose	Block grants		Total
	Current	Capital	Current	Capital	Current	Capital	Current	Capital				
Australia												
State	-	-	-	-	47.5	9.2	32.4	4.9	5.9	-	-	100.0
Local	-	-	-	-	15.6	-	2.8	0.0	81.6	-	-	100.0
Austria												
State	48.4	2.4	12.1	17.3	0.9	-	0.3	-	10.9	0.2	7.5	100.0
Local	36.5	3.3	11.5	28.7	1.8	-	0.2	-	18.0	0.1	0.0	100.0
Belgium												
State	1.0	0.3	-	-	-	0.0	-	-	97.1	1.6	-	100.0
Local	45.0	5.0	-	-	-	-	-	-	49.9	-	-	100.0
Canada												
State												
Local												
Czech Republic												
Local	12.4	-	-	-	-	-	72.3	15.3	-	-	-	100.0
Denmark												
Local	0.1	71.8	-	0.0	0.3	0.6	0.0	0.1	26.8	-	0.2	100.0
Finland												
Local	5.8	-	-	-	-	-	1.9	1.7	14.2	75.8	0.6	100.0
France												
Local	6.8	-	0.1	-	-	2.0	1.7	1.8	80.9	6.7	-	100.0
Germany												
State												
Local												
Greece												
Local	40.9	36.1	-	-	-	-	-	-	23.0	-	-	100.0
Hungary												
Local	36.2	10.5	-	-	-	-	5.3	10.6	36.2	-	1.1	100.0
Iceland												
Local												
Ireland												
Local	-	-	-	-	-	-	14.8	73.5	11.7	-	-	100.0
Italy*												
State	-	4.5	-	5.1	-	-	14.7	5.6	70.2	-	-	100.0
Local	-	-	-	-	-	-	30.5	31.5	38.0	-	-	100.0
Japan												
Local												
Korea												
Local	-	-	-	-	12.7	14.7	-	-	72.6	-	-	100.0
Luxembourg												
Local	86.3	13.6	-	-	-	-	-	-	-	-	-	100.0
Mexico												
State	-	-	49.0	-	-	-	5.7	-	45.4	-	-	100.0
Local	-	-	42.3	-	-	-	-	-	57.7	-	-	100.0
Netherlands												
Local	48.4	-	-	-	-	-	-	-	51.6	-	-	100.0
New Zealand												
Local												
Norway												
Local	9.6	0.0	-	-	-	-	33.5	-	-	56.9	-	100.0
Poland												
Local												
Portugal												
Local	-	-	-	-	-	-	16.1	-	83.9	-	-	100.0
Slovak Republic												
Local												
Spain												
State	0.3	0.4	8.5	4.4	1.3	0.8	1.1	0.9	82.4	-	-	100.0
Local	17.1	17.8	2.1	-	-	-	-	-	62.9	-	-	100.0
Sweden												
Local												
Switzerland												
State	74.3	-	-	-	-	-	-	-	25.7	-	-	100.0
Local												
Turkey												
Local	-	-	-	-	-	-	-	57.0	-	-	43.0	100.0
United Kingdom												
Local												
United States												
State												
Local												
Unweighted average												
State[1]	17.7	1.1	9.9	3.8	7.1	1.4	7.7	1.6	48.2	0.2	1.1	100.0
Local	18.2	8.3	2.9	1.5	1.6	0.9	9.4	10.1	37.3	7.3	2.4	100.0

* Including Italy and Spain (Regional countries).

Source: Fiscal Network Database.

Box 3.4. **Community renovation grants in Japan**

Conventional subsidy schemes for public infrastructure did not take into account a municipality's autonomy in community development and attracted criticism because they led to the creation of regimented towns. In 2004, community renovation grants were established in order to implement a unique community development initiative that brings together regional history, culture and natural environmental features. This grant differs from conventional subsidies in the following ways:

- Bottom-up project decision-making. If a project concerns community development, the transfer allows for a very wide range of uses, including soft infrastructure like workshops for community residents. Grants can be used in accordance with plans formulated by the municipality, which has a high level of autonomy.

- Shift from sector-based support to integrated programmes. National supervising bureaus have been established, allowing for effective distribution and management of subsidies.

- Improved accountability. Selected projects undergo a preliminary assessment for impact, efficiency and feasibility. A second assessment determines cost efficiency and residual economic effect, using a PCDA ("Plan-Do-Check-Act" as used in business process improvement) cycle after completion of the project.

Community development grants used by municipalities totalled JPY 133 billion for 355 districts in FY2004, jumping to JPY 251 billion for 1 428 districts in FY2008. In FY2009, the government is planning to raise the upper limit for projects which meet priority policies.

Source: MLIT Japan, (2009), Results from TDPC Regional Policy Questionnaire, (input for Enlarged Bureau meeting of 6 February 2009,in preparation for the TDPC Meeting at Minsterial level).

Whatever its characteristics and results, income equalisation is a passive, corrective fiscal policy with no growth and development strategy behind it (Box 3.5). There is a case therefore for accompanying it with policies to achieve productivity increases in sectors such as transportation, research and education and regional development. Like any other redistributive programme, income transfers can create potentially adverse fiscal and economic incentives for sub-national governments. In particular, large transfers can discourage the growth of the region's own resources through economic development ("poverty traps"). The fiscal role of central government is not limited to redistribution, but also involves supporting regional development, which may indicate the earmarking of grants. In Norway, for example, where welfare costs are a heavy burden on local finances, some sub-national governments have expressly asked the central government for earmarked grants to help finance regional development strategies.

Analysis of fiscal instruments across OECD countries suggests a number of observations and recommendations, in particular:

- Fiscal instruments need to be adapted to the objective: while general purpose grants are better for equalisation purposes, earmarked grants seem to be more appropriate for regional development.

- Transfers from central governments cannot be limited to equalisation purposes. Co funding solutions by central and sub national actors are the most suitable for regional development programmes. Shared financing such as this takes the form of earmarked grants. These types of grants can target sub national capacity building but have to remain bounded solutions since they can have adverse effects and may entail bureaucratic costs.
- Internal revenues from taxes reinforce sub national accountability. However, the financial participation of central/higher government is necessary to ensure the coherence of regional policies.
- Whatever the level of their financial resources, sub national governments are, to a large extent, the main providers of public investment.

Box 3.5. **Fiscal equalisation in OECD countries: summary of main findings**

- There two main fiscal equalisation systems: horizontal (transfers among different regions) *vs.* vertical equalisation (transfers from the central to sub-central levels of government); and equalisation of revenue disparities *vs.* cost disparities.
- Fiscal equalisation makes up around 2.3% of GDP on average across the OECD, (ranging between 0.5 and 3.8%); between 1.2 and 7.2% of government expenditures or between USD 110 and 1 200 per capita).
- Equalisation reduces fiscal disparities by two-thirds on average; horizontal systems seem to show a slightly stronger equalising effect in relation to GDP.
- Equalisation can pose a problem for budget stability (less likely for horizontal systems).
- Revenue equalisation can reduce tax and development efforts (risk of poverty trap).
- Cost equalisation is prone to rent seeking.
- In systems in which only fiscal capacity is equalised, metropolitan areas will usually be net contributors. In systems in which only cost differences are equalised, metropolitan areas will usually benefit, as will remote rural areas.
- The choice of standardised revenue or cost bases can mitigate disincentives; as can having an independent body that allocates equalisation transfers.

Sources: Bloechliger and Charbit, *OECD Journal: Economic Studies (2008),* OECD Publishing, Paris*;* Bloechliger, Merk *et al*, WP n°4, *OECD Network on Fiscal Relations across Levels of Government (2007),* OECD Publishing, Paris.

Investing strategically: the role of contracts for regional development

Vertical contractual relations between levels of government

Regional development policy requires co-funding mechanisms that differ from central government support for income equalisation. In order to be able to both create dialogue and trust among partners in regional policy (essential conditions for revealing needed information) and to select the most appropriate projects for regional development, OECD countries have largely adopted "co-opetition" arrangements between levels of government, in other words a mix of co-operation and competition. These arrangements, largely inspired in European countries by European Union practices for distributing regional policy funds, are based on *i*) selective processes among rival projects for local development, each of them based on participatory practices; and *ii*) the acknowledgement of interdependency among central and sub-natioal governments for deciding and implementing the selected regional strategies.

A "contract" here refers to the bilateral agreements between central and sub-national governments concerning their mutual obligations, *i.e.* the assignment of decision-making powers, the distribution of contributions (including financial commitments) and mechanisms to enforce the contract. In European Commission jargon, these contracts are instruments for setting *conditionalities* for higher levels of government support for the development of territories. These conditionalities imply multisectoral contracts between parties, financed through earmarked and co-funding mechanisms, for addressing agreed targets. They also imply a set of performance indicators for monitoring long-term collaboration, assessing the delivery of policy and supporting capacity building at local level. The effectiveness of this type of agreement strongly depends on enforcement structures and specific clauses to deal with violation by one of the parties.

There are many possible types of contractual arrangements. The OECD has developed an approach for assessing their efficiency, based on the distinction between "transactional" and "relational" types of contracts (Box 3.6).

Because of the complexity of the policy domain, which involves many actors and issues, contracts in regional development are often relational. For example, relational contracts may be preceded by calls for tenders to reduce uncertainty, elicit information about possibilities, and help develop selection criteria (Box 3.7). Relational contracts can also contain specific tasks to be handled by transactional contracts. Finally, mixes of both can occur as decentralisation takes place.

Box 3.6. **A typology of contractual arrangements among levels of government**

A contract between levels of government is any arrangement which re-organises, along with the constitution, the rights and duties of government. Such contracts (compared with those which imply private actors' participation) lack regulation by competition (the choice of the partner, especially the central one, is rather limited, and contracting is frequently mandatory) and contracting parties have no recourse to "vertical integration". Consequently, contractual choices are more limited than for general contracts and the logic of contracting is strongly influenced by the need to organise essential co-operation. Assessment of such contracts should focus on learning and seeking efficiency, rather than on exit strategies.

Contract theory reveals various types of contracts from "transactional" to "relational" (there are many possibilities for mixing between these "extremes"):

- Transactional: the respective duties of both parties can be stated in advance (contracting implements incentive mechanisms and constrains parties' behaviour).
- Relational: the parties commit mutually to co-operate after the signature of the contract and design governance mechanisms for that purpose. Here contracting means implementing bilateral negotiation mechanisms and guaranteeing the long term dynamics of co-operation.

The choice of contract type must consider the following four dimensions:

1. The respective expertise of both parties.
2. The complexity of the policy domain, meaning that information is revealed only through policy implementation.
3. The degree of vertical interdependency between national and regional policies.
4. Characteristics of the enforcement context that warrant commitments' credibility (independent administrative justice, clear delimitation of responsibilities).

Source: OECD (2007), *Linking Regions and Central Governments: Contracts for Regional Development*, OECD Publishing, Paris.

OECD findings (OECD, 2007a) on the efficiency of contracts for regional development policy, based on theory and case studies, are as follows:

- Explicit contracts among levels of government are unavoidable because of vertical interdependencies between issues and outcomes among levels of government, and because there may otherwise be either duplication of effort or policy gaps.
- Contracts allow for a customised management of interdependencies, useful in unitary states as an instrument in decentralisation policies. They are often broad in scope with multiple goals (such as a framework contract complemented by a set of implementation contracts, *e.g.* France, Italy). In federal states, contracts are just tools for allowing co-operation because interdependences between levels of government remain even if the distribution of prerogatives is very clear.

- Contracts are tools for dialogue, for experimenting and clarifying responsibilities and so for learning. Impact evaluation should be encouraged, so as to adjust the policy.
- Bilateral commitments validated by contracts among levels of government must be as verifiable as possible.
- Collaboration through contracts makes the need for strategic leadership at regional and /or local level more obvious.

Contracts also have drawbacks:

- the possible high costs of consultation and negotiation, as well as execution;
- their trend towards proliferation;
- ministries in central government can be reluctant to give up their prerogatives;
- limited flexibility when the parties are rigidly committed to fixed long-term programmes;
- possible tension between levels of government in the acknowledgment of the respective parties/responsibilities of the contract;
- difficulties in specifying regional strategy when national goals are too broadly defined.
- There are pros and cons of "contractual arrangements" which need to be adapted to each case. They are not just static tools for managing co-funded public policies, but above all they are a tool for dialogue. Dialogue is crucial for avoiding differences of ambition between regional authorities and central ones.
- Since contracts allow for learning, they can even lead to an evolution from a contractual arrangement to devolution of a task.
- A key issue needs to be further explored: contracting between levels of government requires the identification of who are the leaders (gatekeepers) of regional development.
- Reaching coherent regional policy making through vertical contracts requires improving co-ordination arrangements among ministries intervening in regional development, because of the multi-sectoral nature of the policy.

Analysis of the use of contracts in OECD countries suggests the following findings:

- There are pros and cons of "contractual arrangements" which need to be adapted to each case. They are not just static tools for managing co-funded public policies, but above all they are a tool for dialogue. Dialogue is crucial for avoiding differences of ambition between regional authorities and central ones.
- Since contracts allow for learning, they can even lead to an evolution from a contractual arrangement to devolution of a task.
- A key issue needs to be further explored: contracting between levels of government requires the identification of who are the leaders (gatekeepers) of regional development.

- Reaching coherent regional policy making through vertical contracts requires improving co ordination arrangements among ministries intervening in regional development, because of the multi-sectoral nature of the policy.

Box 3.7. Call for tenders for regional innovation programmes: a tool for revealing information and building capacity

While a competitive selection process can contribute to the importance of a "label", the number of projects selected must be limited. Programmes seeking to support leading regions or industries often impose a stricter selection process and fund fewer projects. The Norwegian Centre of Expertise specifically seeks to limit the number of selected clusters so that the label effect will be important enough to attract international attention. In its first round, the Swedish VINNVÄXT programme selected only three full recipients and seven partial recipients out of 150 initial applicants; it selected five out of 23 in the second round. While France chose a very large number of poles, they developed a four-tier labelling system to distinguish between them: six were "international", nine were "internationally oriented", 15 were "inter-regional" and 37 were "regional".

The capability and credibility of the selecting bodies play a role in public perception and hence in the effectiveness of the label. The involvement of private actors appears to be an important source of credibility. The Georgia Research Alliance in the United States, for example, serves as an expert body for selecting the most relevant research projects to support the state's growth. While state legislators allocate the funding to the Georgia Research Alliance, its board members are representatives from universities (many are private entities) and industry. Most countries have selection committees comprised of both public and private actors. In cases where the selection process is performed entirely by civil servants, the process is more subject to debate. In France, for example, the lack of private-sector involvement in the selection committee has been noted by the policy's critics. However, France does have a committee to ensure the integrity of the pole label. In Sweden, the fact that the programme designation was national, and not simply regional, was considered in evaluations to play an important role in cluster legitimacy

One additional benefit of competitive selection procedures is that sometimes, even for candidates that are not selected, the process results in network building and action plans. Sweden's VINNVÄXT programme accepted only a small fraction of the applications received. When Sweden's subsequent Visanu programme was introduced, many groups that had already worked together on a VINNVÄXT application applied to Visanu and were selected. Some networks have also worked together to re-apply for subsequent VINNVÄXT funding rounds. In Germany as well, unsuccessful applicants to the BioRegio and InnoRegio programmes have gone on to develop their projects on the basis of other funding mechanisms. The momentum generated by the BioRegio competition led to the expansion of support to biotechnology via the BioProfile programme to a larger number of regions, many of which had been unsuccessful applicants for BioRegio.

Sources: OECD (2007), *Competitive Regional Clusters: National Policy Approaches;* OECD (2008), *OECD Territorial Review Portugal;* OECD (2007) *Linking Regions and Central Governments: Contracts for Regional Development,* OECD Publishing, Paris.

Co-ordination across line ministries

National government needs to work with conflicting perspectives: specialisation in lean organisations which are efficient in the pursuit of their individual goals, while also encouraging clever integration to reach goals where operations intersect, in particular for regional purposes. The public sector has become a matrix of crossing perspectives, geographical as well as functional, and the key issue rests on the ability to benefit from

synergies between the different domains of public intervention. Vertical co-ordination often requires horizontal co-ordination between line ministries in charge of public policy fields, with an impact at the sub-national level.

This is the case with the *Contrat de Plan Etat Région* (CPER) in France (now *Contrat de Projet Etat-Régions*). In the previous generation of CPER (2000-06) there were nearly 20 ministries participating, all contributing to varying degrees. The ministries that contributed most to the regional programmes under these contracts were the Ministry of Infrastructure, Transportation and Housing, followed by the Ministry of Education and the Ministry of Agriculture. Co-ordination of the various ministries' actions in regions was the responsibility of both the inter-ministerial DIACT (*Délégation Inter-ministerielle à l'Amenagement et la Competitivité du Territoire*, under the authority of the Prime Ministry) and the "prefect" role of contract negotiator (the other party is the president of the regional council). The latter consults the variety of ministries who are stakeholders in the contract (with the participation of their deconcentrated services in regions). In some cases, like in Poland, this can be very challenging with regard to the allocation of EU funds: the ministry of regional development is the managing authority for all operational programmes (including sectoral ones). In practice conflict has occurred between ministries, and arbitration mechanisms are lacking. In Spain, co-ordination of the use and management of EU funds is the responsibility of the Ministry of Economy and Finance, which negotiates with the EU, co-ordinates the regional Autonomous Communities and the other ministries and verifies the assessment of the EU funded projects.

In most countries, however, co-ordination of regional development policy at the central level is challenging, and most countries lack strong central authorities for arbitrating among different line ministries. The need for both vertical and horizontal co-ordination for addressing specific needs in terms of public investments and action was particularly clear when dealing with the aftermath of hurricane Katrina in Louisiana – the presence of a greater number of stakeholders would have been desirable for a more collaborative approach.

Drabenstott (2005) makes the point that most of the spending by federal government in the US which affects regional development is spent for other purposes, but nevertheless had important effects on regional development. "The federal government's 180 economic development programs suggest a very diffuse economic development policy. No single department or agency oversees the entire effort. Simply put, federal economic development policy is a soup concocted by many chefs." (Statskontoret, 2007). He also notes that regional offices also remain unco-ordinated. This situation shows how difficult it is for the public and for experts to get a grip on the situation, to assess effectiveness and to be able to hold politicians accountable for spending.

The positive impact of policies cannot be felt with a fragmented policy approach. Policies interact strongly and in a complementary way. Regional and local levels are the locus where these complementarities materialise most strongly. Strategies for regional development and the regional provision for public goods must then be viewed systemically.

Identifying an efficient scale for supplying local public goods and services

Increasing decentralisation puts pressure on both national and local policy makers to find ways to achieve economic efficiency, high quality provision of local public goods, capacity for building and programming a strategic vision at the relevant level and ability

of sub-national actors to negotiate with peers and higher levels of government. While sub-national authorities tend to operate mostly within administrative boundaries, a co-ordinating role for central government can occur. In the Netherlands, when national priorities are involved, central government needs to bring together sub-national authorities in integrated regional programmes, at the functional rather than the administrative scale. Reforming sub-national public organisation is not straightforward, however. It is difficult to measure the importance of economies of scale and hence the optimal size of sub-national jurisdictions. Secondly, it is challenging to translate any scale or scope economies that arise via co-operation or amalgamation into better or cheaper public services. Merging sub-central governments and promoting their co-operation are among the most frequent approaches, and many methods have been tried.

Territorial fragmentation can jeopardise the implementation of major investment projects that are supposed to encourage growth if each local authority can only define a partial strategy. OECD countries present very different experiences on this subject. Empirical studies on the cost of public services conducted in several countries show a U-shaped curve: the cost per habitant diminishes with the size of the population (economies of scale) until a so-called "optimal" level, beyond which the tendency reverses itself, essentially due to congestion effects. However, this size varies considerably from one country to the next, mostly because of the differences in the distribution of competencies. It also varies over time because of technical progress or new regulations (for example in the area of the environment). Studies of the optimal size of municipalities have been conducted recently in several countries leading to rather heterogeneous results (150 000 inhabitants in Japan; between 10 000 to 50 000 in Canada; from 20 000 to 40 000 in Denmark; between 10 000 and 20 000 in Switzerland, around 10 000 in Norway; and around 5 000 in Spain) but not suggesting a clear evidence base for judging optimal unit size.

The trade-off between competition and co-operation

A key issue in the governance of regional development is the trade-off between competition and co-ordination among local administrations. One of the seminal articles on local government (Tiebout, 1956) postulates that the competition between local governments is the public sector's equivalent to competition in markets: individuals "vote with their feet" for local administrations that offer their preferred bundle of public goods and taxes. Additions to this model include "yardstick competition" between regions (Salmon, 1987). The traditional arguments for local government (better adaptation to local preferences and circumstances) underpin the positive impacts of competition between local governments. At the same time it is clear that competition is more complex in the case of externalities, as these effects, which occur beyond jurisdictional borders, risk being ignored if there is not some form of co-ordination or co-operation. In general, there will be more need for regional co-ordination of public goods and services when these are subject to externalities (such as transport); more competition would make sense when most externalities are already internalised or when mechanisms are in place to internalise them. This is particularly relevant for metropolitan areas, as their density will usually imply more externalities. For this reason, several municipal areas have intra-metropolitan equalisation schemes (Box 3.8).

Box 3.8. **Metropolitan fiscal equalisation in Tokyo, Seoul, Istanbul and Copenhagen**

Tokyo comprises 23 special wards, or *tokubetsuku* with substantial fiscal and administrative powers, and 39 municipalities. Equalisation totalled JPY 1.48 trillion (about EUR 11 billion) in 2003. It is funded by the sub-national property tax, the corporate share of the municipal resident's tax and the landholding tax levied inside the Tokyo metropolitan region. Tokyo prefecture gets 48% of the funds, allocated to support its provision of area-wide services such as water and sewage, fire services, and so on. The remaining 52% of the funds are allocated among the 23 wards (*ku*) according to need. This need is determined by calculating 14 items of the ward level revenues and comparing the total for each ward with a calculation of standardised costs for each ward.

Seoul's Metropolitan Government's support to the autonomous districts (*gu*) totals KRW 2 000 billion (around EUR 1.7 billion), 14% of its total spending in 2004. The grants are adjusted according to local fiscal capacity. The formula for this transfer system has not been revised in over a decade and is heavily weighted towards covering the costs of civil servants. The district budgets are spent mostly on social development, and relatively little is spent on economic development.

The financial flows in the metropolitan fiscal scheme in Istanbul are the inverse of those in Tokyo and Seoul. District municipalities in Istanbul have to transfer 35% of their tax share to the Istanbul metropolitan municipality to finance services that the metropolitan municipality provides to the district municipalities. Of the remaining 65%, 10% has to be transferred to the Istanbul metropolitan municipality for transport investments. District municipalities complain about this transfer, since they feel that the services provided by the metropolitan municipality are poor and that they do not have enough left for their own needs.

An inter-municipal equalisation system exists in the Greater Copenhagen area. This is purely inter-municipal: no central government subsidies are allotted. Any municipality in the area whose expenditure is larger than the estimated tax receipts receives a subsidy (27% of the difference between the expenditures and the tax receipts). Conversely, a municipality with a surplus contributes 27% to the equalisation scheme. The expenditure estimations are based on demographic and socio-economic factors, which make it possible to take the different exogenous factors that influence local expenditures into account. The weights of the different socio-economic indexes are however different. The equalisation system for the Greater Copenhagen area transfers EUR 250 million per year from the wealthier to the more needy municipalities. Eighteen municipalities benefited from these transfers in 2008 and 16 municipalities contributed to this system. In absolute terms the largest beneficiary of the scheme was the City of Copenhagen, which received around one-third of the total money transferred.

Sources: OECD (2005), *OECD Territorial Reviews: Japan;* OECD (2005), *OECD Territorial Reviews: Seoul, Korea*; OECD (2008), *OECD Territorial Reviews: Istanbul, Turkey;* OECD (2009), *OECD Review of Copenhagen,* OECD Publishing, Paris.

Horizontal collaboration: amalgamation or co-operation?

Efficiency gains can be achieved in theory at the local level through the amalgamation of municipalities. This internalises spillover effects among them, produces economies of scale, and improves fiscal efficiency, depending on the geographical extent of the relevant jurisdiction. It is assumed that a bigger municipality can enjoy economies of scale by merging public services and increasing the size of "plants" (schools, hospitals, etc.). A unitary tax system and uniform tax rates allow greater fiscal equity within the amalgamated agglomeration, and amalgamation allows better policy co-ordination across

the territory. Indeed, with fewer jurisdictions, firms may be less able to play off one jurisdiction against the others. The main argument against amalgamation is that, given the difficulties associated with merging (see below), efficiency gains could be achieved instead through inter-municipal co-operation.

Co-operation can translate into economies of scale at the "plant" level, as municipalities combine resources to provide public services jointly (such as a regional school district). Municipalities may agree to a common tax rate (as in France), pool revenues through an inter-municipal structure, and redistribute the funds to enhance equity across the region. Inter-municipal co-operation can also permit localities to access new funds, to generate a local strategic vision, or to specialise in specific services and co-operate to access others.

Most OECD countries are seeking the relevant scale for local public services. A first approach consists of recentralising certain responsibilities at a higher governmental level where economies of scale exist. This has been the case in particular for hospitals: in Norway since 2002; in Australia, where reform is scheduled to be finished by 2010; and in Finland, where municipalities have to be partners of their hospitals managed at regional level. Solutions can also be created through co-operation among municipalities according to different formats: specialisation (notably in Switzerland) or joint production. In Switzerland, certain cantons do not provide certain public services (notably hospital care and university education), but they guarantee their citizens access to these services via other cantons (with financial compensation). However, most countries have favoured joint production, which can be limited to just one service or cover several (Germany and Spain, for example). Finally, certain OECD countries adopt the more radical strategy of merging municipalities. It is interesting to note that these mergers contribute more to improving the quality of services than to reducing costs. This merger strategy has been put in place in many OECD countries, most recently in Japan and Denmark (Box 3.9). They sometimes target a precise size and contain incentive measures that are more or less voluntary. In contrast, in France, inter-communal grants are considered as an opportunity for municipalities. They are not associated with strictly evaluated constraints, therefore creating a real disincentive to the merger of municipalities. While inter-municipal co-operation is not a specifically rural or a specifically urban phenomenon, the distinction is significant. Densely populated urban areas or regions where there are many municipalities which are close to big cities present different issues and opportunities for co-ordination than sparsely populated rural areas.

Box 3.9. **Examples of merger policies: Denmark and Japan**

Denmark

On 1 January, 2007, after a four-year reform process, the number of Danish municipalities was reduced from 270 to 98, with an average size of 56 000 inhabitants. After a series of public hearings and discussions in the second half of 2004, all Danish municipalities were asked to select the neighbouring municipalities with which they wanted to merge. The threshold size for the new municipalities was set at 20 000 inhabitants. The deadline for selecting partner municipalities was 1 January 2005, two years prior to the actual mergers. Thirty-two municipalities (located largely around Copenhagen) remain the same because their total inhabitants exceeded 20 000 and so they were not obliged to merge. Between mid-2004 and the end of the year, municipalities negotiated with potential partner municipalities and citizens were given the opportunity to express their preference through a series of local referenda. Municipal

Box 3.9. **Examples of merger policies: Denmark and Japan** (continued)

amalgamations were voluntary in the sense that the municipalities were able to choose their partners. The central government had the option to intervene if voluntary agreements could not be reached. Ultimately, however, the central government intervened in only two cases. The primary goal of the merger has been to improve the quality of municipal services by transferring new responsibilities from county level to municipalities and, by increasing their size, to ensure that they can assume these new responsibilities, which include environmental control, adult education and specialised social services. Municipalities will also transfer responsibilities for assessing and administering taxes to the national level. Efficiency concerns were also among the reasons that municipalities were merged. It was assumed, for example, that the new municipalities will benefit from economies of scale. However, this consideration was generally secondary to the larger concern of quality of service provision.

Japan

Japan is a unitary country with a two-tiered sub-national system comprising 47 prefectures and 1 795 municipalities as of March 2008. The country has experienced three periods of major municipal merger since the late 19th century. During the Meiji era the number of municipalities fell from 71 314 in 1889 to 15 859 the following year. In the 1950s, during the Showa era, mergers reduced the number from 9 868 to 3 472 municipalities. Finally, during the Heisei era the number of local entities dropped again from 3 232 in 1999 to 1 820 in 2006. The primary motivations for the recent round of mergers, where to: *i*) promote further decentralisation; *ii*) address demographic shifts and, in particular, the ageing population; *iii*) to encourage mobility; and *iv*) to address serious fiscal constraints at the central and sub-central levels. The total long-term debt of both central and sub-central government was approximately JPY 775 trillion (approximately USD 7 trillion, or 180% of GDP, by far the highest ratio among OECD countries), with the portion of debt held by local government expected to exceed JPY 204 trillion at the end of 2006. Municipal mergers are seen as a way to enhance the efficiency of local government.

While the Japanese government did not target an optimal size as part of the merger process, it did set a target of 1 000 municipalities. Local governments were encouraged to merge prior to 31 March 2005 (the expiration of the Special Merger Law), when localities would no longer be eligible for national subsidies for amalgamation. Currently, based on the New Special Merger Law of 2005, some incentives will still be given to the merged municipalities until the end of March 2010 to further promote municipal mergers.

Japan encountered a variety of challenges during the latest merger. There were community concerns about the naming of the new municipality, deciding whether to absorb or be absorbed by a municipality, determining the location of the new city hall, and setting the merger date. These problems often led to suspicion about the mergers and municipalities among citizens, mayors and councillors. As such, explaining the context, justifications and benefits of mergers was important. With respect to the efficiency gains of amalgamation, one study optimistically estimates an overall reduction in expenditures of JPY 1.8 trillion (USD 16 billion) after 2016. Savings would come from reductions in personnel costs and investment savings. However, short-term expenditures are expected to rise over the next ten years, due to the integration costs in areas such as information systems and infrastructure development.

Source: OECD (2006), *Workshop Proceedings: The Efficiency of Sub-Central Spending*, OECD Network on Fiscal Relations Across Levels of Government; updated by delegates from Japan.

Co-ordination challenges in urban and rural areas

In large urban areas, amalgamations are often promoted on the grounds that a bigger municipal government would improve the effectiveness of public service delivery and thus increase the competitiveness of the metropolitan region. With amalgamation, higher level governments try to off-load certain responsibilities and limited powers to the municipal level. Another objective is to rebalance population growth and patterns of social structure within metropolitan regions. In many cases, amalgamation was implemented as a response to urbanisation and urban sprawl by annexing small jurisdictions to a large municipality. This was done in Korea, when metropolitan regional tiers were created in 1995, in Istanbul in 2004 with the 2004 legislative law that extends the administrative boundaries to fit the provincial level, in Madrid during the 1940s-1950s, and Melbourne at the end of the 1990s. These arguments have also been advanced by provincial policy makers in Canada, leading to mergers in large metropolitan areas of Halifax in 1996, Toronto in 1998 and Montreal in 2002.

In contrast to high-density metropolitan areas, rural areas across OECD countries often suffer from their low-density character, which makes it difficult to provide public goods and to exploit economic potential. A problem frequently encountered in sparsely populated rural areas is that administrative boundaries, existing fiscal schemes for transfers to local governments, and legal instruments often do not correspond to the functional boundaries that may contain the necessary elements to attain a sufficient level of resources to support self-sustaining growth. In this context, small municipal authorities often turn to collaboration to attain a more efficient size for the provision of public services. Moreover, as administrative boundaries do not necessarily coincide with areas that are relevant economically, municipalities can co-operate with the aim of playing a more effective role in local economic development through exchanging information, sharing responsibility for certain investments and programmes and dealing with territorial externalities. This approach to emphasising the potential links via increased local co-operation runs contrary to the traditional focus on mechanisms that compensate for comparative disadvantages of lagging rural regions.

Pooling resources and achieving economies of scale require an adequate spatial organisation adapted to a small functional region, usually organised around one, or maybe two, small to medium sized towns. However, the size of natural areas of development or functional areas can vary from one small rural area to another, depending on its geographic environment, natural resources, amenities, population density, skills and infrastructure. In Canada, the Community Futures Corporations was set up to foster innovative development programmes with the support of the federal and provincial governments. They cover territories much greater in size than their European counterparts. By contrast, the *Pays*, or rural regions, in France vary in population range by a factor of one to five, but most consist of fewer than 30 000 inhabitants. In practice, the spatial characteristics of these groupings vary widely across OECD countries.

In linking rural municipalities together, the main town often acts as a public and private service centre for the whole area (social services, sometimes a hospital, banks) while representing a sizeable portion of employment. In optimal situations, this hub is adequately linked to the domestic transportation network. The Irish Spatial Strategy retains these rural hubs as major elements in efforts to foster the development of rural areas and links these, in terms of infrastructure development to "Gateway" cities at the regional level, to which the former need to be properly connected. In France, the

delimitation of a *Pays* follows a certain number of guidelines to ensure that the small territory responds to a degree of economic logic, linked in particular to employment. In Mexico, rural micro-regions are defined through a top-down approach based on socio-economic indicators combined with other spatial indicators through the use of geographic information systems (GIS).

In general, evidence shows that the most extreme form of merger only makes sense where the zones or municipalities are very close to each other geographically. What may be considered appropriate policy for urban areas may not help much in dispersed rural communities where the delivery of public services is an important tool for regional development objectives (*e.g.* Norway). The case of the Canadian Province of Quebec also illustrates the importance of developing differentiated policies for urban and rural areas. In the course of its municipal reform, between 1999 and 2002, the provincial government was highly aware of the fact that heavily urbanised areas, rural areas and mixed urban/rural areas each required their own special strategy. The decision was made to consolidate municipalities in urban and metropolitan areas, strengthen the intermediate regional structure in rural areas, and step up inter-municipal co-operation in mixed rural/urban areas. This differentiated strategy aims to take into account the fact that these three types of municipal environments have different skills and use these skills in different ways.

Cross-border co-operation: governance across international boundaries

Interest in mechanisms for managing cross-border regions is the result of two distinct international trends: *i*) supra-national integration is reducing trade barriers between countries; and *ii*) decentralisation is putting more power into the hands of sub-national governments. Both trends increase the feasibility and potential benefits of collaboration across borders. Cross-border regions typically suffer from fragmentation of markets, labour force and institutions. Often, border regions feel the friction created by diverging fiscal or labour market regulations and some try to circumvent this friction through intensified cross-border co-operation. The establishment of joint planning committees would mean greater integration of institutions and unified development plans. Integration of physical infrastructure would result in, for example, the reduction of travelling times between centres on different sides of the border and completion of "missing links" in the infrastructure system. The creation of a functioning cross-border region where these weaknesses are addressed and complementarities are maximised promises significant benefits for the participating regions, but remains a difficult challenge.

Indeed, while the concept is clear, and many elements that would constitute a cross-border integration strategy are obvious, the practicalities of formulating and managing a coherent strategy are not. Cross-border governance can be defined as the establishment of and adherence to a set of incentives, norms and organisations that are set up to co-ordinate policy making in a region where the functional area of economic activities does not coincide with the geographical pattern of political jurisdictions. The mismatch between catchment areas and political jurisdictions leads to negative externalities and financial imbalances and can complicate coherent planning for region-wide infrastructures and network industries. The issue for policy makers is to find governance mechanisms, *i.e.* tools and incentives, that enable policy coherence in spatially and economically homogenous, but politically fragmented, areas. Because the interest in building a cross-border integrated region is not only a local issue, non-local actors are strongly involved and their interests are reflected in the formulation of policies and

institutions to encourage cross-border exchanges. The interest "matrix" is vertical as well as horizontal, national (even supra-national) as well as local, and both public sector and private.

While cross-border regional co-operation is strongly supported by the EU and is considered as a bottom-up tool for reinforcing integration among EU members, specific programmes have not automatically resulted in the establishment of new public-private alliances to address regional and local development issues. At its most successful, collaboration has worked mainly where public agencies have been strongly involved and had a direct say in project definition and implementation. This differs from the pattern in North America, where governance structures tend to be more flexible, more oriented towards a few purposes, better able to react to specific problems and more driven by the private sector and local governments. These confirm that cross-border co-operation has a very pragmatic appeal in North America (see a variety of examples in OECD, 2005a).

Box 3.10. **Improving public service through merging administrative units: findings from OECD comparisons**

Neither academic research nor evaluations made by public or para-public bodies have shown strong consistent evidence that merging municipalities leads to economies of scale. Thus, the promotion of co-ordination through mergers or co-operation cannot be justified purely on the basis of economies of scale. Economic gains require time-consuming changes in work processes and municipal organisation, and spending rises in the short-term for investment decisions that were not possible before pooling funds. Instead, issues such as standardisation of services, strategic alliances for development, financial constraints, community life and equity should be considered.

- Since the efficiency case for amalgamations and co-operation is weak, other aspects must be taken into account. In particular, there can be a "democracy cost" if mergers or co-operative arrangements shift power away from locally elected officials to civil servants or elected officials of other municipalities.
- In addition, merging competitive municipalities may lead to the loss of benefits previously associated with competition. Co-operation could lead to awkward situations, as when municipalities collaborate in some public service areas but remain competitors in terms of territorial attractiveness. There could also be a loss of flexibility and responsiveness to changing conditions, as small municipalities may have an advantage in this regard over large municipalities.
- Whether governments choose mergers or co-operation, arrangements need to be structured to take account potentially perverse incentives. As gains from co-operation and amalgamation appear to be positively associated with organisational restructuring (*e.g.* reductions in administration), policy makers should identify mechanisms to minimise the "lock-in effect" of civil servants. Without commitment to restructuring, there is no incentive to re-organise the number of civil servants, which can prove costly over the long-run. Other perverse incentives include opportunistic and superficial co-operative arrangements which serve largely to attract central government funding, but do not maximise efficiency or quality of local government services.
- Despite difficulties in implementing and governing it, cross-border co-operation between regions is a potentially effective tool for addressing global challenges like environment or large infrastructure projects for facing climate change or the economic crisis.

Source: OECD Territorial Reviews.

Providing incentives to improve performance and build capacity

As a basic definition, sub-national capacity relates to the ability of sub-national authorities to fulfil their mandate, including both "official tasks" (the functioning of the body) and "political commitments" (the variety of promises made during electoral campaigns). These are different tasks and require different types of skills and experience. A good political leader might not be a gifted administrator, but is accountable for the promises made during an electoral campaign. At the same time, regional development strategies have to be respected (with adjustments due to specific changes in the context), even if the political time is short. This objective might be specifically challenging for countries where local elected officials cannot be re-elected (Mexico). It has also been observed that local public investment is clearly influenced by political timing (it increases just before and just after an election, in Belgium for example). Sub-national capacity will depend on local officials' qualifications and organisational aptitudes, and their ability to evaluate results, interact with private and public stakeholders and contribute to the design and the implementation of a strategic vision for the territory. CIDE research institute in Mexico has compiled an index of "institutional competence" which refers to the governmental, legal and regulatory features under which socio-economic interactions take place in the cities (Cabrero *et al.,* 2003). Interaction with local businesses raises significant risks of costly renegotiation and of capture (Box 3.11). One possible solution is a more participatory approach, including citizens in the policy-making process, as well as institutionalisation of "civil society" representatives through specific bodies (*e.g.* the *Conseils économiques et sociaux – regionaux et nationaux* in France). Strong external financial controls are also desirable.

Box 3.11. **Interacting with the private sector for investment and strategy development**

Because of the risk of "capture", public authorities at the sub-national level must develop capacity for long-term contract negotiation, and to address risky commitment and investment. These capacities need time to be built, but "learning by doing" might be very costly. For example, for the International Monetary Fund, renegotiations of contracts are especially frequent when sub-national capacity is lacking; about half of all PPPs get renegotiated in Latin America, for example (Medas, 2007).

Interactions with private operators can also help define an appropriate strategy for long-term development. In such cases, sub-national governments are confronted with a trade-off between gaining knowledge for regional strategy through dialogue with local firms, and being lobbied or even captured for engaging in projects which are more about creating future public markets for the private firms that participated in the strategy definition, than about development projects for the whole area (OECD, 2007). Weighing up this risk involves assessing the long term results of short term decisions. A clear understanding of citizens' and local companies' interests is also required when negotiating with possible external investors (see various examples of taxes and regulation favours allocated to foreign investors without any possibility to enforce a contract with these companies for respecting "long-term presence" clauses).

Source: Medas Paulo (2007)-IMF presentation to the OECD Global Forum on Governance, Rio de Janeiro, Oct. 2007.

In practice, the evaluation of the impact of regional development policies on regional economies, on reducing regional disparities and competitiveness remains limited. This is despite the fact that such evaluation would be crucial for linking cause and effect and attributing changes in outcomes to programmes activities. Because of this, many countries have adopted indicator systems for assessing performance, especially sub-national indicators (Table 3.3).

Indicator systems contribute to a common frame of reference for dialogue about regional policy. They also promote learning and orient stakeholders towards results. When carefully coupled with specific incentive mechanisms and realistic targets, these indicators can stimulate and focus actors' efforts in critical areas. They thus help promote capacity development and good management practices. In addition they are effective tools for reinforcing accountability of stakeholders at all levels of government by improving transparency. Assessing a variety of such performance indicator systems has led to a better identification of the benefits and "costs" of their implementation.

Performance indicators produce benefits, but have limited feedback into decision making. Their main impact is their ability to reinforce linkages among regional development policy stakeholders (at different levels of government) and their contribution to learning and capacity building.

Indicator systems are of limited use for selecting policy strategies and actors or determining resource allocation. But evidence does show that indicator systems are useful mechanisms for monitoring the implementation of policies and programmes. The EU case highlights the value of two key mechanisms for ensuring that programme implementation stays on track: the decommitment rule and the mid-term review process. The former worked to ensure that funds were spent on time as committed, while the latter mechanism forced countries and programmes to take stock of progress and led to some reprogramming. The case of the Italian national performance reserve shows that not only can indicators be used to monitor whether outputs and outcomes are being produced, but also if the process of policy implementation is characterised by effective public administration. In the US, an internal monitoring tool – the balanced scorecard – is used to ensure that short and intermediate process objectives are achieved within the organisation. Finally, the UK case demonstrates continued efforts to monitor programme implementation (*e.g.* through outputs) in a manner linked to national policy goals.

Performance indicator systems also permit the assessment of progress and accounting for results. For example, public annual performance and accountability reports summarise the performance of the US EDA against specific targets; similarly publicly-reported performance enhances the legitimacy of the English RDAs. The mid-term review provided EU officials with indicators on progress across multiple countries, while simultaneously requiring awareness at the national level. Certainly, both the EU and Italian performance reserves aimed to hold regional actors accountable for results. Italy, however, proved somewhat more successful in doing so.

Table 3.3. **Examples of indicators used by different OECD countries to measure sub-national services**

Category		Examples	Country/system
Context	Demographics	• Population, gender, age marital status, births, deaths	
	Service context	• Irregularities in water distribution • Per capita average expenses for theatre and concerts • Air pollution due to transportation	Italy (regional policy)
Inputs	Materials	• Municipal nursing home beds	Finland
	Staff	• Number of required staff for the service • Numbers and qualifications of teachers	Turkey/BEPER Finland
	Finances	• Net operating expenditures • Education expenditures • Deflated expenditures and revenues	Norway/KOSTRA Finland Netherlands
	Policy effort	• Capital expenditure by level of government and sector • Preparation and approval of territorial and landscape programming documents	Italy (regional policy)
Outputs	Policy outputs	• Number of inhabitants served • Amount of solid waste collected • Visits to physician, dental care visits • Building permits issued • Number of passports, drivers licenses issued	Turkey / BEPER Finland Australia Netherlands
	Service coverage	• Percent of aged inhabitants receiving home services • Percent of children enrolled in kindergarten • Recipients of social services as percent of the population	Norway/KOSTRA
	Efficiency	• Government funding per unit of output delivered • Spending efficiency: achievement of payment level equal to 100% of previous year's financial appropriation • Children 1-5 years in kindergartens per full time equivalent • Number of children per teacher • Cost per user	Australia Italy (regional policy) Norway/KOSTRA Sweden (education) Sweden (elder care)
Outcomes	Policy outcomes	• Education transition rates • Response times to structure fires • Improved language skills of immigrants	Norway/KOSTRA Australia Netherlands
	Effectiveness	• Effectiveness of outputs according to characteristics important for the service (*e.g.* timeliness, affordability) • Disease-specific cost-effectiveness measures • Passengers • Share of completion of students in secondary schools	Australia Finland (hospitals) Netherlands (transport) Sweden (education)
	Equity	• Geographic variation in the use of services • Units per 1 000 members of target group • Recipients of home based care as a of share inhabitants in different age groups	Finland (hospitals) Germany (Berlin) Norway/KOSTRA
	Quality	• Number of days taken to provide an individual with needed assistance • Number of different care-givers providing home care for the elderly to a single individual	Netherlands Denmark
	Public opinion	• User satisfaction with local services	Netherlands

Sources: OECD (2006), Workshop Proceedings: The Efficiency of sub-national Spending, OECD Publishing, Paris; 2007 OECD Fiscal Network questionnaire, quoted in "Promoting Performance: Using Indicators to Enhance the Effectiveness of Sub Central Spending", OECD Publishing, Paris.

Box 3.12. **Examples of performance indicator systems and incentives**

The European Union (EU) Structural Funds: This case examines mechanisms for monitoring the performance of EU Structural Funds between 2000 and 2006, with a specific focus on the "performance reserve". The reserve was an inventive mechanism to encourage performance improvement by attaching explicit financial incentives to indicators and targets. It was implemented in a broader context of monitoring and evaluation activities by the EU that included a mid-term evaluation process and a decommitment (N+2) rule. The reserve set aside 4% of a programme's total budget and distributed it only if some specific objectives were achieved. In consultation with the European Commission, member states selected their own indicators, chose their own approach to assessment, and each used the mechanism differently. The case study reveals the political and technical challenges of implementing such a system, while also highlighting the learning which took place. Although the mechanism is no longer compulsory, it helped to raise awareness of the importance of monitoring and evaluation, as well as the need to improve monitoring systems and capacities. It was a learning experience at both the EU and national levels in terms of designing systems, selecting indicators, achieving targets, and using explicit financial incentives.

The Italian national performance reserve: Italy is a unique national example of the use of explicit incentives to improve the performance of regional development policy. During the 2000-06 programming period for EU Structural Funds, Italy extended and reinforced the EU approach by adopting a national performance reserve aimed at promoting the modernisation of public administration. This reserve, which set aside 6% of the programme's budget, was developed collaboratively between the central government and regional actors. Specific arrangements were made to ensure transparency and enforcement of the approach. The extent to which the results of the national performance reserve translated into improved regional economic performance is unclear. However, Italy was sufficiently satisfied with the results to subsequently develop a new incentive mechanism that moves beyond process and output targets, and focuses on rewarding achievement of outcomes.

The monitoring system for England's Regional Development Agencies (RDAs): This case highlights the dynamic nature of performance indicator systems. Since being established in 1998, the English RDAs have been subject to a number of different approaches to monitoring. With each change, the national government has aimed to enhance the quality of the monitoring process. Over time, the system has become increasingly flexible and accommodated feedback from the RDAs themselves. The most recent shift has been to allow RDAs to decide how best to measure their progress towards overall regional policy targets. Under this new approach, outputs are expected to demonstrate short-term results and form the basis for impact information gained through evaluation.

The monitoring system for the US Economic Development Administration (EDA): This case demonstrates the importance of using indicators to generate information that can be used for decision making on both a short and a long-term basis. As a national agency, the EDA is subject to the US Government Performance and Results Act (GPRA), which requires all federal agencies to report to Congress on the achievement of specific goals. As the results of EDA investments often materialise over a number of years, the administration projects and reports on indicators which track outcomes three, six and nine years after programme investments have been made. However, these and other data produced for GPRA, have limited use for short to medium-term decision making. To meet their strategic information needs, the EDA couples reporting to Congress with the use of an internal balanced scorecard to monitor short-term progress.

Source: OECD (2009), Governing Regional Development Policy: The Use of Performance Indicators Systems, OECD Publishing, Paris.

Despite the fact that using indicators is often initially perceived as a constraint, they help to improve relations among levels of government. The performance indicator systems reviewed also improved relations between stakeholders within the same level. For example, the two performance reserve mechanisms in place in Italy (EU and national systems) contributed to relations between the central government and the European Union, and to relations between the centre and the regions. The performance framework in England provided a basis for collaboration both across regional development agencies and with the central government departments. Interaction with sub-national actors is less intense in the US. However, the balanced scorecard revision process provides ongoing opportunities for regional offices to interact with headquarters' staff on strategic performance issues.

Finally, and importantly, performance indicator systems triggered learning processes, improving policy governance and the delivery of public investment and services. While the EU performance reserve was introduced only as a voluntary tool in the 2007-13 programming period, between 2000-06 it did encourage learning within member countries. In France, for example, new attention was given to the value of monitoring and evaluation instruments, and also to the relationship between central and sub-central levels of government. At the supra-national level, knowledge was gained about the use of incentives to promote performance, the need to reduce complexity in system design, and the capacities of different actors to set realistic targets. In Italy, the national performance reserve proved highly useful for revealing information about sub-national capacities, the value of central/sub-central partnership, and the usefulness of indicators and incentives for promoting performance. The UK case clearly demonstrates that learning is an ongoing process. Multiple adjustments have been made to the performance framework for RDAs. The approach recently put in place will give new emphasis to the achievement of outcomes. In the US, the EDA continues to invest resources in examining the relationship between inputs and outputs in order to produce lagged indicators, particularly for public works investments (OECD 2009a).

When setting up or improving an existing performance indicators system, the following should be borne in mind:

- There is no "optimal" design for performance indicator systems in regional development policy.
- The implementation of a performance indicator system is an iterative process, as it is part of a larger dynamic of testing new approaches for measuring and promoting effective public service delivery, evolving as information about its usefulness is revealed.
- Incentives are inevitable with the use of indicator systems. The incentives emerge because reporting performance data are not neutral. The strength of incentives depends on how information will be used and by whom. Attaching explicit rewards (or sanctions) to performance data can be a powerful way to encourage effort and improvement; however an explicit monetary incentive is not a sufficient condition for success. Causal linkages between actions and results might be very difficult to identify, which could create distortions in the implementation of explicit incentives.

- Partnership between central and sub-central levels of government is crucial, if the objective of monitoring is not just to control, but to build co-operation and promote learning. Rewards and sanctions are more likely to create the intended incentive effects if there is strong prior commitment from all levels of government to the rigorous assessment of performance.

- Regional development policy has impacts that materialise over an extended period of time. The case studies in the boxes above reveal a move towards outcome measures (in Italy and in the English RDAs). However, orienting an indicator system solely toward these outcomes can reduce the flow of information needed for strategic short and medium-term decision making. Thus, indicator systems should always provide information on inputs, processes, and outputs that are relevant for current activities.

- It is clear that tracking developments in regional development policy is difficult. Capacity is needed for fulfilling indicator system requests, as well as for using them to improve public action (Box 3.13). So, while these systems can support capacity building, they also require the initial competences for using them. The characteristics of regional policy, the capacities of stakeholders, issues of data availability, and the "costs" associated with developing and using indicator systems can complicate the task of effective monitoring. These considerations should temper expectations and be addressed by setting aside resources for developing and managing indicator systems, as well as technical assistance and training where needed.

Box 3.13. **Evaluating and strengthening local capacity: summary of key findings**

Strategies for building local capacity are complex and mainly based on co-operative approaches, iterative processes and incentive mechanisms. The use of performance indicators is especially relevant in this perspective. Regarding incentives (implicit or explicit) attached to evaluation, a key element must be underlined; there is a need for "neutral" evaluators in order to build trusting relationships, instead of promoting possible bargaining and influencing games.

To what extent can central governments (or supra-national ones) be both evaluator and grantors? One could say that since the higher level of government is in charge of guiding and assessing the coherence of the various regional approaches, it has to play a role in influencing the orientation and implementation of regional development strategies. However, such an approach could be undermine the neutrality of performance evaluation. Possible solutions are either "independent" bodies (or those which are considered as such, like the French *Cour des comptes*) or commissions of stakeholders (like the Australian board for allocating equalisation funds among regions).

Source: OECD (2009), *Governing Regional Development Policy: The use of performance indicators*, OECD Publishing, Paris.

Conclusion

There is no "one size fits all" multi-level governance structure to ensure policy coherence (both in terms of decentralisation structure and in terms of arrangements between line ministries and levels of government). As a result, policy reform can take different forms. In general terms, six areas should be addressed to help improve coherence:

- **Policy framework**: A clearly-articulated policy message that: *i*) identifies one or more key policy goals; *ii*) promotes a common understanding of regional policy; *iii*) sets the parameters for actions and evaluation; and *iv*) is supported by political commitment, supported by strong co-ordination mechanisms among line ministries to address regional development issues.
- **Roles, decisions, and information**: Roles and responsibilities among capable actors that are clearly allocated; clear leadership at the regional level; a gatekeeper role for multi-level collaborative arrangements; decision-making assignments and methods that are clear and transparent; information flows that are shared and unimpeded; and a mechanism for co-operation among actors.
- **Planning and implementation**: Planning processes that are participatory; policy actions that are aligned with regional policy goals, mutually reinforcing, inter-sectoral and co-ordinated among levels of government and key stakeholders.
- **Timeframe**: Short and medium-term policy actions that are framed by a strategic long-term vision that extends beyond the diagnosis of immediate problems and towards a future agreed upon by stakeholders.
- **Finances**: Financial flows that match policy priorities provide sufficient levels of funding to achieve objectives, and promote co-operation and credible commitments: unified, co-financed and multi-year funding for regional policy.
- **Evaluation:** The infrastructure for and implementation of ongoing monitoring and evaluation in order to assess and adjust policies and programmes.

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Chapter 4

Where Growth Happens:

Patterns of Regional Growth – Country By Country

This chapter complements Chapter 1 by presenting country-by-country data to illustrate the patterns of economic growth identified earlier. In particular, the graphs by country confirm the great variety in patterns of growth, illustrating both instances of convergence and divergence in economic performance across countries. It underlines the strong contribution made by lagging regions to overall national growth. Each country note includes three figures that reveal, respectively, movements in of disparities in GDP per capita between TL2 regions, changes in the relative position of each region's GDP per capita and the contribution of each region to national GDP growth during the past ten years. More specifically:

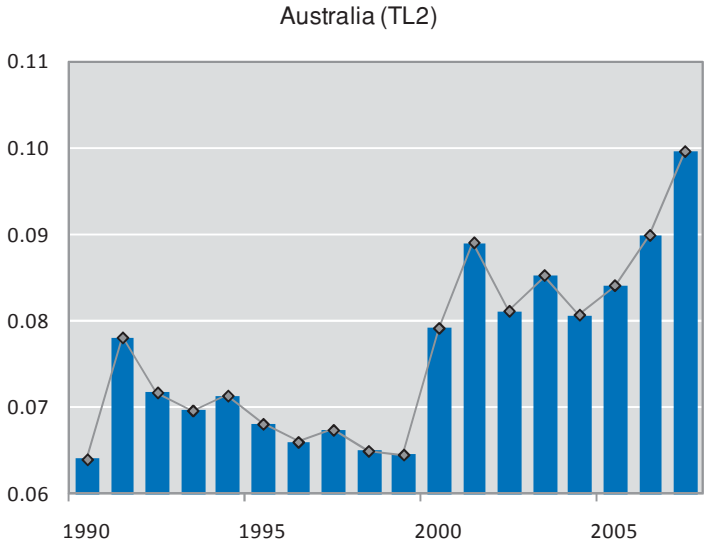
Figure 1 presents the Gini coefficient for each country. The Gini index measures disparities among all regions of a given country. The index ranges between 0 and 1: the higher its value, the larger the inequality among regions in terms of GDP per capita. Inequality can increase over time either because leading regions gain relative to the other regions of a given country or because lagging regions drop further behind. Conversely inequality can decline if leading regions underperform or if lagging regions catch up to the national average.

Figure 2 presents movements in GDP per capita over time for each region in a country. This illustrates whether lagging regions are catching up to national standards or whether the gap between them and the leading regions is widening, as well as whether leading regions have increased their lead in GDP per capita relative to the national average. It also identifies the top performers, those that have improved their relative position over the period studied.

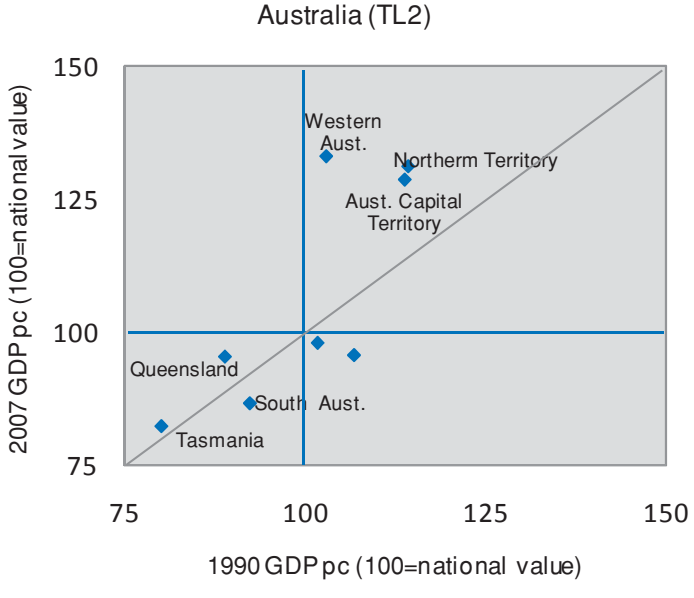
Finally, the map displays the contribution to national growth of each TL2 region over the period 1995-2005. A region's contribution to national GDP depends on its GDP performance but is also dependent on the region's size. More densely populated regions tend to stand out as making the strongest contribution to growth, but there are many examples of regions that make a significant contribution to national growth by virtue of strong performance over the period. This underlines one of the main conclusions from the previous chapter, *i.e.*, that growth is occurring in unexpected places and that this growth, in lagging or peripheral regions, makes an important contribution to overall national wealth creation.

Australia

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007

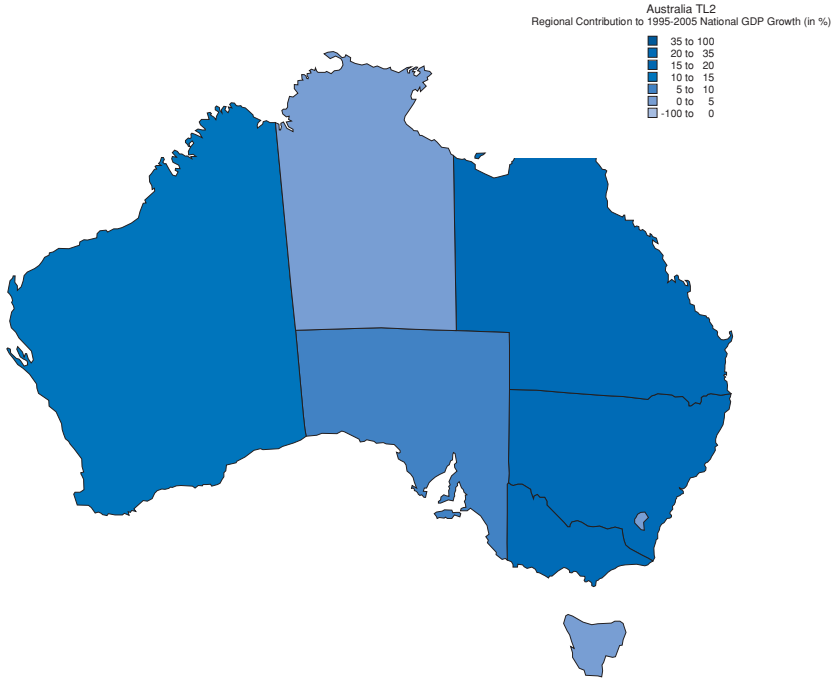


Australia's economy is significantly concentrated. Approximately 60% of the national GDP is produced by two of Australia's eight TL2 regions (New South Wales and Victoria), and almost 40% of the national population live in two of Australia's 60 TL3 regions (Sydney and Melbourne).

Inequality in GDP per capita among Australia's TL2 regions increased from 1990-2007. Although inequality declined between the years 1991-99, it has been steadily increasing since the year 2000. The increase is mainly driven by the strong performance of Northern Territory, Western Australia and Australia Capital Territory. These three regions improved their levels of GDP per capita (relative to the national average) during the past two decades, displaying growth rates in GDP per capita of 3.8%, 2.7% and 2.5% respectively. Due to the small size of Northern Territory and Australia Capital Territory their combined contribution to national growth during 1995-2005 was below 4%.

In contrast Australia's national growth is led by New South Wales, contributing a third of national growth (32%) during 1995-2005 followed by Victoria (22%), Queensland (22%) and Western Australia (13%). Among Australia's lagging regions, Queensland has been catching up to national standards in terms of GDP per capita throughout the past two decades. South Australia has worsened its position and Tasmania's GDP per capita remains little changed at around 80% of the national average.

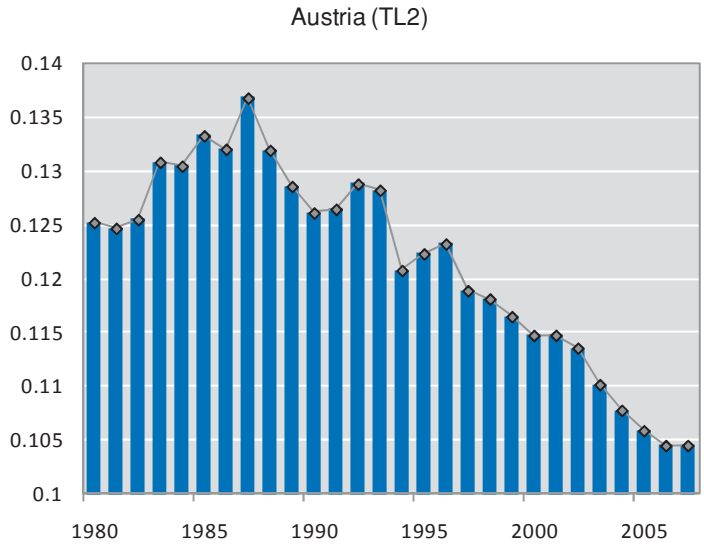
Regional contribution (%) to national GDP growth, 1995-2005



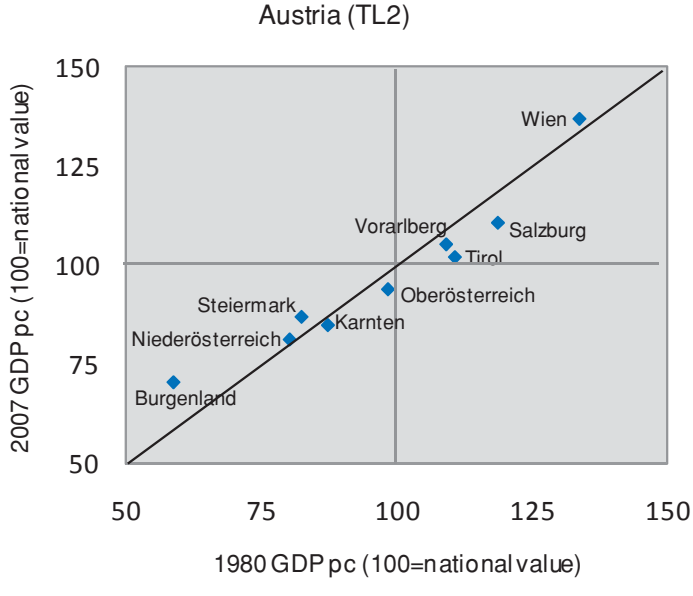
Source: OECD calculations based on OECD Regional Database (2009).

Austria

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



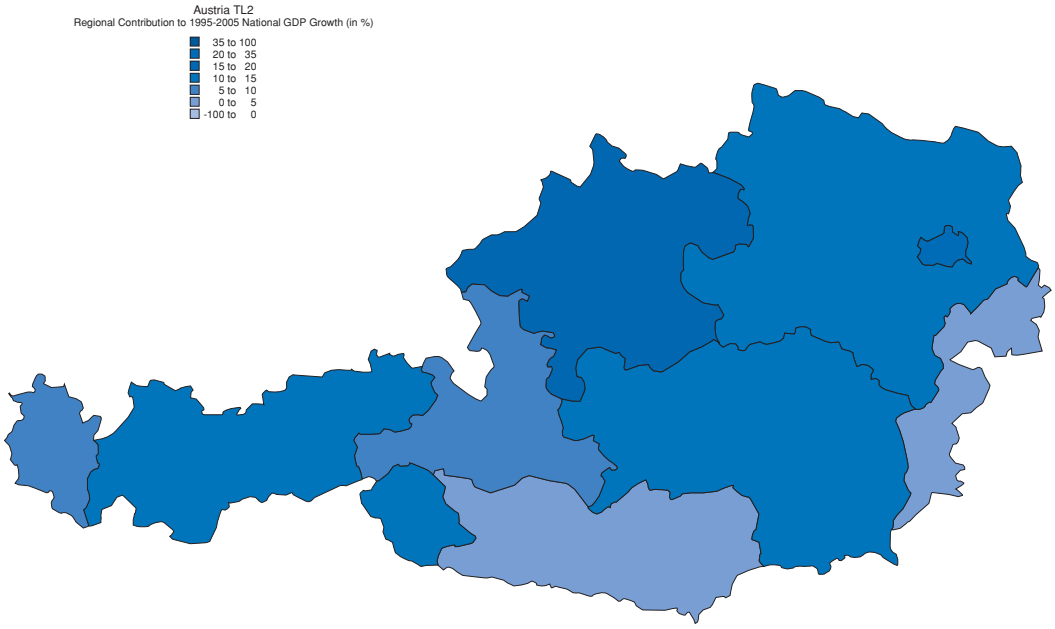
Economic activity is more concentrated in Austria than on average in OECD countries; 10% of Austrian TL3 regions produce 44% of national GDP as opposed to 38% in OECD countries overall.

Inequality in GDP per capita between Austria's TL2 regions has declined over the last 25 years. Although inequality first increased and then fluctuated during the years 1980-92, it has been steadily declining over the past 14 years. In particular, the catching up process of the lagging region Burgenland has contributed to the decline in overall inequality. By contrast, Austria's largest region in terms of GDP, Vienna, has performed below its growth potential, recording the lowest regional growth rate in GDP per capita terms (0.5%) over the period 1995-2005. Despite the low growth rate, Vienna contributes a significant share (25%) of Austria's national growth.

Austria's second largest region Oberösterreich displayed the third highest GDP per capita growth rate (1.4%) during the past decade as opposed to Niederösterreich, Austria's third largest region recording the second lowest GDP per capita growth rate (0.7%). Consequently Oberösterreich contributed to a higher share (18.4%) of the overall growth rate than Niederösterreich (12.3%) during the past decade.

Over the past 27 years, Salzburg and Tirol, two regions with GDP per capita levels above the national average, have lost competitiveness relative to the other regions. In contrast Steiermark has gained it relative position.

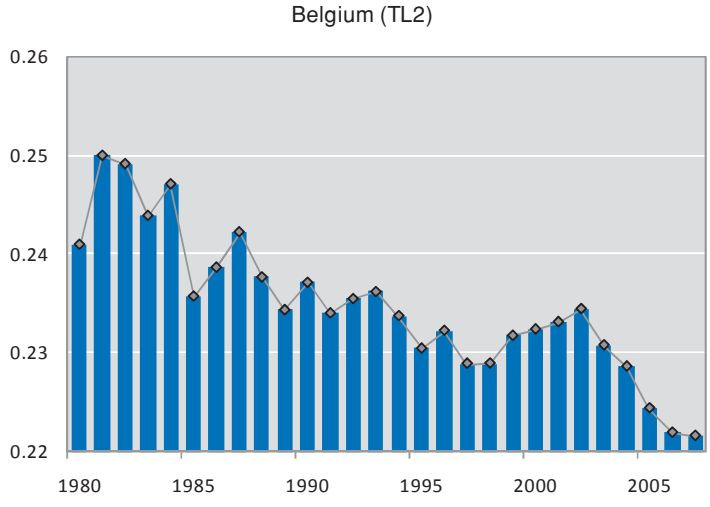
Regional contribution (%) to national GDP growth, 1995-2005



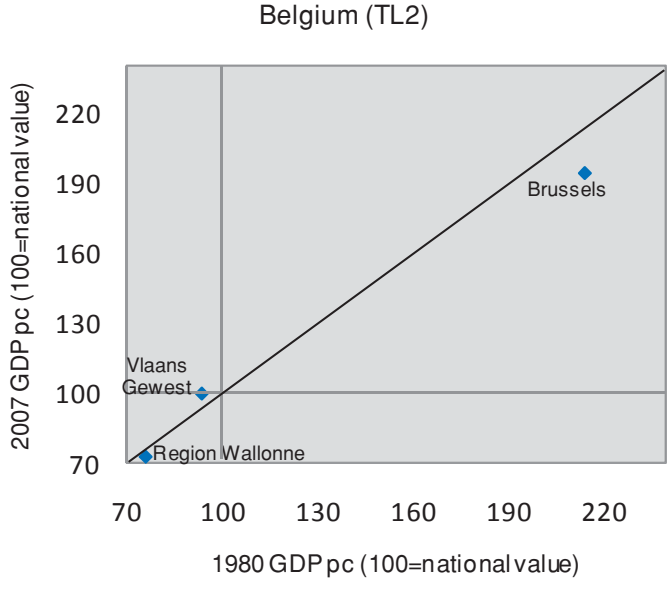
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Belgium

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007

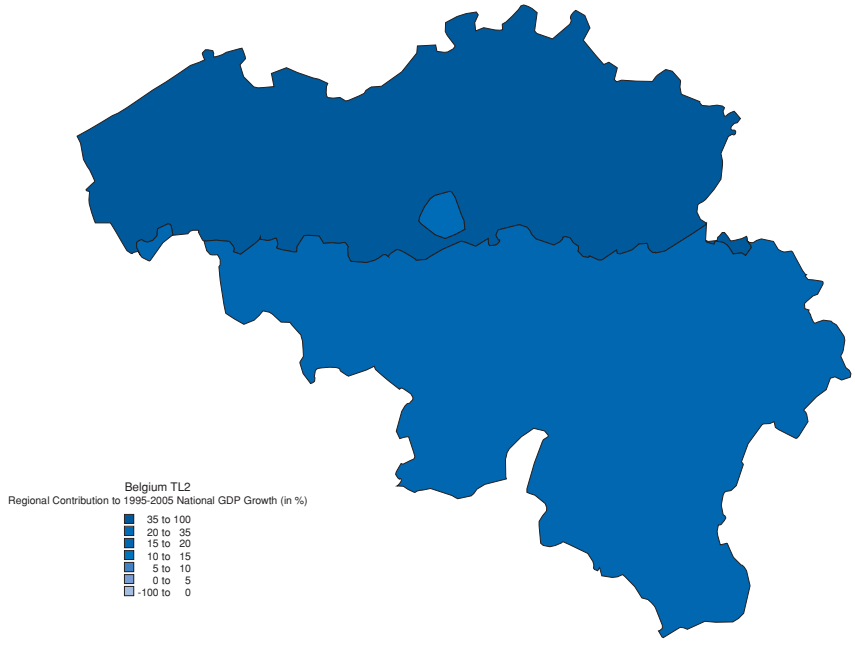


Economic activity in Belgium is not significantly concentrated in comparison to other OECD countries. Its geographical concentration index is among the lowest in the OECD and no single TL3 region produces more than 20% of the national GDP.

Although inequality in GDP per capita among Belgium's three TL2 regions fluctuated during the period 1980-86, inequality has declined over the past 25 years and especially during the past six years. This reduction is mainly driven by caching up of the region Vlaams Gewest, which has consistently recorded the highest growth rate in GDP per capita among Belgium's three TL2 regions over the past decade. Vlaams Gewest's GDP per capita was 7% lower than the national average in 1980 but was equal to the national average in 2007. A relative decline in the performance of the region Brussels-Capital has also contributed to the decline in inequality.

Due to the large size (measured by GDP share) of Vlaams Gewest and its high growth rate, the region contributed more than 60% of total national GDP growth over the past decade. Brussels-Capital contributed 20.2% and Region Wallonne 18.7% of total national growth.

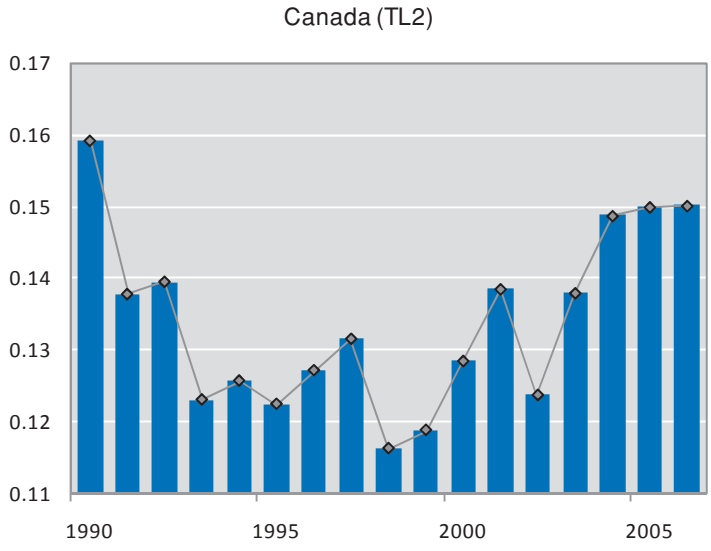
Regional contribution (%) to national GDP growth, 1995-2005



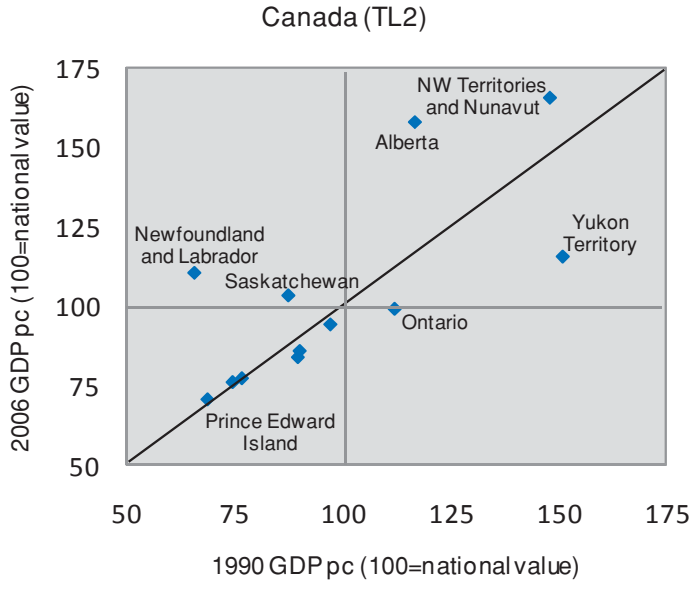
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Canada

Canada Gini index of inequality of GDP per capita across TL2 regions, 1990-2006



Regional performance in GDP per capita over time, 1990 and 2006

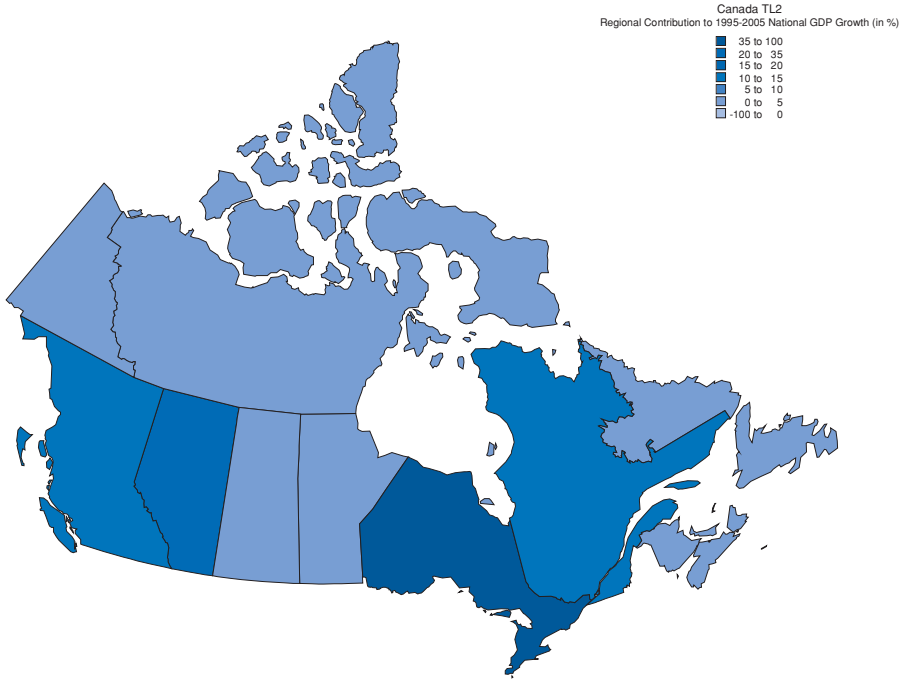


In comparison to other OECD countries, economic activity is significantly concentrated in Canada where just one out of Canada's 12 TL2 regions produces 35.5% of the national GDP (Ontario). Population is also significantly concentrated; according to the index of geographic concentration.

Inequality in GDP per capita among TL2 regions has fluctuated over the past 15 years. During the years 1990-98, inequality declined, while from 1980-2007 it has been gradually increasing approaching the initial levels of inequality present at the beginning of the 1990s. Declines in inequality have been driven by a catching up process in the GDP per capita levels of two regions: Newfoundland and Labrador and Saskatchewan, both of which have seen above average GDP per capita growth rates (6.2% and 3.1% respectively). Two leading regions have also seen relative declines: Yukon Territory and Ontario have displayed the second lowest (1.49%) and the third lowest (1.52%) growth rates in GDP per capita over the past decade. In contrast, the strong performance of two leading regions has acted to maintain disparity levels; Northwest Territories and Nunavut and Alberta have seen the second highest (5%) and third highest (4.9%) growth rates over the decade.

The largest contribution to national growth was made by Ontario, which contributed 41% of overall growth during 1995-2005, followed by Alberta (28%), Quebec (15%) and British Columbia (10.4%).

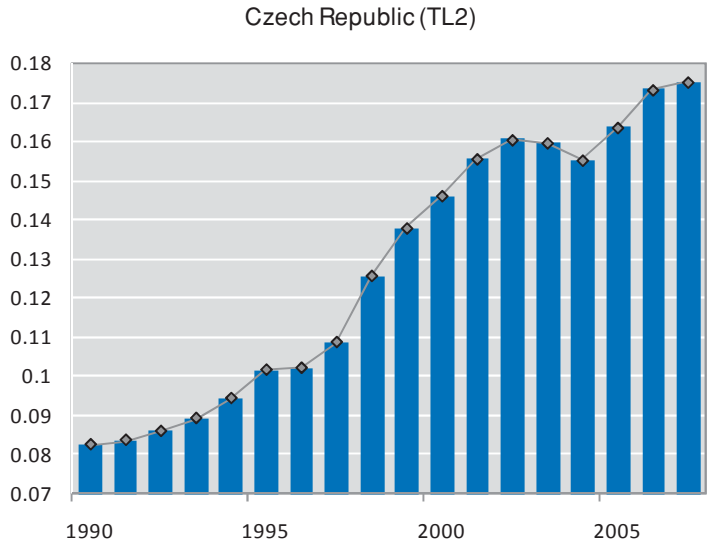
Regional contribution (%) to national GDP growth, 1995-2005



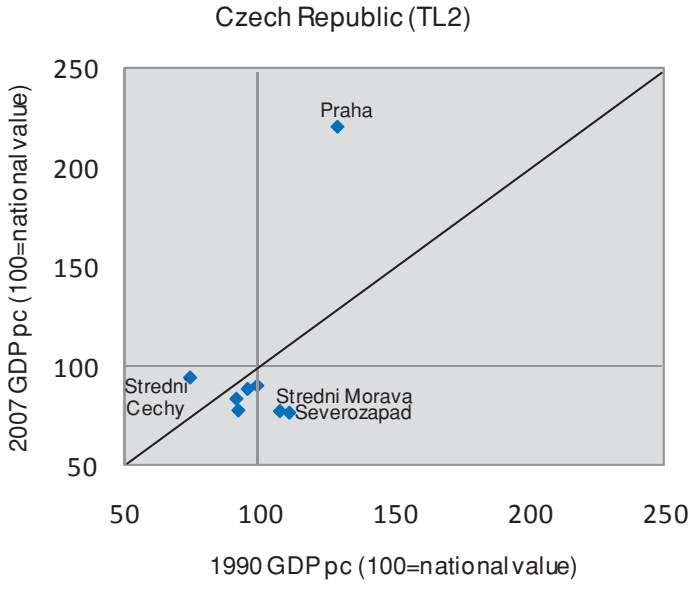
Source: OECD calculations based on OECD Regional Database (2009).

Czech Republic

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007

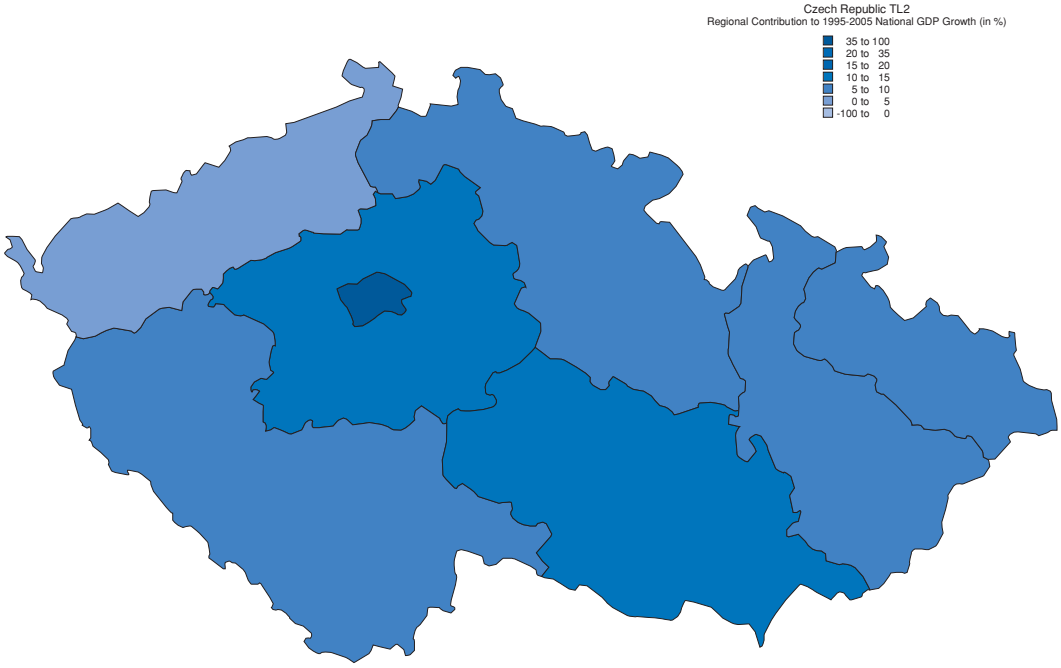


Economic activity in the Czech Republic is not significantly concentrated in comparison to OECD countries. Indeed, the Czech Republic's index of geographic concentration at the TL3 level is the second lowest among OECD countries.

Inequalities in GDP per capita among the Czech Republic's TL3 regions have been steadily increasing since the beginning of the 1990s with the exception of 1995-96 and 2001-03. The increase in inequality has been mainly driven by the buoyant growth rate (4.9%) of the region Praha over the past ten years. As a result of this strong growth, Praha's level of GDP per capita increased significantly. The region Stredni Cechy recorded the second highest GDP per capita growth rate (3.4%) over the past decade. As a result Stredni Cechy reduced its gap in GDP per capita with respect to the national average from 25% below the national average in 1990 to only 6% in 2007. Also notable has been the relative decline of two leading regions, Stredni Morava and Severovychod, which experienced the second lowest (1.7%) and the lowest (1.0%) growth rates in GDP per capita over the decade.

Praha contributed almost 40% to overall growth during in this period. The initially lagging region of Stredni Cechy increased its contribution to national growth to 14% as a result of strong economic growth over the period.

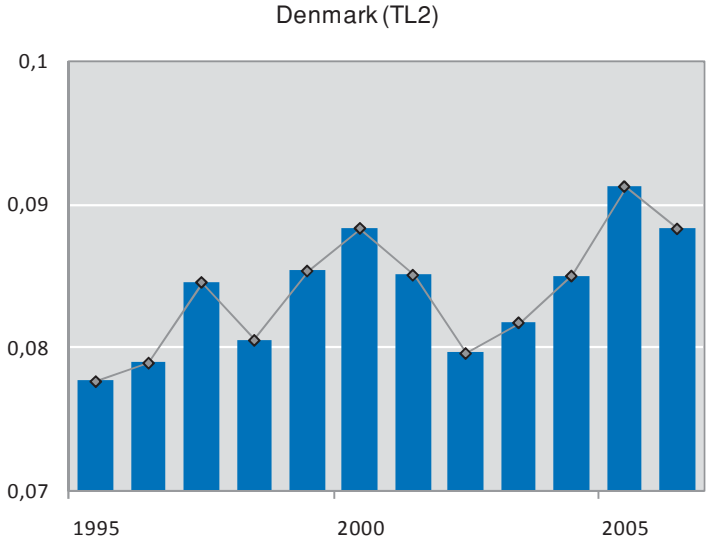
Regional contribution (%) to national GDP growth, 1995-2005



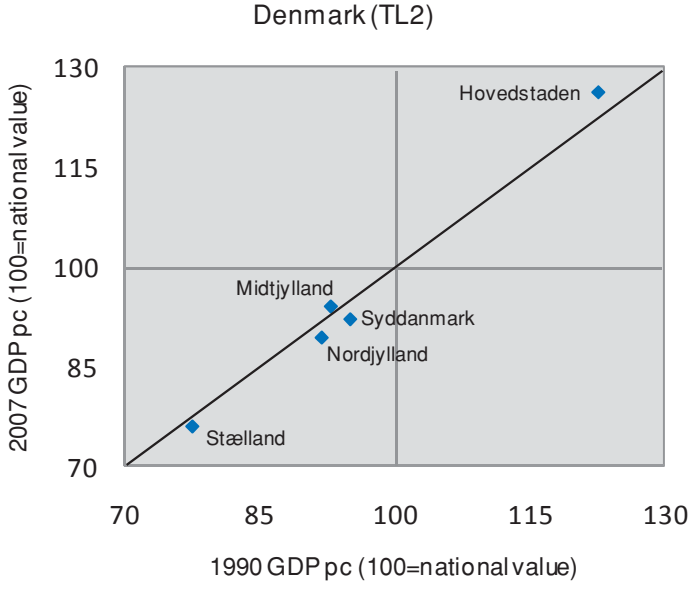
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Denmark

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



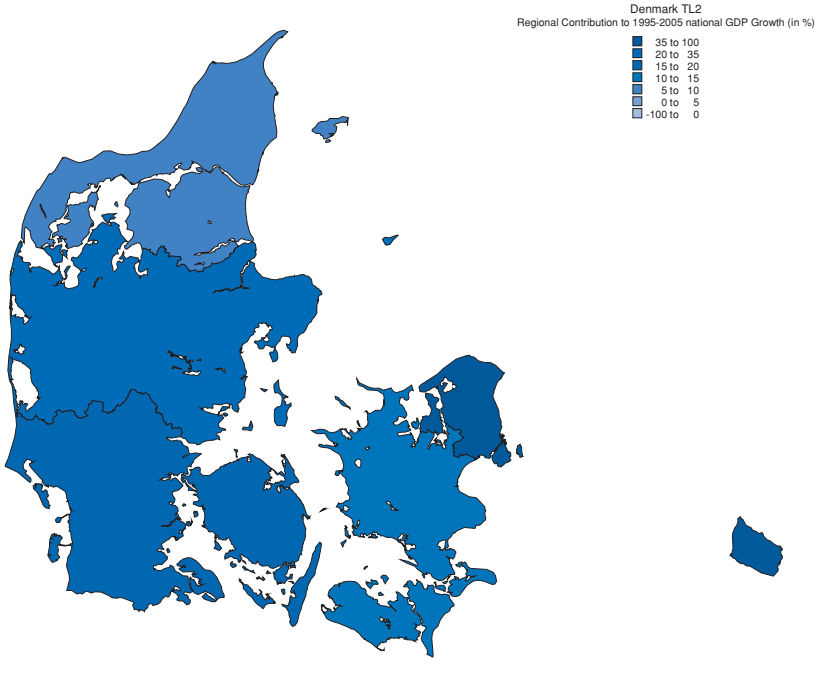
Regional performance in GDP per capita over time, 1980 and 2007



Disparities in GDP per capita among Denmark's TL2 regions increased from 1995-2006, although the increase was not consistent, with contrary movements in several years. Disparities reached their highest level in 2005, but since then regional differences appear to be declining again.

The increase of inequality was driven mainly by the strong performance of Denmark's leading TL2 region Hovedstaden, which recorded the highest growth in GDP per capita (5.3%) among Danish TL2 regions and which significantly outperformed the nation as a whole (4.86%) over the period 1995-2006. As a result of this strong growth, Hovedstaden increased its relative GDP per capita level from being 23% above the national average in 1995 to 26% in 2006. The region contributed 20% of Denmark's output growth over the last decade. While this region increased its share of the national economy, the country's other TL2 regions remained around the same relative positions.

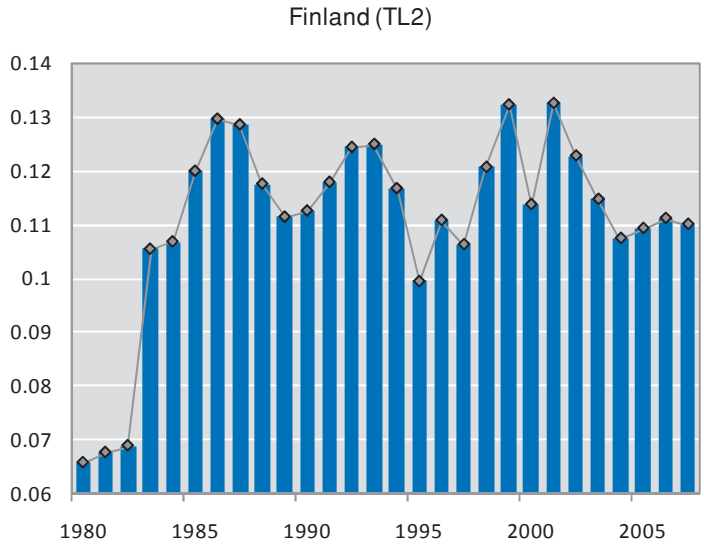
Regional contribution (%) to national GDP growth, 1995-2005



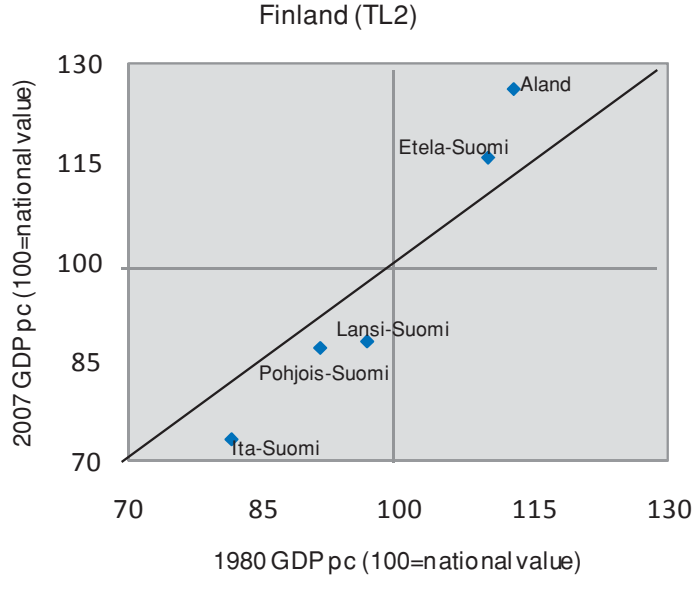
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Finland

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007

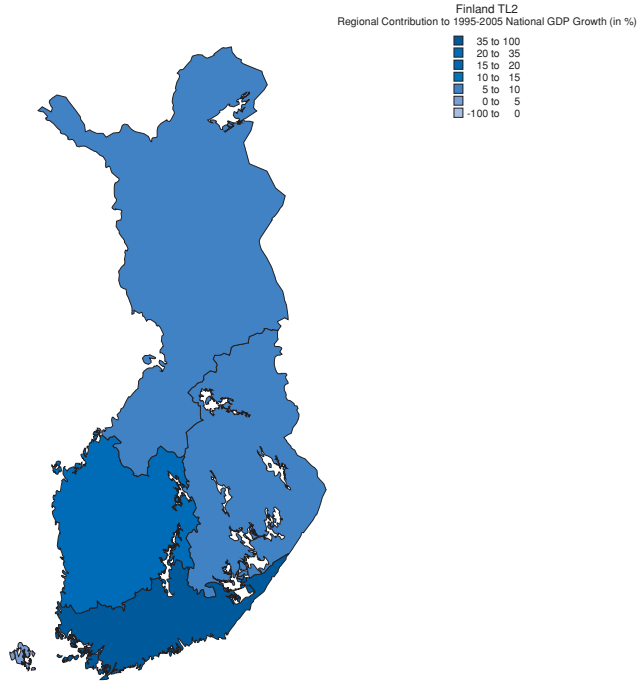


Finland's economy is significantly concentrated in comparison to OECD countries. According to the index of geographic concentration Finland's economy is the fifth most concentrated at the TL3 region level. In fact, 35% of the national GDP is produced by one of Finland's 20 TL3 regions (Uusimaa), and 57% of ational GDP is produced one (Etela-Suomi) of Finland's 5 TL2 regions.

Inequality in GDP per capita among Finland's TL3 regions has increased somewhat since the beginning of the 1980s, although without a clear trend. The two regions with the highest GDP per capita levels (Aland and Etla-Suomi) have strengthened their relative productivity, while the three lagging regions (Lansi-Suomi, Pohjois-Suomi and Ita-Suomi) have seen small relative declines in GDP per capita. Aland's GDP per capita level increased from 13% above the national average in 1980 to 26% above the national average in 2007. In contrast Ita-Suomi experienced the largest decline from 18% below the national average in 1980 to 27% below the average in 2007.

Due to the large size (measured by GDP share) of Etela-Suomi and the region's strong growth rate in GDP per capita over the past decade, its contribution to national GDP growth stood at 65% followed by Lansi-Suomi (21%) and Pohjois-Suomi (8.6%).

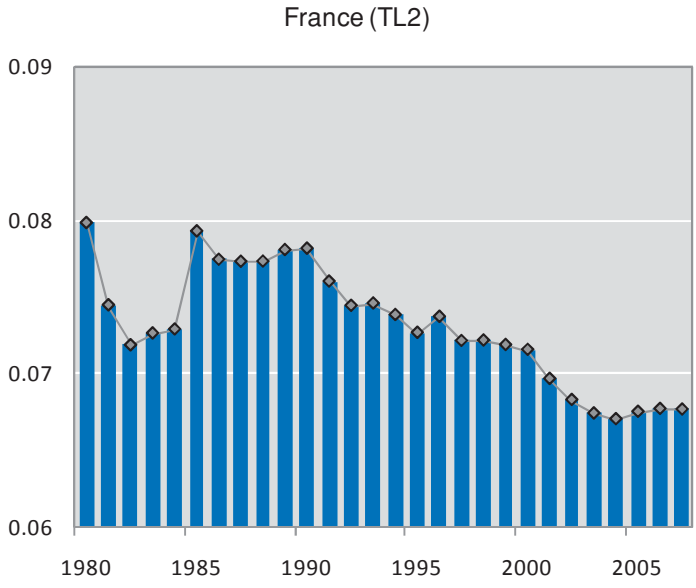
Regional contribution (%) to national GDP growth, 1995-2005



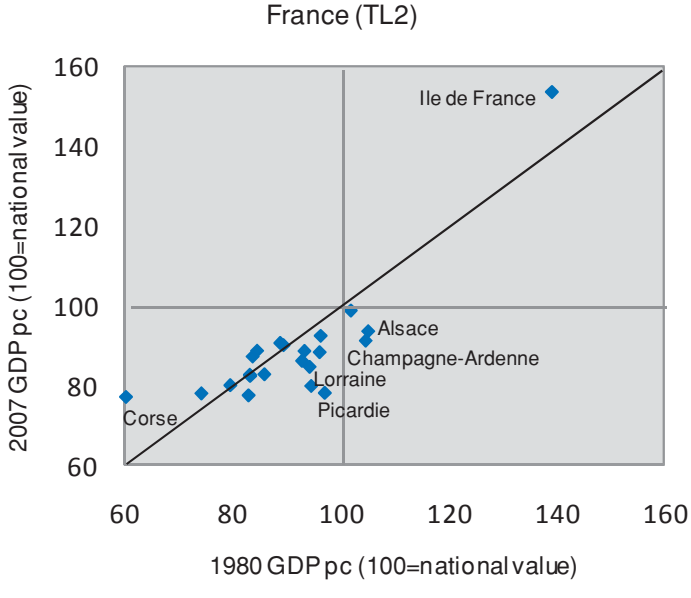
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

France

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007

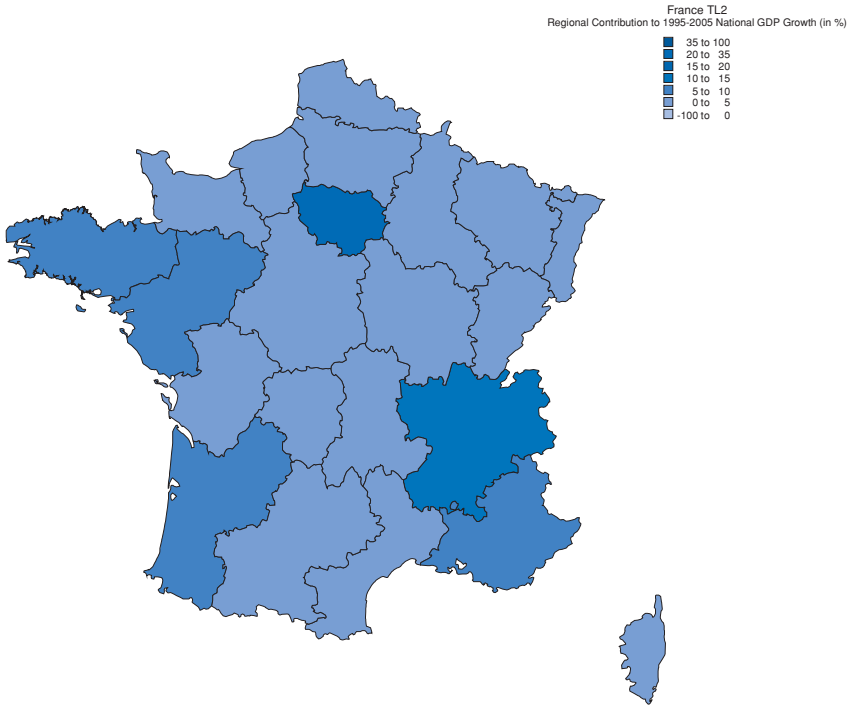


Economic concentration in France resembles the OECD average, with 37% of national GDP produced by 10% of TL3 regions. Nonetheless, France's TL2 capital region Ile de France produces a significant share of overall national output, 28% in 2007.

Inequality in GDP per capita among France's TL2 regions declined from 1980-2007. Although inequality fluctuated during the years 1980-90, with a strong increase from 1983-86, it has been gradually declining since the 1990s. Corse displayed the fastest growth rate in GDP per capita (2.4%) among French regions over the past decade and thereby has reduced its gap in GDP per capita gap from 40% below the national average in 1980 to 23% below the average in 2007. The weak performance of Alsace and Champagne-Ardenne also contributed to a reduction in inequality. Both regions, which have higher GDP per capita levels than the national average, have been growing at rates well below the national average over the past decade (0.5% and 1.5% respectively). Picardie and Lorraine have also performed relatively poorly, recording the second (0.8%) and third lowest (1%) growth rates in GDP per capita among French regions over the past decade.

The strongest contribution to overall national growth was made by Ile-de-France, which contributed 30% of total national growth over the last ten years, followed by Rhone-Alpes (10.7% of national growth).

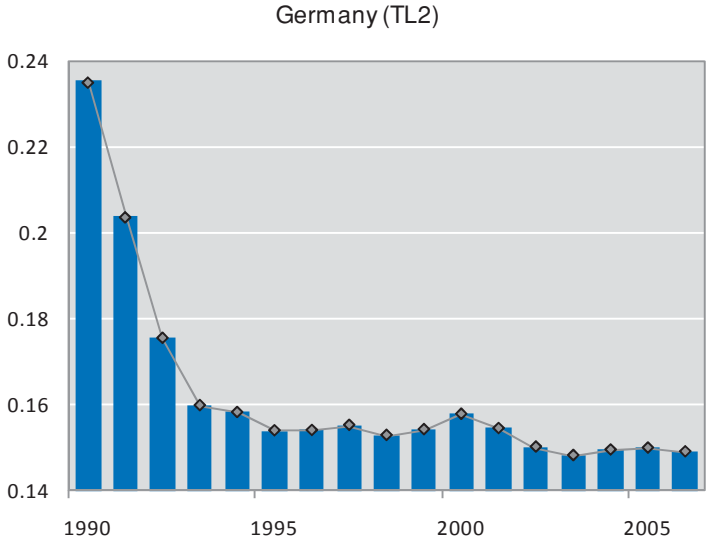
Regional contribution (%) to national GDP growth, 1995-2005



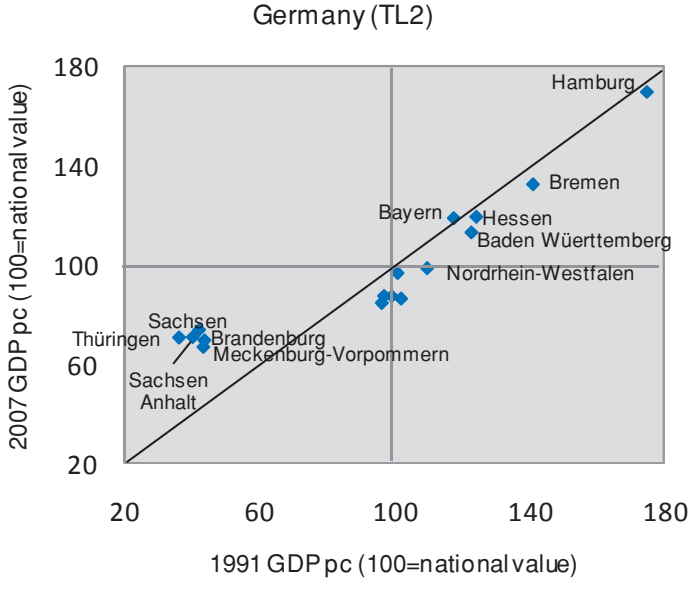
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Germany

Gini index of inequality of GDP per capita across TL2 regions, 1991-2007



Regional performance in GDP per capita over time, 1991 and 2007



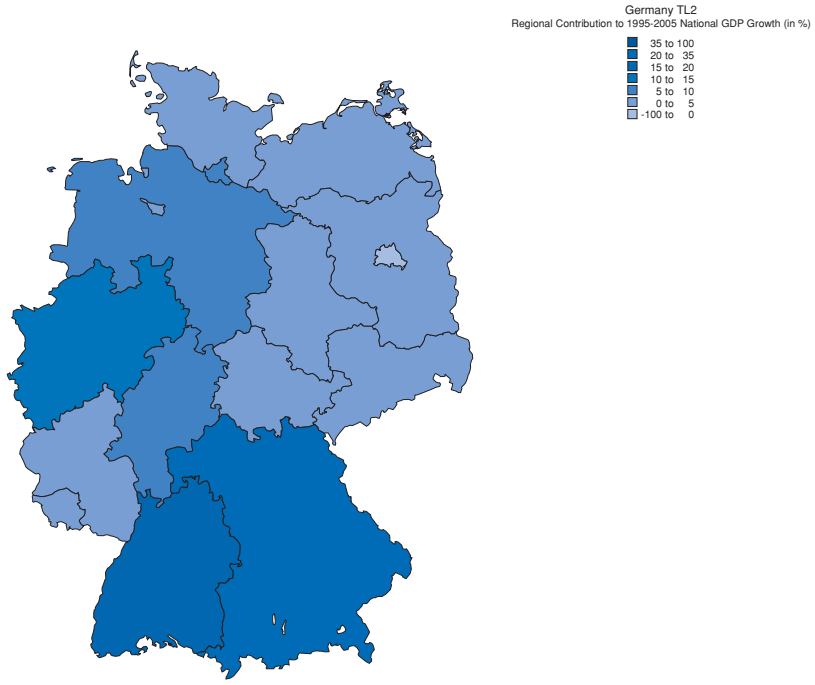
Germany's economy is slightly less concentrated than the OECD average according to the index of geographic concentration at the TL3 regional level. The top 10% of German TL3 regions produce 35% of national GDP as opposed to 38% for the OECD as a whole.

Following Germany's reunification, inequality in GDP per capita among its TL2 regions has been declining over the past 25 years, albeit at a slower pace in recent years.

There has been a general catching up process by lagging regions, notably Thüringen, Sachsen Anhalt, Sachsen, Brandenburg and Meckenburg-Vorpommern, as well as somewhat reduced performance by some leading regions such as Nordrhein-Westfalen, Baden-Württemberg and Bremen. The strong economic performance of, Thüringen, Sachsen Anhalt, Sachsen, Brandenburg and Meckenburg-Vorpommern has contributed to reduce their respective GDP per capita gaps over the past 17 years: Thüringen from 61% below the national average to -29%, Sachsen Anhalt from -60% to -29%, Sachsen from -58% to -26%, Brandenburg from -54% to -30% and Meckenburg-Vorpommern from -57% to -33%. Over, the same period, Germany's leading regions in GDP per capita terms recorded relatively low growth rates: Hamburg (1.62%), Bayern (1.61%), Bremen (1.53%) and Hessen (1.27%), Bayern Württenberg (1.15%) and Nordrhein-Westfalen (0.74%).

The largest contribution to overall GDP growth was made by Bayern and Bayern Württenberg contributing 27% and 17% of total growth respectively, with Nordrhein-Westfalen accounting for 15%.

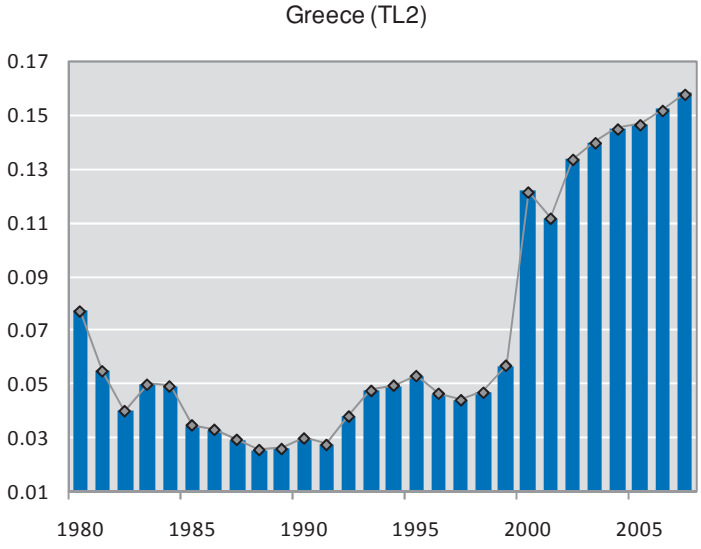
Regional contribution (%) to national GDP growth, 1995-2005



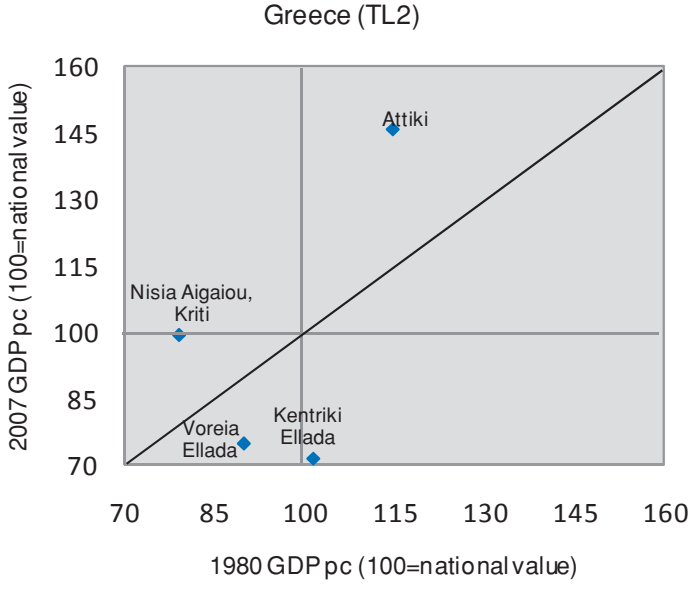
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Greece

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



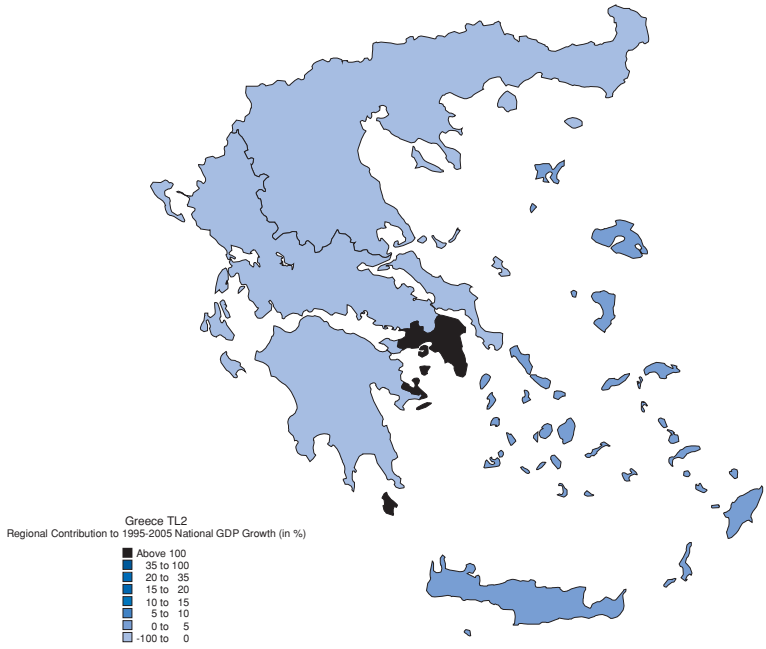
Regional performance in GDP per capita over time, 1980 and 2007



The Greek economy is more concentrated than the OECD average, with 10% of Greek TL3 regions producing 43% of the national GDP. Moreover almost 40% of national GDP is produced by Attiki, one of Greece's four TL2 regions.

Inequality in GDP per capita among TL2 regions in Greece increased from 1980-2007. From the early 1980s to the early 1990s, inequality first declined reaching its lowest level in the late 1980s. Inequalities then gradually increased from 1991 onwards. The leading region Attiki outperformed the national average displaying the highest annual average regional growth rate (3.4%) over the past decade. As a result, Attiki has contributed the bulk of national GDP growth over the past decade, with some other regional economies contracting (Kentriki Ellada and Voreia Ellada). Attiki's strong performance increased its 1980 level of GDP per capita from 15% above the national average to 46% above the average in 2007. Kentriki Ellada and Voreia Ellada suffered negative average annual GDP per capita growth rates of -1% and -0.8% respectively. Kentriki Ellada's GDP per capita dropped from 1% above the national average in 1980 to 29% below the national average in 2007 and Voreia Ellada's dropped from 10% below the national average to 25% below over the same period.

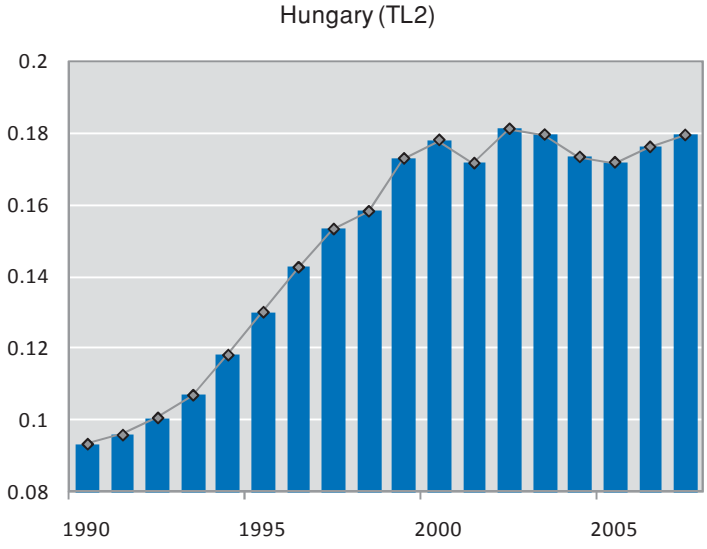
Regional contribution (%) to national GDP growth, 1995-2005



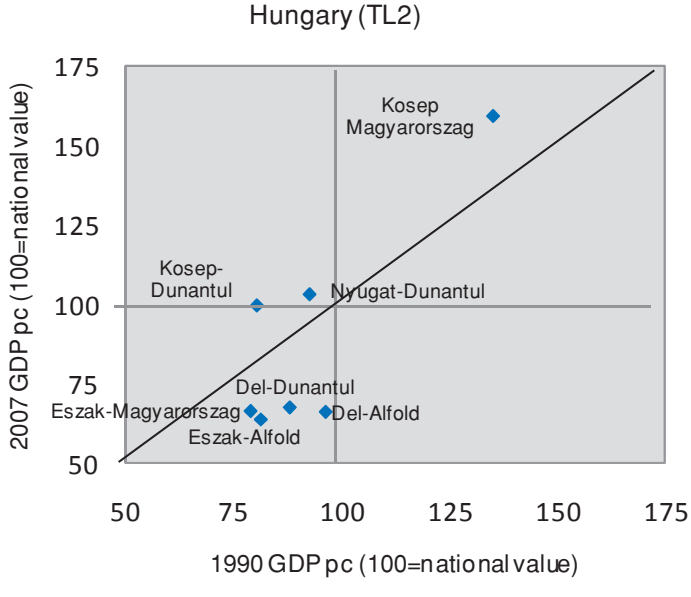
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Hungary

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007



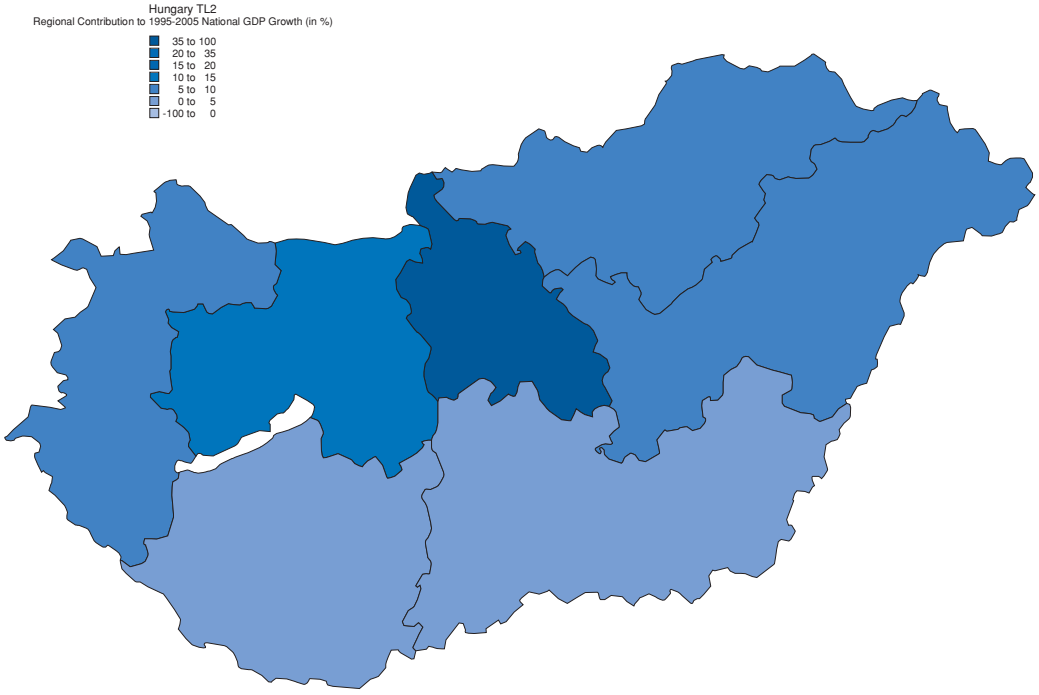
Economic concentration in Hungary resembles the OECD average according to the index of geographic concentration at the TL3 region level. Nonetheless, the top 10% of regions produce a larger share of total national output (45%) than the OECD average (38%).

Inequality in GDP per capita among Hungary's TL2 regions increased from 1990-2007. During the 1990s inequality rose steadily and from the year 2000 onward it stabilised and has been fluctuating between the Gini rage of 0.17 and 0.18.2. Increased inequality is driven mainly by its leading region (Kosep Magyarorszag) growing more rapidly than other TL2 regions and by its lagging regions falling further behind (*e.g.* Del-Dunantul, Del-Alfold, Eszak-Alfold and Eszak Magyarorszag). Kosep Magyarorszag has outperformed the national average recording the fastest regional growth rate (5.6% per annum) over 1995-2005, thereby increasing its GDP per capita level further above the national average from 35% above the average in 1990 to 59% above in 2007.

Lower than average growth rates among lagging regions have tended to increase their GDP per capita gaps with respect to the national average over the past decade: from 4% below the national average to 34% below for Del-Alfold, from 12% to 38% below for Del-Dunantul, from 19% to 36% for Eszak-Alfold and from 21% to 33% below for Eszak Magyarorszag.

Over the past 27 years, the only Hungarian region with a visible pattern of convergence is Kosep-Dunantul, which has increased its GDP per capita level from 20% below the national average in 1990 up to the national average in 2007.

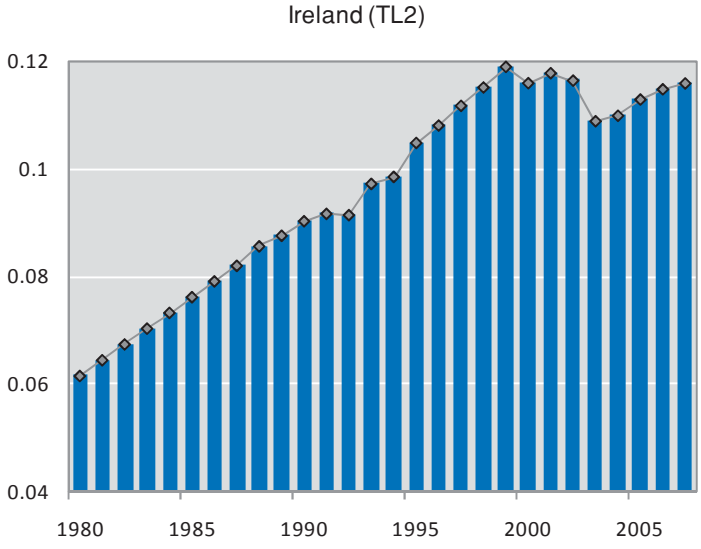
Regional contribution (%) to national GDP growth, 1995-2005



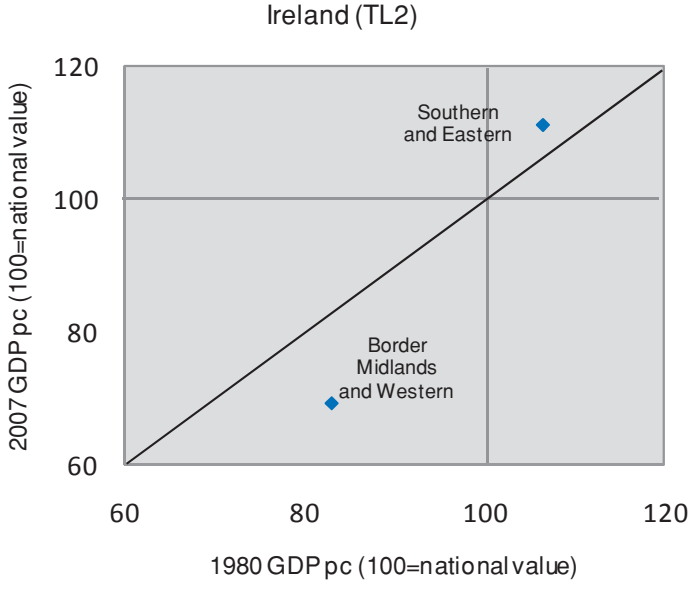
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Ireland

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007

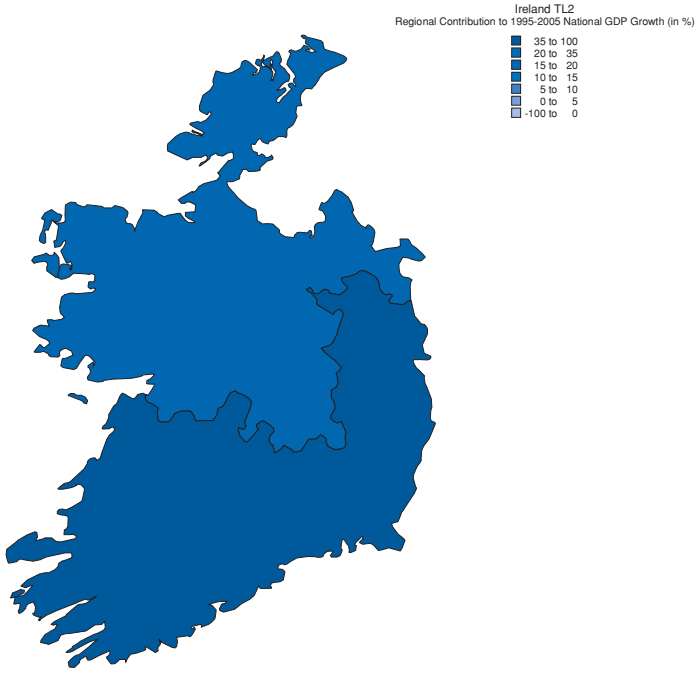


Economic concentration in Ireland among TL3 regions resembles the OECD average. Although concentration in GDP has increased over the past decade, the increase was lower than the average increase in 27 OECD countries.

Overall, Southern and Eastern has performed more strongly than Border Midlands and Western. Southern and Eastern has increased its relative position from GDP per capita 6% above the national value to 11% above in 2007. Border Midlands and Western declined from 17% below the national average to 31% below the average in 2007.

Despite the increasing gap between Ireland's two TL2 regions, both regions recorded buoyant growth rates and rank among the fastest growing OECD TL2 regions over the period 1995-2005, with annual average GDP per capita growth rates of 6.2% in Border Midlands and Western and 6.8% in Southern and Eastern. Due to its larger economy (in GDP share), Southern and Eastern has contributed the bulk (81.3%) of Ireland's overall GDP growth over the past decade.

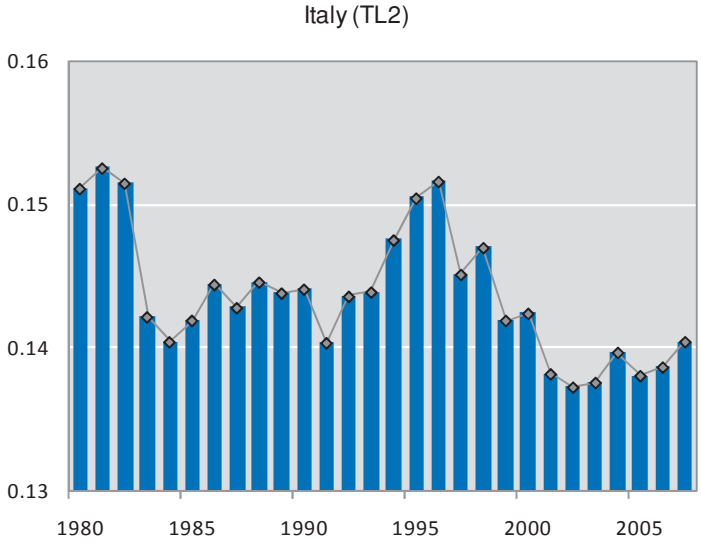
Regional contribution (%) to national GDP growth, 1995-2005



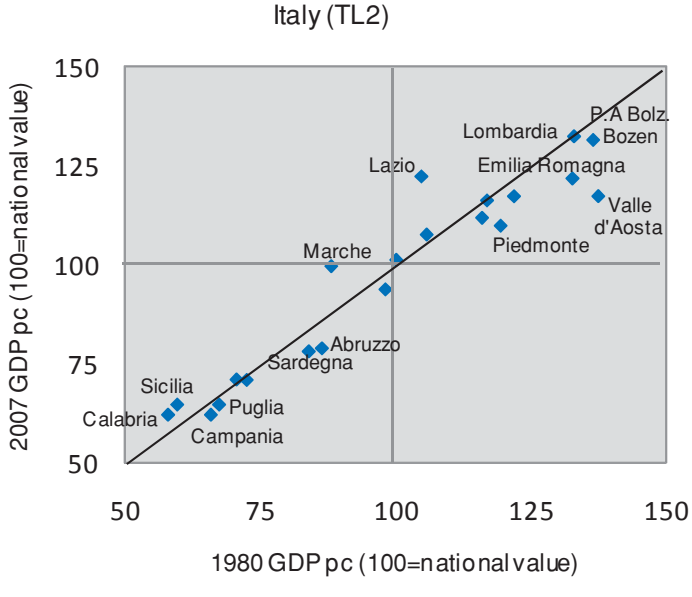
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Italy

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



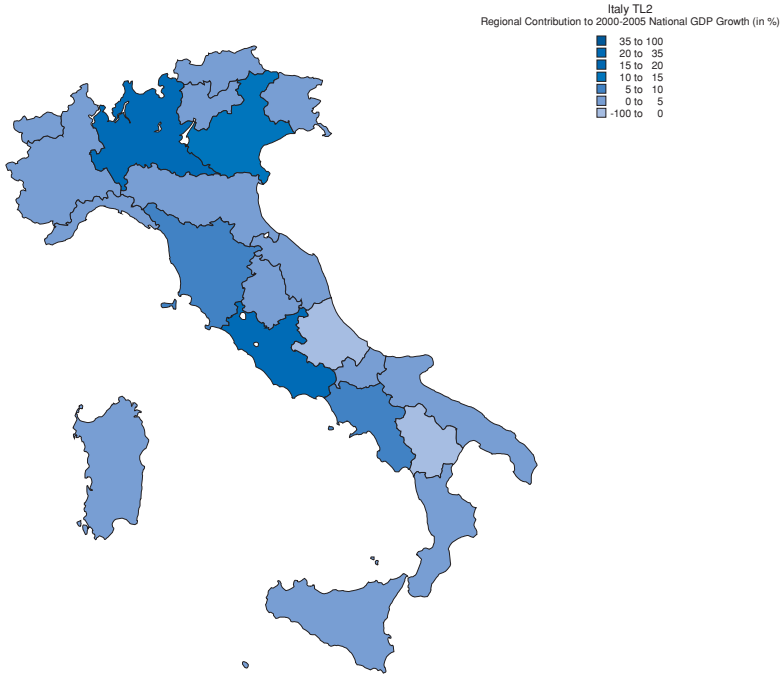
Economic concentration in Italy resembles the OECD average: 39% of national GDP is produced by 10% of TL3 regions. Approximately 31% of national GDP is produced by two TL2 regions Lombardia (20.6%) and Lazio (10.2%).

Inequality in GDP per capita in Italy declined from 1980-2007 among TL2 regions. The largest decline occurred during the early 1980s. Subsequently, inequalities have fluctuated (decreasing between 1983 and 1991, increasing gradually to a high point in 1995 before declining again). Since 2003, disparities have been increasing, but at a modest rate.

The decline in inequality in Italy is driven by two forces: lagging regions catching up and leading regions underperforming. The strong performance of lagging regions such as Calabria and Sicilia, for example, reduced their gap in GDP per capita levels from 40% and 42% below the national average respectively in the 1980s to 35% and 38% below the national average in 2007, though the disparity is still quite significant. The second force reducing inequality has been the relative underperformance of leading regions, notably Valle d'Aosta, Piedmonte and Emilia Romagna, each of which had above average GDP per capita levels but below average GDP per capita growth rates (-0.46%, -0.34% and 0.27% respectively) over the past decade.

The main drivers of national GDP growth have been Lombardia, Lazio and Veneto, contributing almost half of Italy's GDP growth (22%, 13% and 10% respectively) over the past decade.

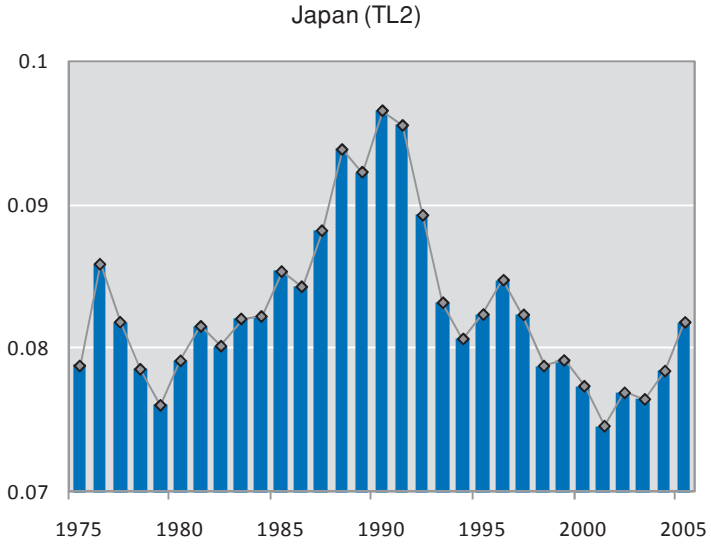
Regional contribution (%) to national GDP growth, 1999-2005



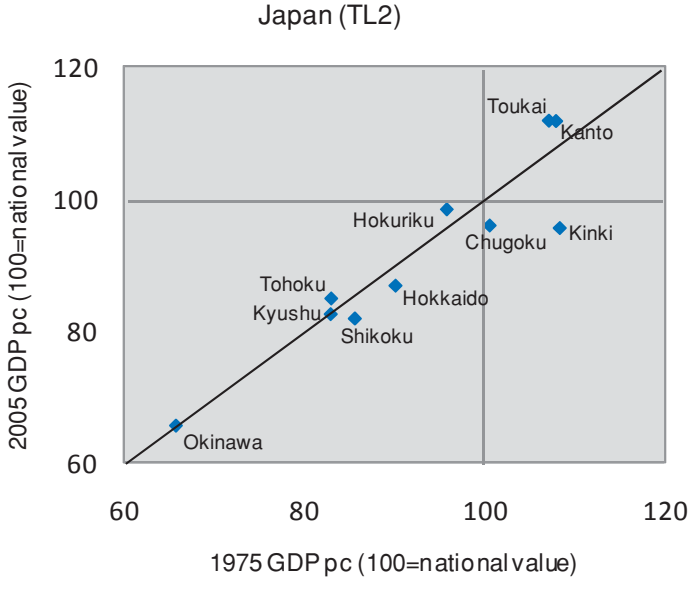
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Japan

Gini index of inequality of GDP per capita across TL2 regions, 1975-2005



Regional performance in GDP per capita over time, 1975 and 2005

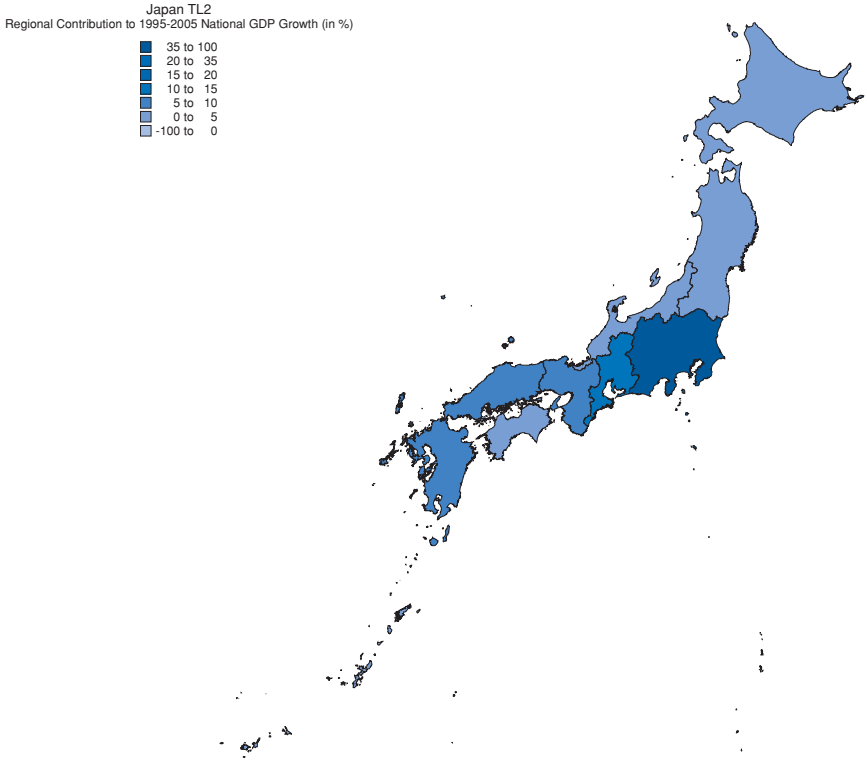


Japan's economy is slightly more concentrated than the OECD average, with 40% of national GDP concentrated in 10% of TL3 regions as opposed to 38% in the OECD overall.

Inequality in GDP per capita among Japanese TL2 regions fluctuated over the past 30 years. From the mid-1970s to the early 1980s, disparities in GDP initially declined, but then increased progressively reaching a high point in 1991 thanks to strong growth in Japan's large urban centres. From 1991 onwards, disparities have declined again, though with some recent fluctuation. The decline in inequality from 1990-2005 has been driven principally by leading Japanese regions underperforming. Over the past decade, Kinki displayed the lowest GDP per capita regional growth rate (0.52%) among Japanese TL2 regions and consequently its GDP per capita level declined from 8% above the national average in 1975 to 4% below the average in 2005. The strong performance of certain lagging regions such as Okinawa and Kyushu over 1995-2005 has also contributed to the decline in inequalities. These two regions had the fourth-highest (1.28%) and the third-highest (1.38%) growth rates among Japanese TL2 regions over the decade.

The largest contribution to national output over 1995-2005 was made by Kanto contributing 51.8% of overall national GDP growth, followed by Toukai (12.9%), Kyushu (8.6%) and Kinki (7.9%).

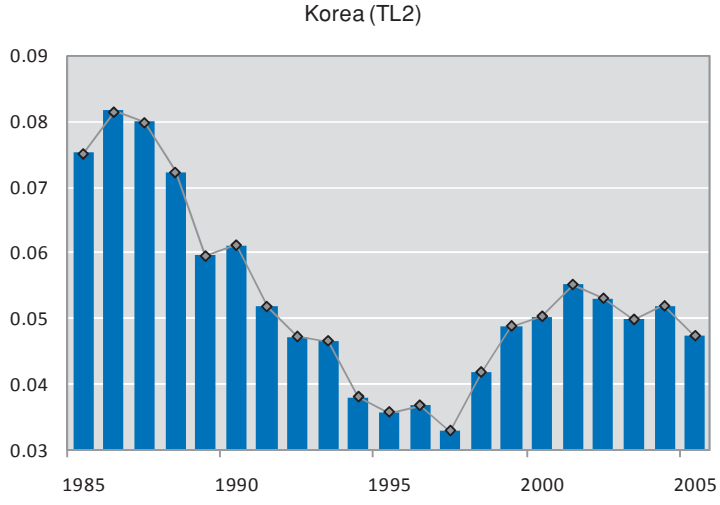
Regional contribution (%) to national GDP growth, 1995-2005



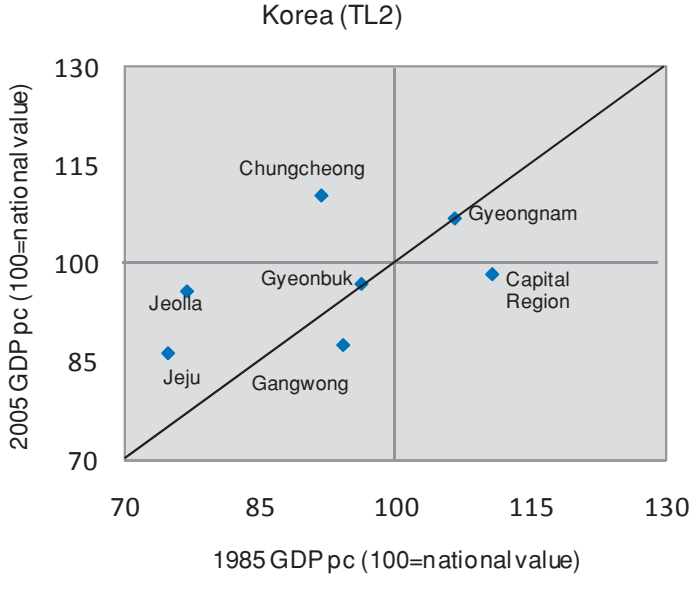
Source: OECD calculations based on OECD Regional Database (2009) and Ministry of Internal Affairs and Communications.

Korea

Gini index of inequality of GDP per capita across TL2 regions, 1985-2005



Regional performance in GDP per capita over time, 1985 and 2005



Korea's economy is significantly concentrated displaying the fourth highest index of geographic concentration of GDP among TL3 region in OECD countries. More than 40% of the national GDP is produce in only two (Seoul and Gyeonggi) of Korea's 16 TL3 regions.

Inequality in GDP per capita among TL2 regions has declined in Korea from 1985-2005. During the mid 1980s to the mid 1990s inequality decreased significantly, from 1996-2001 it increased back to the levels of the early 1990s and since 2001 inequality has fluctuated and seems to be dropping progressively.

The decline in inequality has been driven by a catching up process of the lagging regions Chungcheong and Jeolla recording above average growth rates in GDP per capita over the past decade. In fact Chungcheong recorded the fastest rate of growth among Korea's TL2 regions reducing its GDP per capita gap and even surpassing the national average over a 20 year period, from 8% below the national average in 1985 to 10% above the average in 2005.

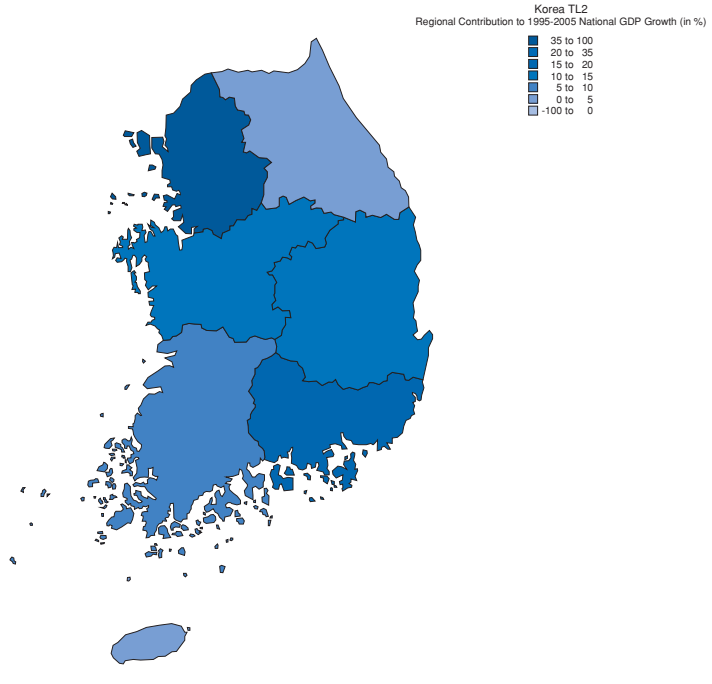
The lagging region Gangwon has fallen further behind over the past two decades displaying the third lowest GDP per capita growth rate the last ten years. As a result its level of GDP per capita in 2005 is 18% below the national average.

The weak performance of the Capital Region has also contributed the decline in inequality, recording the lowest growth rate in GDP per capita (2.83%) over the past decade. As a result its level of GDP per capita has declined from 11% above the average in 1985 to 2% below the average in 2005.

Despite Capital Region's underperformance, due to its large size (measured by GDP share) its contribution to national GDP growth over the past decade is quite significant (47.7%). Gyeongnman, Chungcheong, Gyeonbuk and Jeolla also contributed considerably to national GDP growth over the past decade with respective value of 17.1%, 13.5%, 10.8% and 8.8%.

Regional contribution (%) to national G

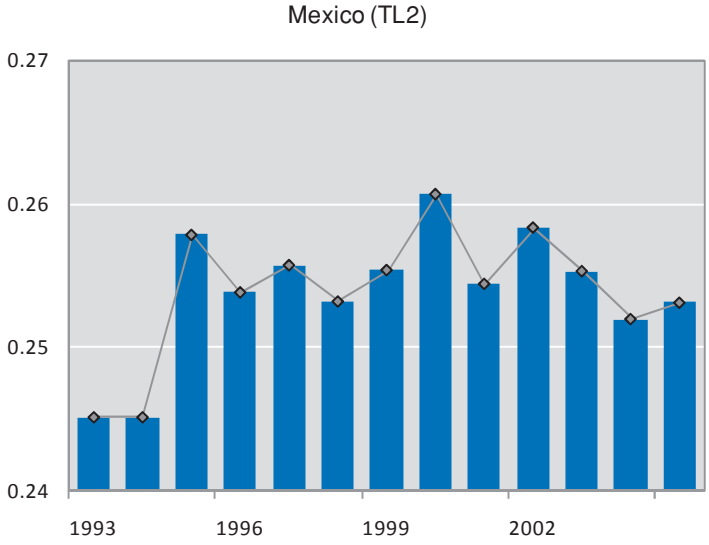
DP growth, 1995-2005



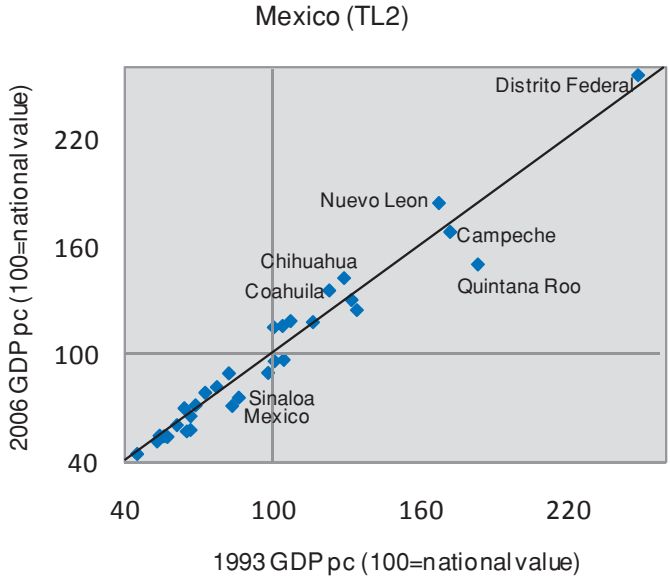
Source: OECD calculations based on OECD Regional Database (2009) and Korea National Statistical Office.

Mexico

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007



Mexico's economy is more concentrated than the average in OECD countries; approximately by 30% more according to the index of geographic concentration among TL2 regions. Moreover, more than one third (32%) of national GDP is concentrated in only two (Mexico and Distrito Federal) of Mexico's 32 TL2 regions.

Inequality in GDP per capita among Mexico's TL2 regions has increased from 1993-2005, although it has remained fairly constant from 1995-2005.

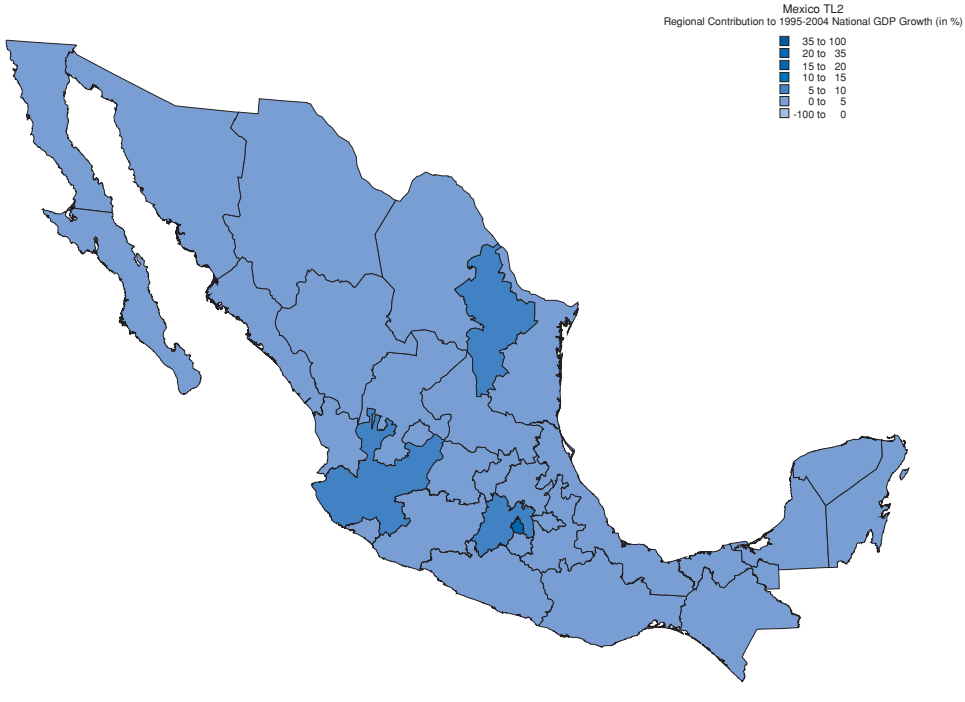
Mexico's level of inequality (in GDP per capita among TL2 regions) is one of the highest among OECD countries. Distrito Federal displays the highest level of GDP per capita exceeding the national value by 149% and Chiapas records the lowest below 60% of the national value. Only Turkey has regions with a lower percentage value than Mexico and only the United Kingdom, the United States, Turkey and France have regions with a higher percentage value.

The increase in inequality in Mexico is driven by two forces. The first is the presence of regions with higher initial levels of GDP per capita than the national average and higher growth rates over the past decade such as Distrito Federal (2.5%), Nuevo Leon (2.7%) and Chihuahua (2.6%). The second is driven by regions lagging in GDP per capita levels and growing slower than the national average. In Mexico these regions are Sinaloa (1.98%) and Mexico (1.02%).

A decline in inequality is also possible by two forces: when lagging regions are catching up and when leading regions underperform. In Mexico there are no visible regions catching up and the leading region Quintana Roo has been underperforming in GDP per capita growth displaying the 6th lowest growth rate (1.34%) among Mexican TL2 regions.

The largest contribution to national growth in GDP over 1995-2004 was led by regions bordering the United States contributing to 29% of national GDP growth (*e.g.* Baja California Norte, Nuevo Leon, Sonora, Chihuahua and Tamaulipas) followed by metropolitan region Distrito Federal and its surrounding region Mexico contributing to 27% of the national growth and finally by Jalisco (6.3%).

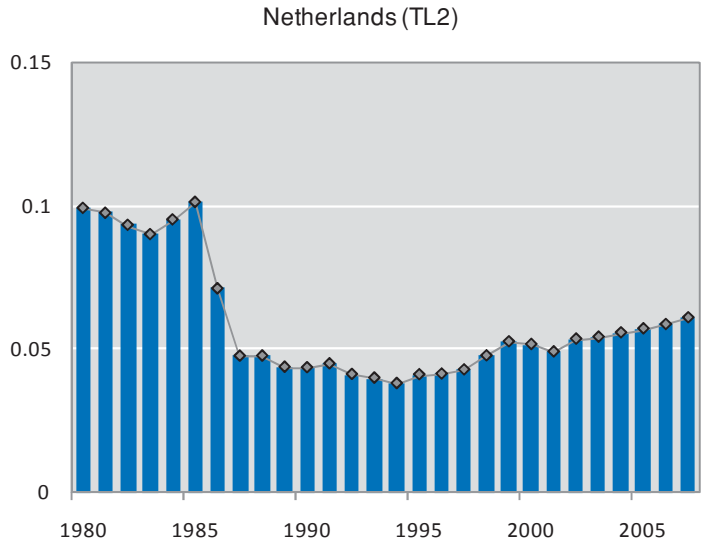
Regional contribution (%) to national GDP growth, 1995-2005



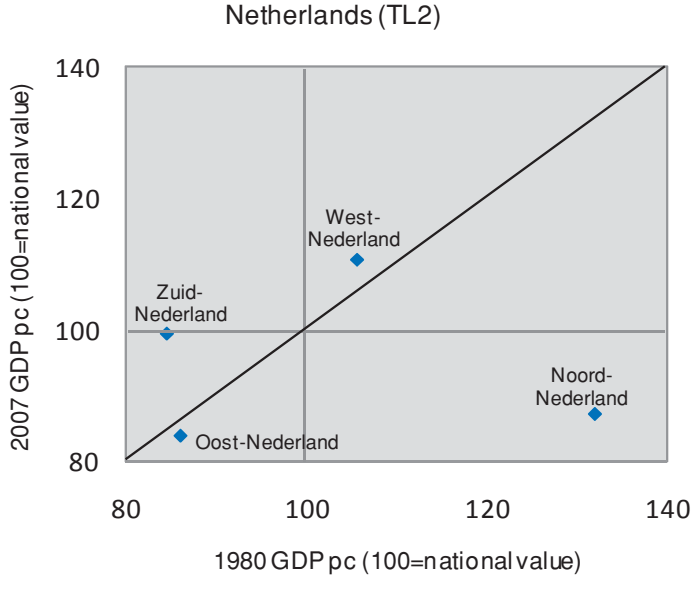
Source: OECD calculations based on OECD Regional Database (2009) and National Statistical Office (INEGI).

The Netherlands

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



Economic concentration in the Netherlands is not significantly concentrated in comparison to OECD countries. According to the index of geographic concentration the Netherland's economy is the third lowest concentrated among OECD countries. In fact only 26% of the national GDP is produced in 10% of the Netherland's TL3 regions as opposed to 38% in the OECD.

Inequality in GDP per capita between the Netherland's TL2 regions decreased from 1980-2005. During the early 1980s inequality remained fairly stable until the mid 1980s

when the Netherlands experienced the largest decline in the years 1986 and 1987. Since 1987 inequity has remained fairly stable and has been experiencing a gradual increase since 1994.

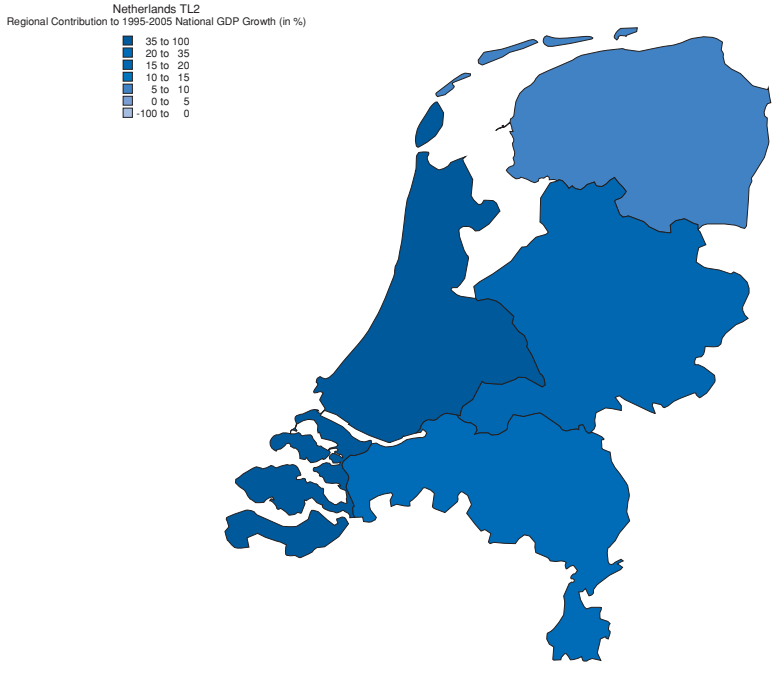
The drop in inequality in the Netherlands is driven by two forces, the falling behind of the leading region Noord-Netherland during the period 1980-2007 and the catching up of the lagging region Zuid-Netherland.

Zuid-Netherland's strong economic performance of over the past decade, recording the fastest growing GDP per capita (1.35%) growth rate among TL2 regions, increased its below average 1980s GDP per capita level from 16% (below the national average) to its current value of only 1% below national standards. Consequently it has contributed to more than one fifth (22.4%) of the overall national GDP growth during the past decade.

In contrast the underperformance of Noord-Netherland also contributed to a decline in inequality, albeit undesirable, by growing slower than the national average (1.01% as opposed to the national rate of 1.05%) in GDP per capita growth rates over the period 1995-2005. Consequently it lowered its 1980's above average level of GDP per capita from 32% (above the average) to its current level of 13% below the average.

In contrast West-Netherland has maintained its higher level of GDP per capita and even increased it from 6% in 1980s to 11% in 2007. Due to its strong performance and large size, West-Netherland has contributed to 51% of the overall national GDP growth over the past decade

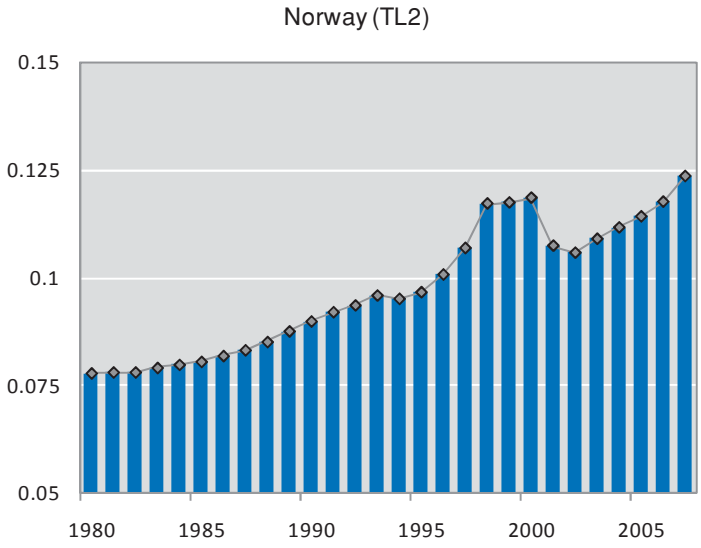
Regional contribution (%) to national GDP growth, 1995-2005



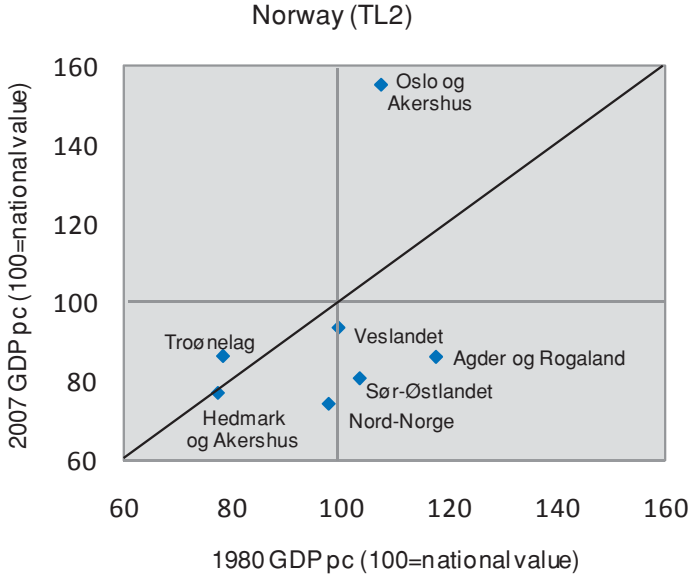
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Norway

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



Norway's economy is more concentrated among its TL3 regions than the average of OECD countries, approximately by 30% more according the index of geographic concentration among TL3 regions. Moreover almost one fourth (22%) of Norway's GDP is produced in only one of its 19 TL3 regions (Oslo).

Inequality in GDP per capita among TL2 regions increased from 1980-2007. From the early 1980s to early 2000 inequality increased steadily each year excluding 1993-94. In 2000 inequality declined for two years and since the year 2003 it has been increasing.

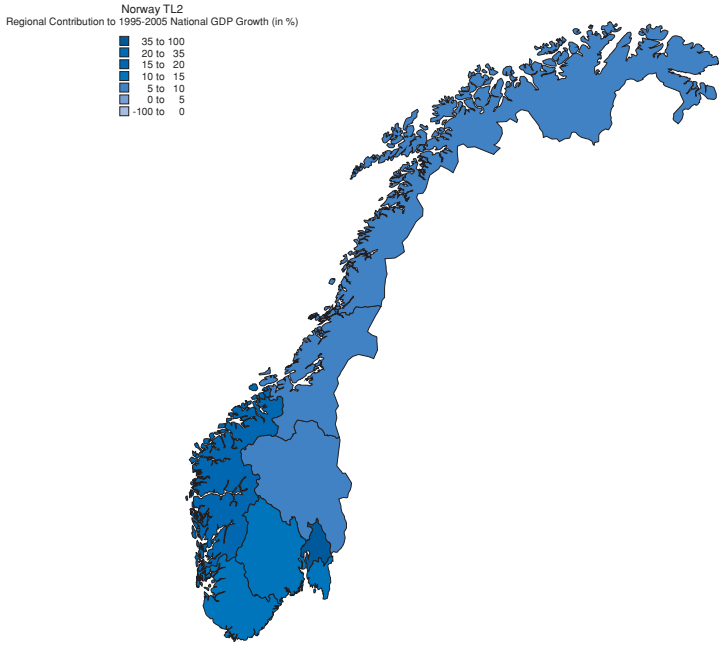
Norway's increase in inequality is driven by Oslo og Akershus's strong economic performance increasing its lead relative to other TL2 regions and the falling behind of Agder og Rogaland, Sør-Østlandet and Nord-Norge.

Over the past decade Oslo og Akershus's GDP per capita grew faster (2.5%) than the national average (2.3%) increasing its level of GDP per capita further above the national average. Over the period 1980-2007 Oslo og Akershus's GDP per capital level increased from 7% above the national average to 55%.

The underperformance of Sør-Østlandet, Nord-Norge and Agder og Rogaland recording the lowest (1.48%), second lowest (1.94%) and third lowest (2.22%) GDP per capita growth rates over the period 1995-2005 has pushed their GDP per capita levels below national standards. In 1980 Agder og Rogaland and Sør-Østlandet displayed average (18% and 3% respectively) GDP per capita levels and 27 years later they fell below national standard by 14% and 19% respectively. Nord-Norge's GDP per capita lagged only by 2% and in 2007 it declined to 26% below the national average.

Despite the underperformance of Agder og Rogaland and Sør-Østlandet their combined contribution to Norway's overall GDP growth over the period 1995-2005 exceeded one fifth (*e.g.* 26%). The main drivers of national growth during this period are led by Oslo og Akershus (39%) and Vestlandet (17%).

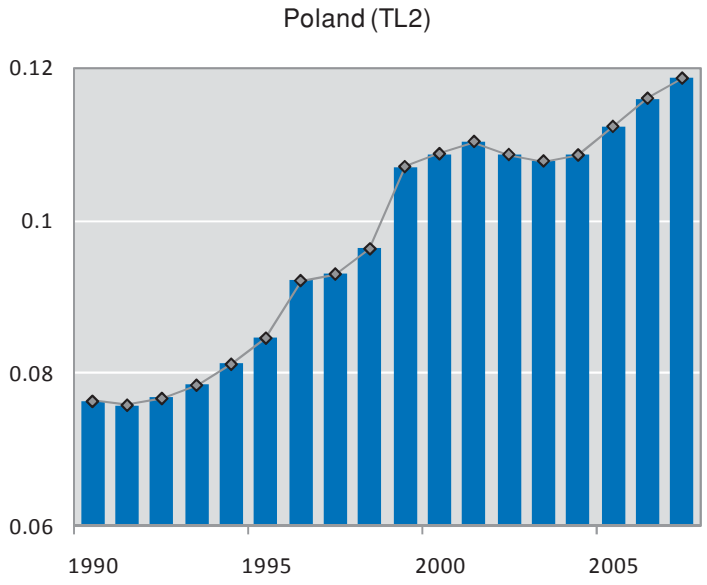
Regional contribution (%) to national GDP growth, 1995-2005



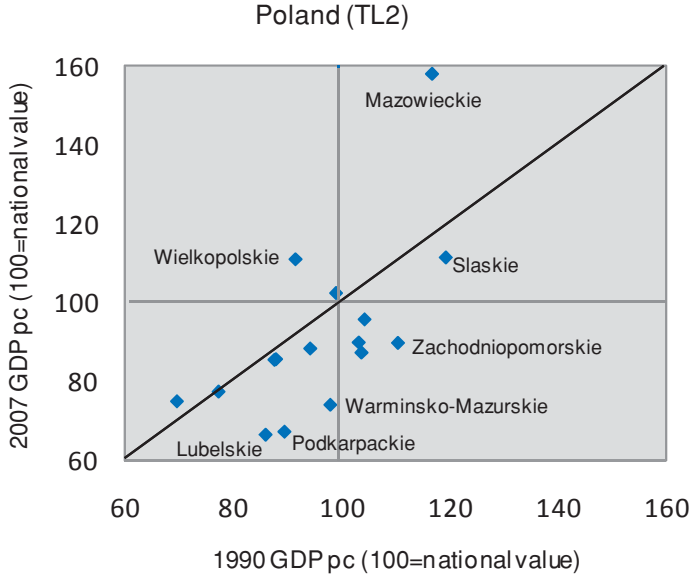
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Poland

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007



Poland's economy is less concentrated than the OECD average according to the index of geographic concentration among TL3 regions. Nonetheless close to one-fifth of the national output (16.8%) is produced by the capital TL2 region Mazowiekie, one of Poland's 16 TL2 regions.

Inequality in GDP per capita among Poland's TL2 regions has increased steadily from 1990-2007. In fact it increased in all years except from 2001-03.

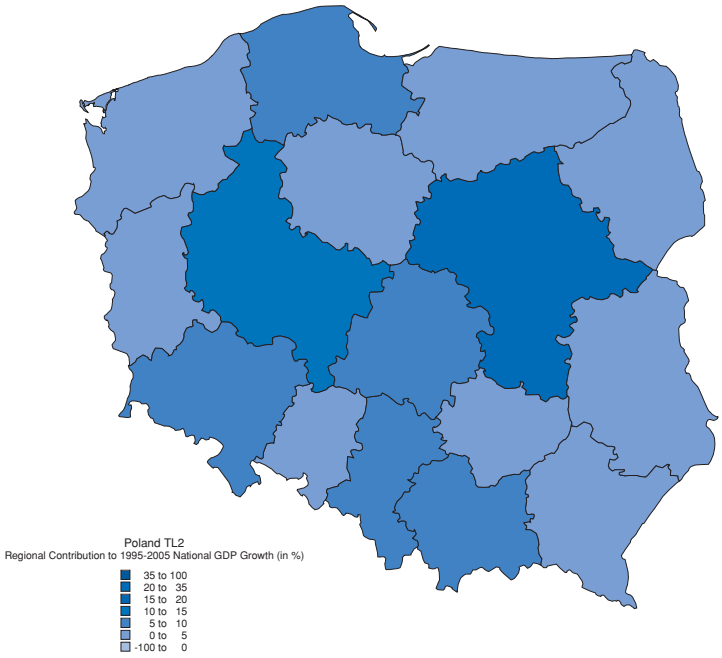
Poland's increase in inequality is driven by its leading region (Mazowiekie) gaining relative to other TL2 regions and by its lagging regions falling further behind (Lubelskie, Podkarpackieand and Warminsko-Mazurskie).

Mazowiekie has outperformed the national average recording the fastest annual average growth in GDP per capita (6.6%) over the period 1995-2005 increasing its GDP per capita level further above national standards from 17% above the average in 1990 to 58% in 2007.

Lagging regions contributing to inequality by falling further behind national standards include Lubelskie, Podkarpackie and Warminsko-Mazurskie recording the second (2.9%), fourth (3.3%) and eight lowest (3.9%) GDP per capita growth rates during 1995-2005 among TL2 Polish regions. The lower than average growth rates decreased there GDP per capita gap levels over the period 1990-2007 from 14% below the national average to 36% for Lubelskie, from 19% below the average to 36% for Podkarpackie and from 2% below the average to 26% for Warminsko-Mazurskie.

Over the past 17 year the only Polish region with a visible pattern of convergence is Wielkopolskie increasing its GDP per capita level from 9% below the national average in 1990 to 11% to above the average in 2007.

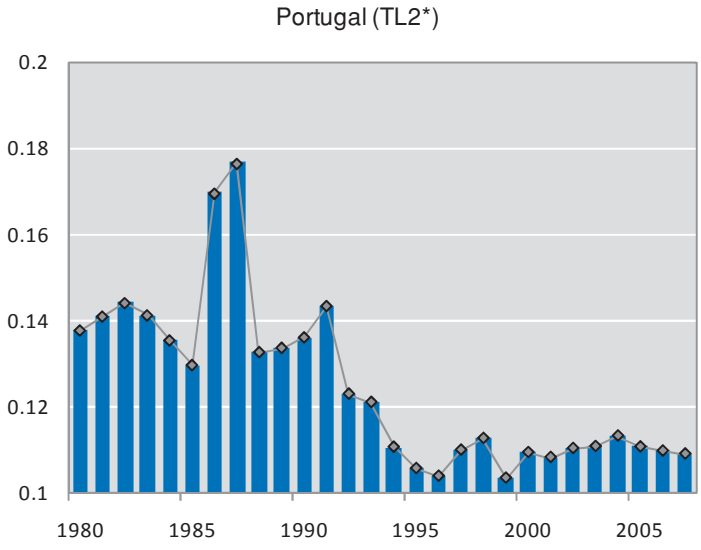
Regional contribution (%) to national GDP growth, 1995-2005



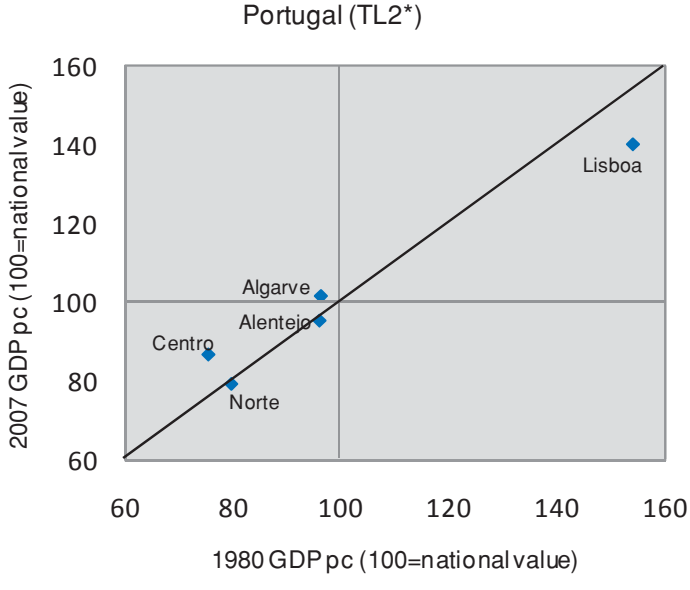
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Portugal

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



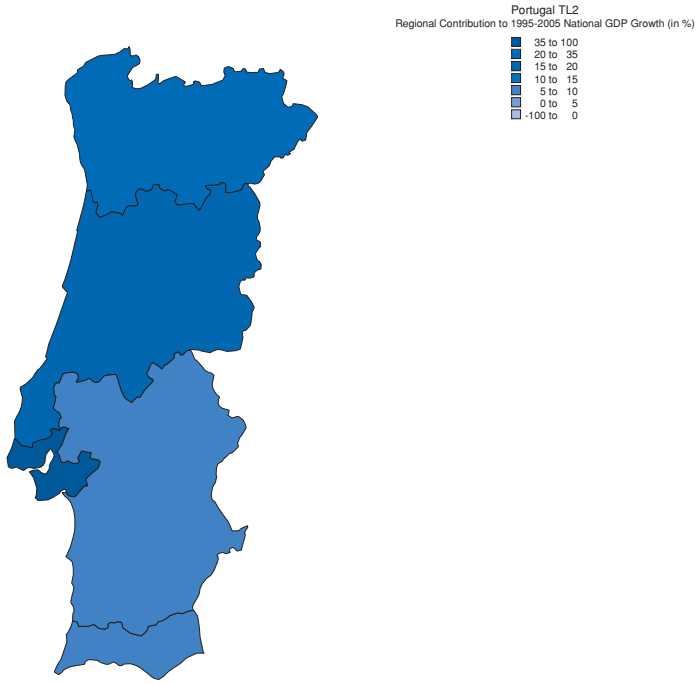
Portugal's economy is very concentrated. According the index of geographic concentration in GDP it ranks heights among OECD countries. Moreover, 66% of Portugal's GDP is produced in only two of its seven TL3 regions (*e.g.* Lisbon and Norte).

Inequality in GDP per capita between Portugal's TL2 (see graph note) regions decreased from 1980-2007. The largest increase in inequality occurred in the years 1985-87 reaching its highest value in 1987 and subsequently dropping back to its 1985 value. Except that spike inequality fluctuated between the Gini range 0.13 to 0.14 From the early 1990's inequality declined reaching its lowest level in 1996 and in 1999. Since that year inequality has remained constant.

The drop in inequality in Portugal is driven by two forces, when its leading regions are falling behind or when it lagging regions are caching up. Over the past 27 years (see graph note) Lisbon's GDP per capita dropped from 54% above the national average in 1980 to 40% above the national average in 2007. During the past decade Lisbon has maintained its leading position by growing at the same rate (1.51%) as the national average (1.49%) in its GDP per capita.

The catching up process experienced by the lagging region Centro over the past 27 years (see graph note) reducing its GDP per capita gap from 24% below the national average in 1980 to 13% in 2007 has contributed to the reduction in inequality. Moreover the catching up process of Região Autónoma da Madeira and Região Autónoma da Açores, recording the fastest (4.1%) and the second fastest (3.0%) rate of growth in GDP per capita respectively have also contributed to a decline in inequality.

Regional contribution (%) to national GDP growth, 1995-2005

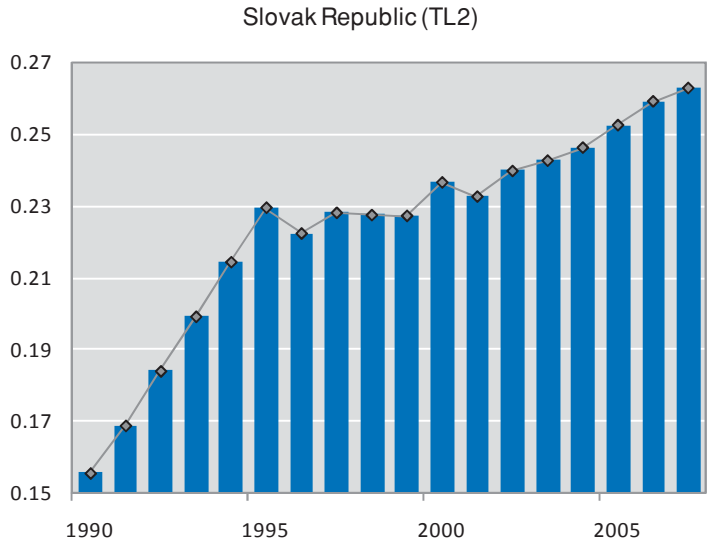


* *Note:* Data for 1980-2007 are missing for Região Autónoma da Madeira and Região Autónoma da Açores

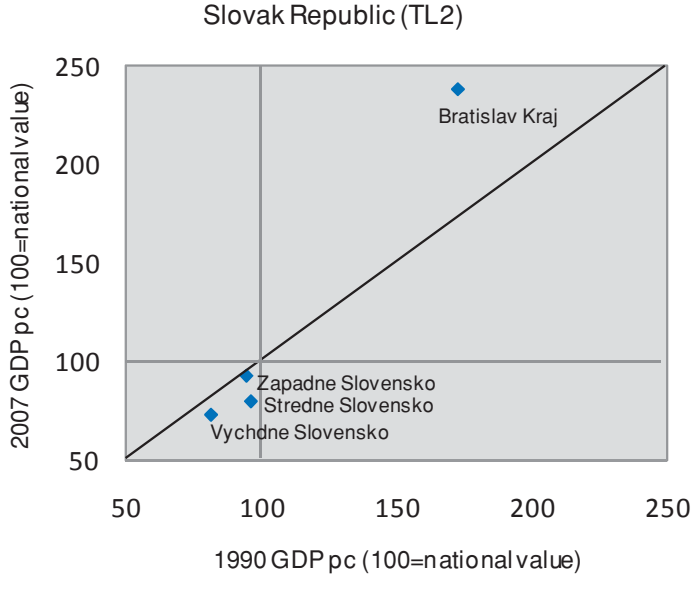
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Slovak Republic

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007



Economic concentration in the Slovak republic is the least concentrated among OECD countries. According to the index of geographic concentration the Slovak Republic's economy ranks the lowest among OECD countries and its population is also the least concentrated among its TL3 regions.

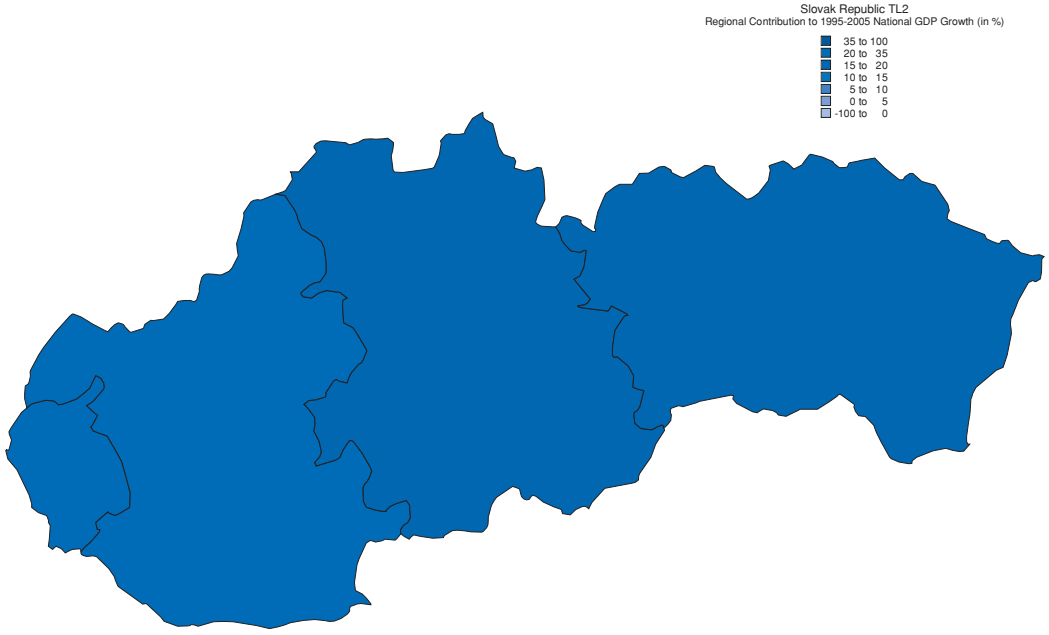
Inequality in GDP per capita among the Slovak Republic's TL2 regions has increased from 1990-2007. From the early 1990s to the mid 1990s inequality increased at stronger pace than it did from the mid 1990s to 2007.

The increase of inequality in the Slovak Republic is on the one hand driven by its leading region Bratislav Kraj outperforming the rest of regions, and on the other by lagging regions Vychdne Slovensko and Stredne Slovensko falling further behind.

Bratiskav Kraj has outperformed the national average recording the fastest GDP per capita growth rate (5.5%) over the past decade among Slovak Republic's TL2 regions increasing the gap in GDP per capita from being 73% above the national average in 1990 to 138% above the national average in 2007. Although Bratiskav Kraj produces a quarter (24.6%) of the national GDP, due to its faster growth, it contributes to a larger proportion to national GDP growth (32.6%) over the past decade.

The lagging regions Vychdne Slovensko and Stredne Slovensko, by growing at a slower pace (3.6% and 3.5% respectively) than the national average (4.2%) fell further behind in their respective GDP per capita levels. Vychdne Slovensko's GDP per capita fell from 18% below the national average in 1990 to 27% below the average in 2007, and Stredne Slovensko's fell from 6% below the national average in 1990 to 20% in 2007. Despite their lower than average growth rate, their combined contribution to national overall GDP growth was 36.1 (19.3 % for Vychdne Slovensko and 16.9% for Stredne Slovensko).

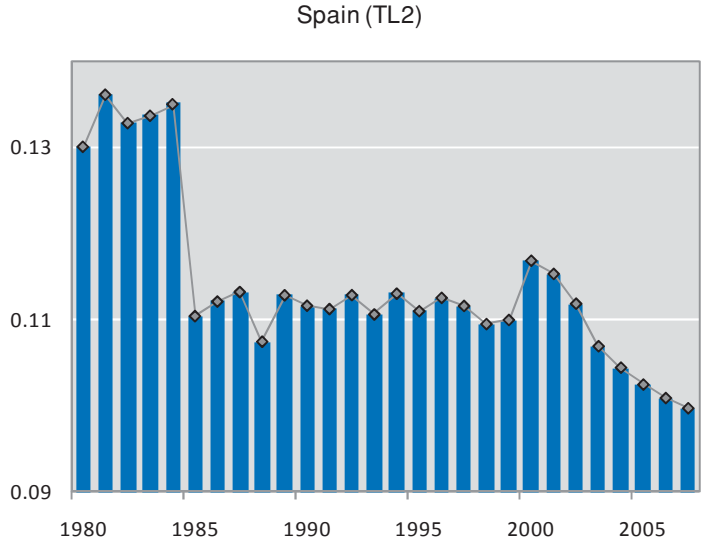
Regional contribution (%) to national GDP growth, 1995-2005



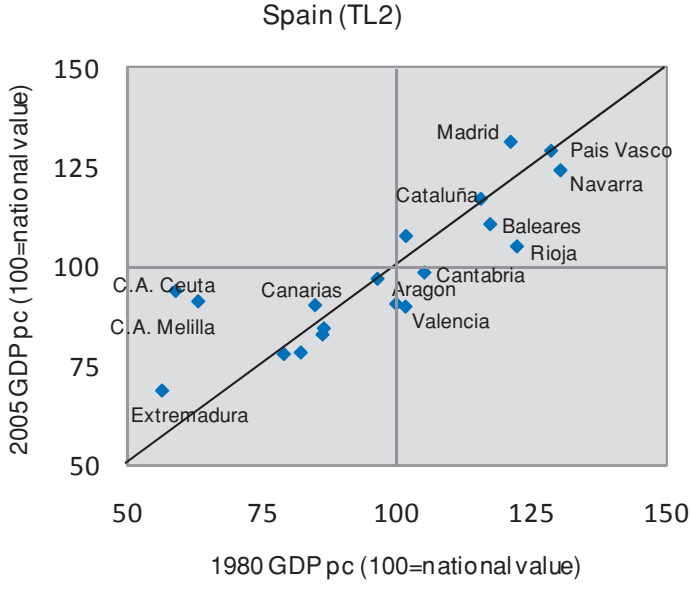
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Spain

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



Spain's economy is more concentrated relative to OECD country where 10% of Spanish regions produce 44% of the national GDP as opposed to 38% in the OECD. Almost 60% of national GDP is produced in four TL2 regions: Cataluña (18.9%), Madrid (16.8%), Andalucia (13.5%) and Comunidad Valenciana (9.5%).

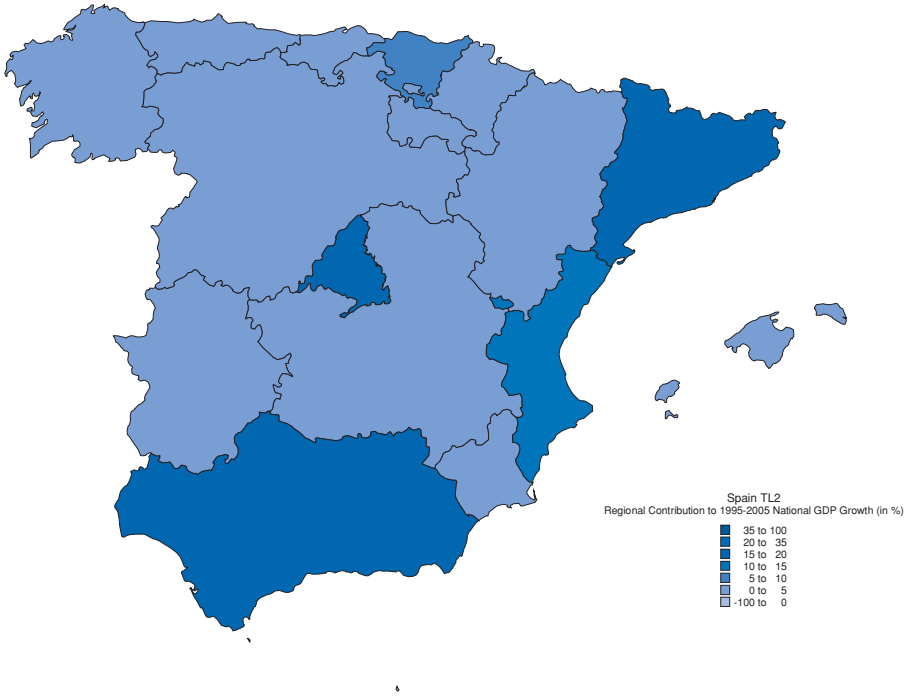
Inequality in GDP per capita among Spain's TL2 regions declined from 1980-2007. After a strong reduction during the 1984-85 period inequality remained constant from 1985-99 and since the year 2000 it has been gradually declining.

The decline in inequality has been driven by the catching up process of Extremadura, Comunidad Autonoma of Ceuta and of Melilla recording the third highest (2.8%), highest (3%) and tenth highest (2.2%) GDP per capita growth rates in Spain during the past decade. Despite this catching up, Extremadura's GDP per capita level remains 31% below national standards.

The weak performance of Baleares and Rioja, both regions with higher GDP per capita levels than the national average and lower GDP per capita growth rates (1.2% and 1.5% respectively) during the past decade, have also reduced inequality.

Although Madrid's annual average growth rate (2.1%) in GDP per capita during the past decade resembles the national average (2.2%) due to its large GDP size it contributed to 20% of Spain's overall GDP growth over the past decade, followed by Cataluña (18.4%), Andalucia (15.1%) and Comunidad Valencia (10.4%).

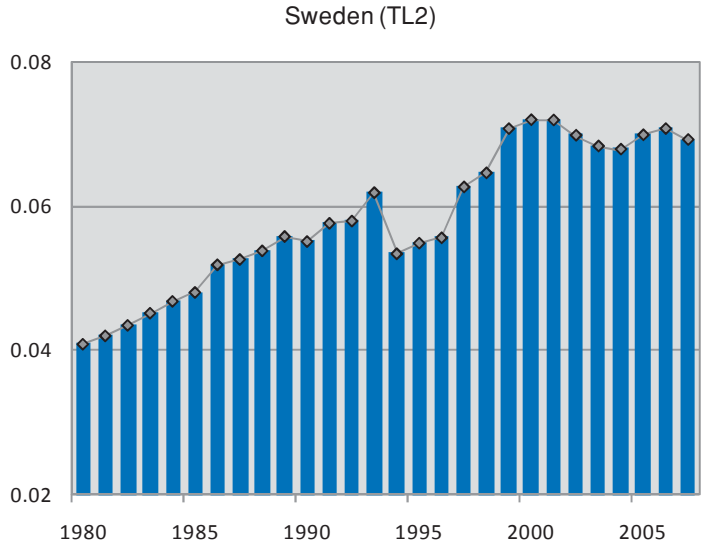
Regional contribution (%) to national GDP growth, 1995-2005



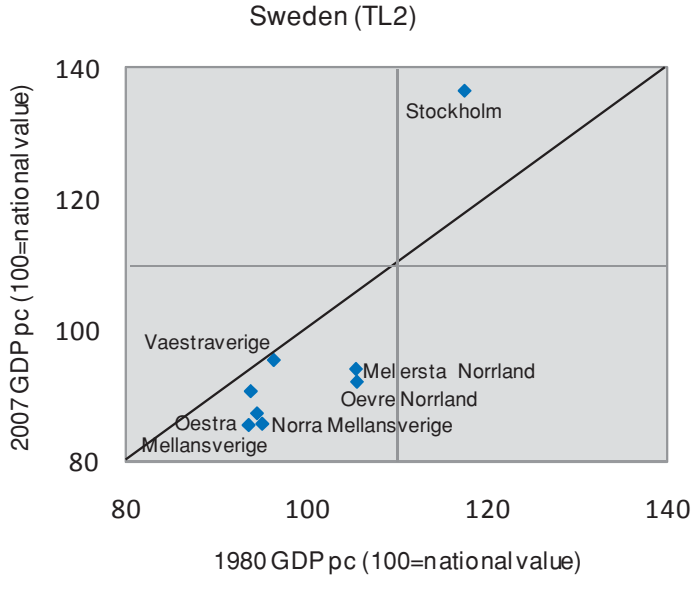
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Sweden

Gini index of inequality of GDP per capita across TL2 regions, 1990-2007



Regional performance in GDP per capita over time, 1990 and 2007



According to the index of geographic concentration applied to TL3 regions, Sweden's economy is the second most concentrated among OECD countries. Almost 60% of Sweden's GDP is produced in three of 21 TL3 regions (Stockholm, Västra Götlands and Skåne).

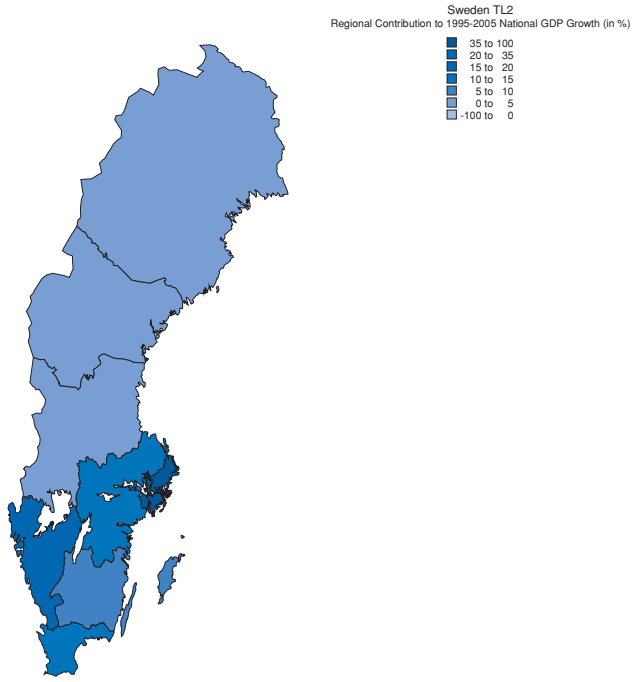
Inequality in GDP per capita among TL2 regions has been increasing steadily from 1980-2005. The increase in inequality is significantly driven by Stockholm's buoyant growth rate in GDP per capita over the past ten years (3.6%) outperforming the national average (2.7%). Over a 27 year period Stockholm's above average GDP per capita increased from exceeding 18% the national standard to 36%.

With the exception of Västraverige and Sydsverige the remaining Swedish TL2 regions have also contributed to inequality by falling further behind the national average in GDP per capita over the period 1980-2007.

Despite the increasing trend in inequality, it still remains fairly low relative to OECD standards. In 2007 Sweden displays the lowest level of inequality in GDP per capita and in productivity (GDP per worker) among TL3 regions in the OECD. In fact Östra Mellansverige and Småland med öarna both TL2 regions with the lowest level of GDP per capita trail the national average in 2007 by only 14%.

Due to Stockholm's large size and vibrant economy it has contributed significantly (41.7%) to Sweden's overall GDP growth over the past decade, followed by Västsverige (19.6%), Sysverige (12.4%) and Östra Mellansverige (11.8%).

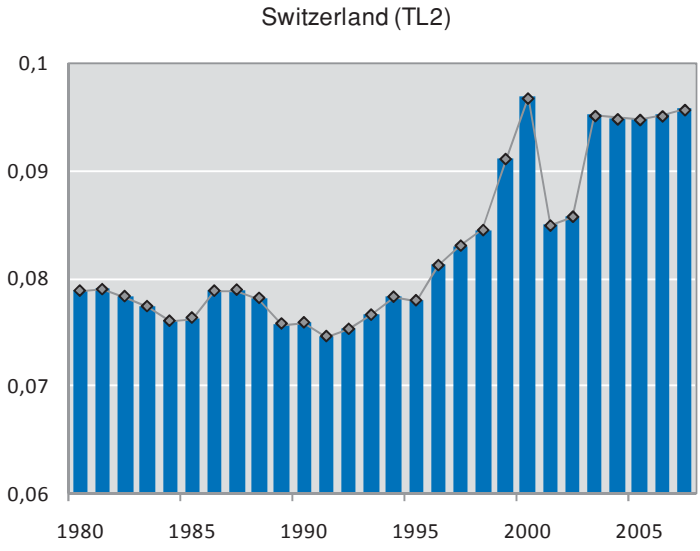
Regional contribution (%) to national GDP growth, 1995-2005



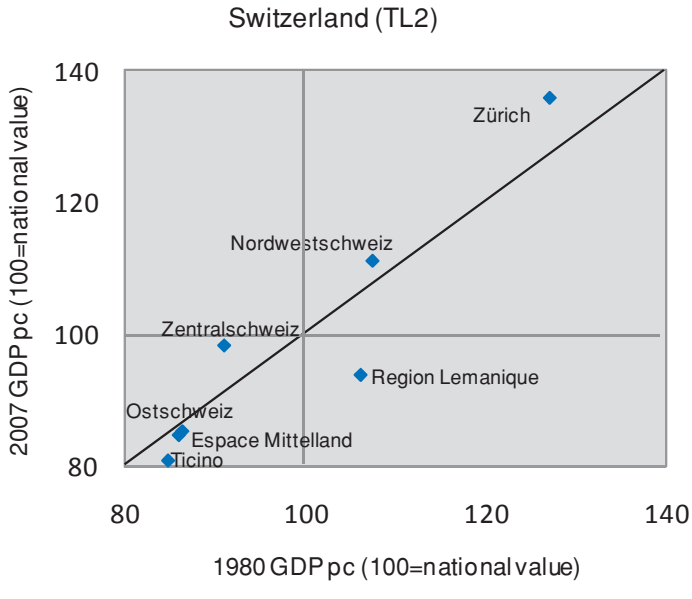
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Switzerland

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007

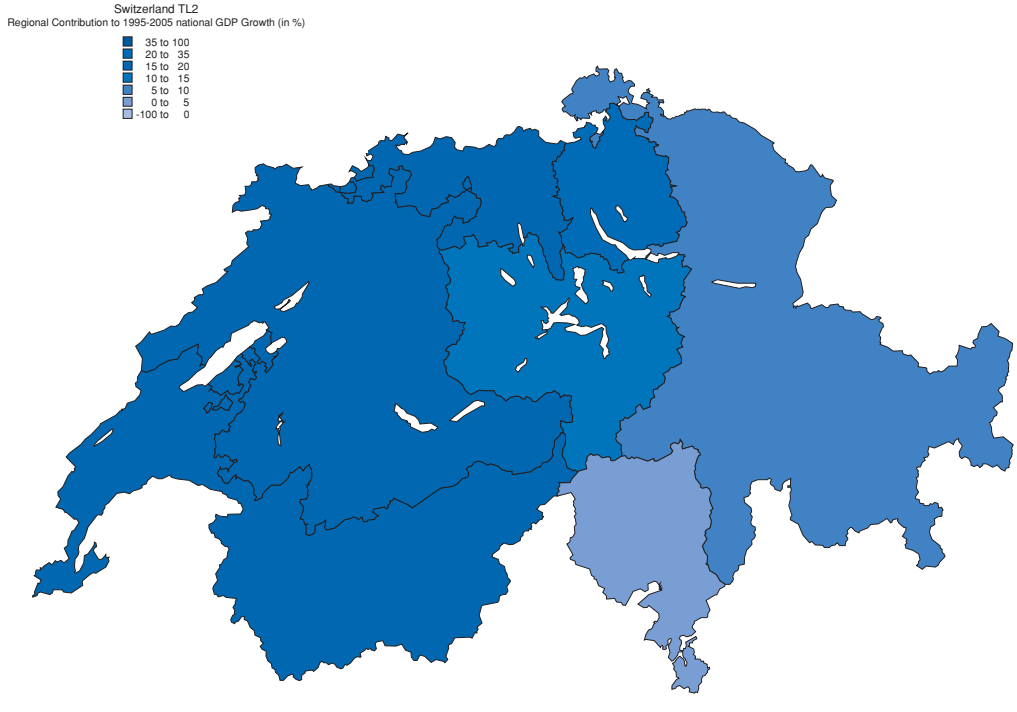


Inequality in GDP per capita among Switzerland's TL2 regions increased over the period 1980-2007. After fluctuating up to the mid 1990s, inequality increased steadily since 1995.

Increased regional disparities in Switzerland has been driven by a relative improvement in the performance of Zurich and a decline of Ticino, a lagging region. Zurich increased its GDP per capita from being 27% above the national average in 1980 to 36% above in 2007. In contrast, Ticino's per capita level dropped from 15% below the national average to 19% below.

As a result of Zurich's faster GDP per capita growth rate (1.32% compared with the national average of 1.1%) over the period 1980-2007, and its large economic weight (producing 23% of national output);,the region of Zurich has contributed more than one third of Switzerland's overall output growth (31%) during the past decade, followed by Espace Mittelland (16%), Nordwestschweiz and Region Lemanique (16% each). The buoyant growth rate of Zentralschweiz (1.36%), which recorded the fastest growth rate among TL2 regions in Switzerland over the decade, has decreased its GDP per capita gap from 9% below the national average in 1980 to only 2% below in 2007.

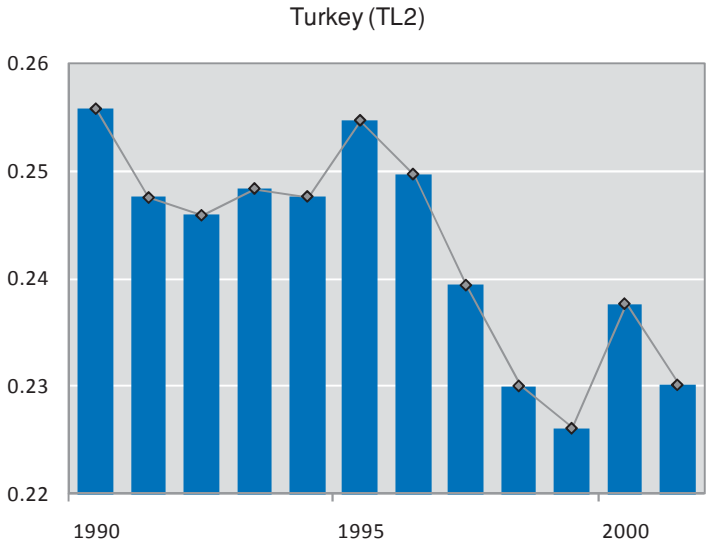
Regional contribution (%) to national GDP growth, 1995-2005



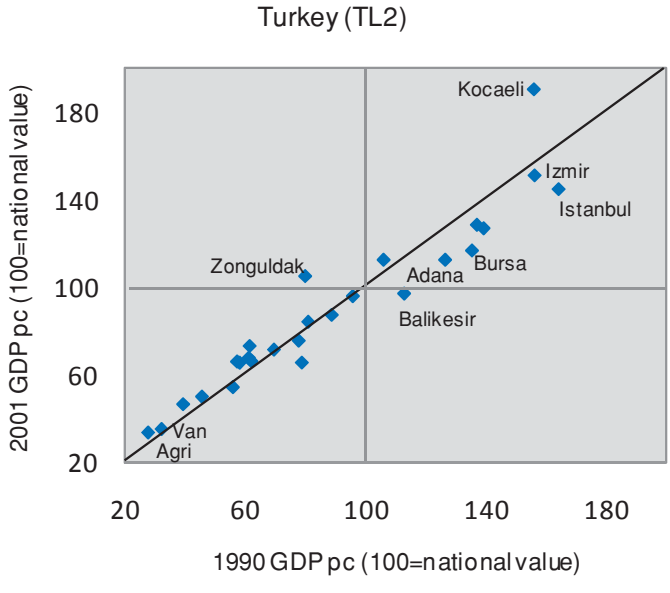
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

Turkey

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



Turkey's economy is more concentrated than on average in OECD countries. 10% of Turkish TL3 regions produce 54% of the national output as opposed to 38% in OECD countries.

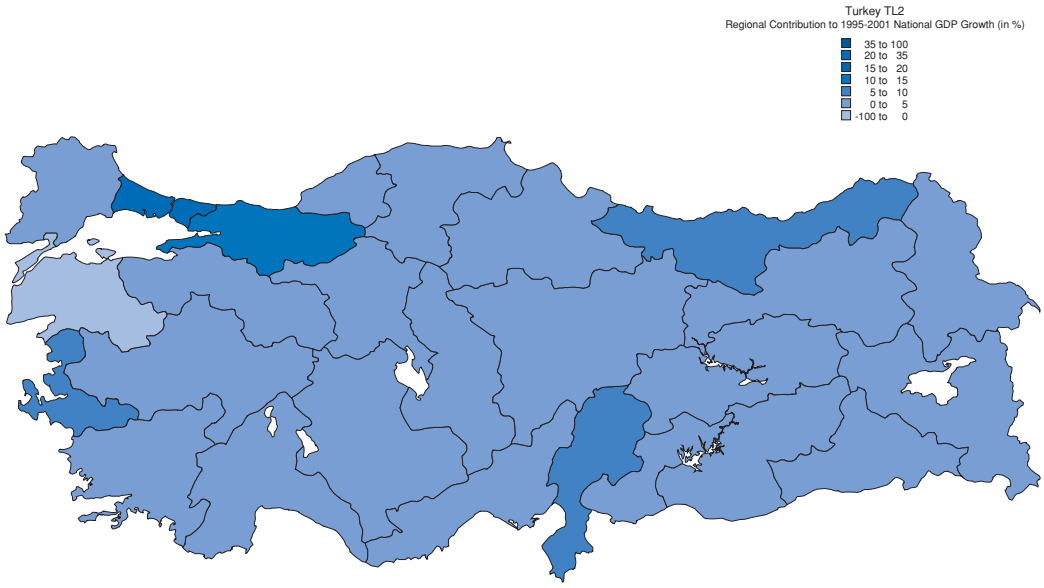
Inequality in GDP per capita among Turkey's TL2 regions declined from 1990-2001. Although inequality fluctuated from the early 1990s to the mid 1990s, in 1995 they declined gradually to their lowest level in 1999. From 1999-2000 inequality increased again and from 2000-2001 it declined.

Although inequalities have declined over this period, Turkey's level of inequality (in GDP per capita among TL3 regions) is one of the highest among OECD countries. Kocaeli displays the highest level of GDP per capita exceeding the national value by 90% and Agri records the lowest below 64% of the national value.

The decline in inequality in Turkey from 1990-2001 is currently mainly driven by the regions with higher levels of GDP per capita than the national average and lower growth rate such as Izmir (-0.03%), Istanbul (1.04%), Balkesir (1.64%), Bursa (-1.66%) and Adana (-1.78%). A second force contributing to a decline in inequality is the presence of lagging regions growing faster than the national average. In Turkey only one visible region displaying a converging trend is Zonguldak recording the fastest GDP per capita growth rate (5.6%) among Turkish TL2 regions. Consequently its lagging GDP per capita level in 1990 was 20% lower than the national average increase above the national average (5% in 2001).

The largest contribution to national growth was led by Istanbul and Kocaeli contributing to 23% and 12% of the overall GDP growth over 1990-2001.

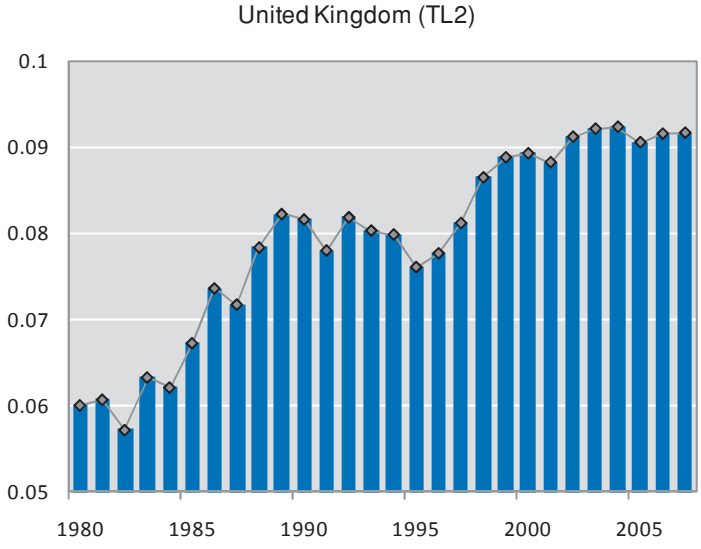
Regional contribution (%) to national GDP growth, 1995-2005



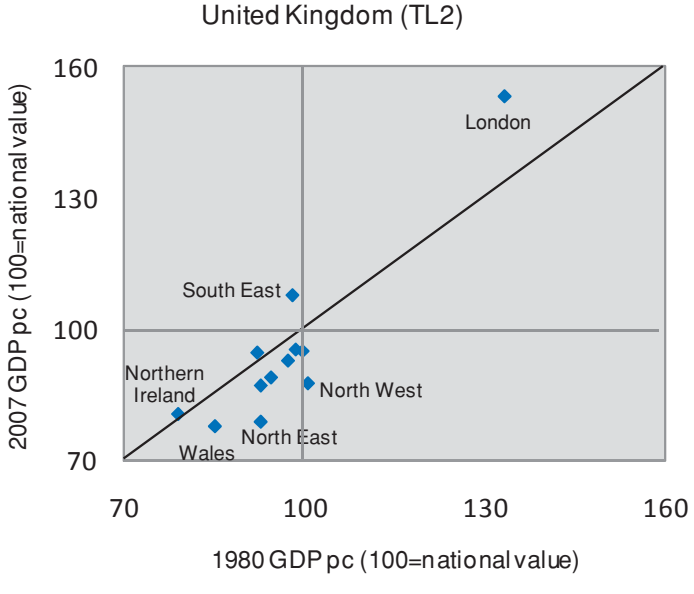
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

United Kingdom

Gini index of inequality of GDP per capita across TL2 regions, 1980-2007



Regional performance in GDP per capita over time, 1980 and 2007



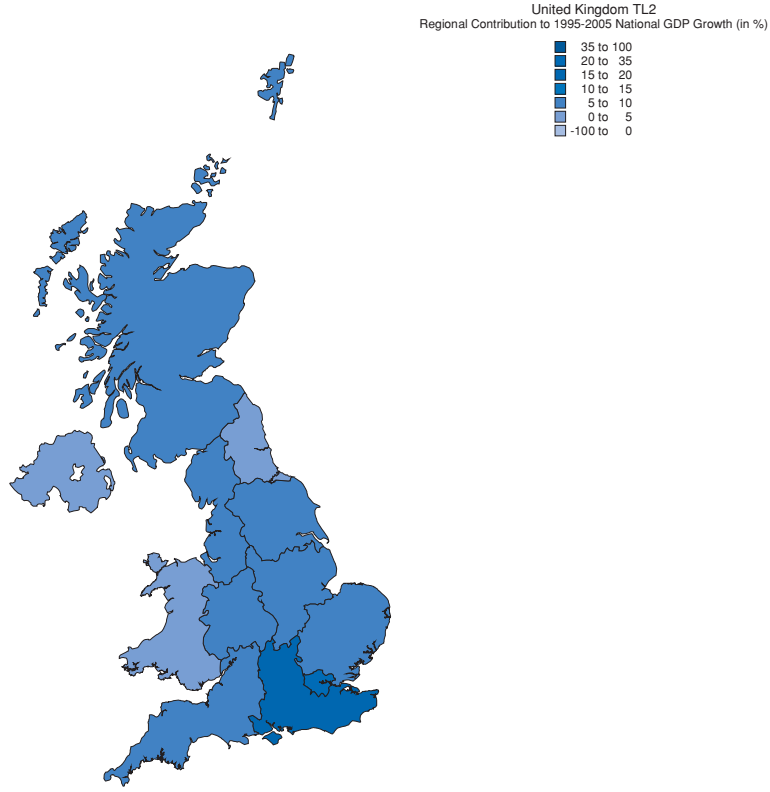
The United Kingdom displays the third highest concentration of economic activity among TL3 regions within OECD countries according to the index of geographic concentration. The TL2 region of London alone produces almost one-fifth of United Kingdom's GDP.

Inequality in GDP per capita among TL2 regions has been steadily increasing since the early 1980's. The increase has been driven by London's buoyant growth in GDP per capita (3.2%) outperforming the national average (2.6%) during the past decade. The gap in London's GDP per capita relative to the national average increased from being 33% above the national value in 1980 to 53% in 2007. Consequently London's contribution to national GDP growth over the past decade was quite significant (25%). Following London, South East recorded the second highest growth rate (3.1%) in GDP per capita over the past decade contributing to almost one fifth (17.9%) of the national GDP growth.

The further decline of lagging regions over 1980-2007 contributes to inequality; in particular the low growth rate in GDP per capita displayed by the lagging regions Wales (1.9%), North East (2.2%) and North West (2.2%).

Despite the lower growth rate of lagging regions, their combined contribution to national growth remains quite significant, 57.4% during the past decade.

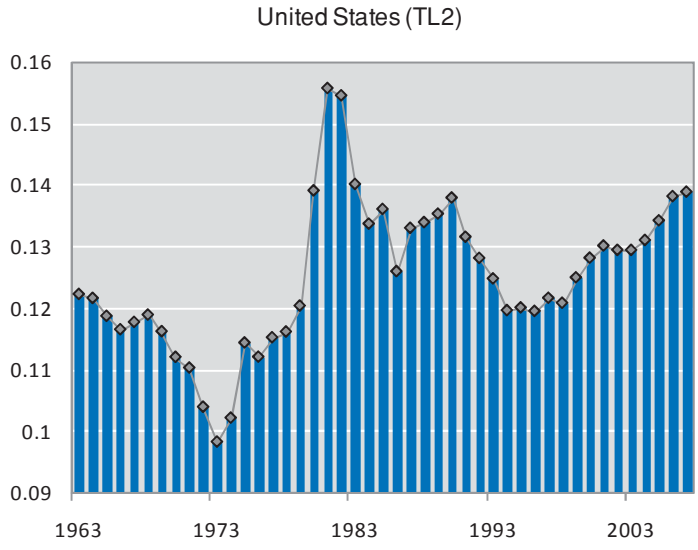
Regional contribution (%) to national GDP growth, 1995-2005



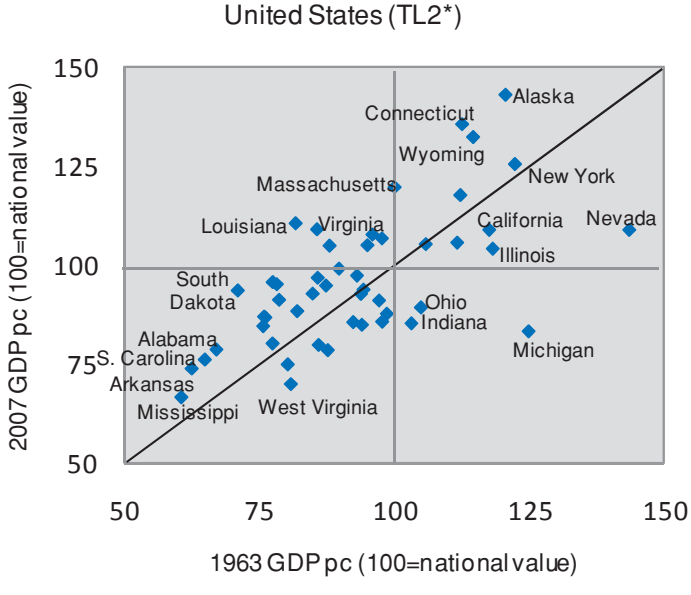
Source: OECD calculations based on OECD Regional Database (2009) and Cambridge Econometrics.

United States

Gini index of inequality of GDP per capita across TL2 regions, 1963-2007



Regional performance in GDP per capita over time, 1963 and 2007



Economic activity in the United States (among TL2 regions) is more concentrated than in OECD countries where 39% of national GDP is produced by 10% of regions as opposed to 35% in OECD countries. In fact almost 30% of national GDP is produced by California (12.6%), New York (8.2%) and Texas (7%).

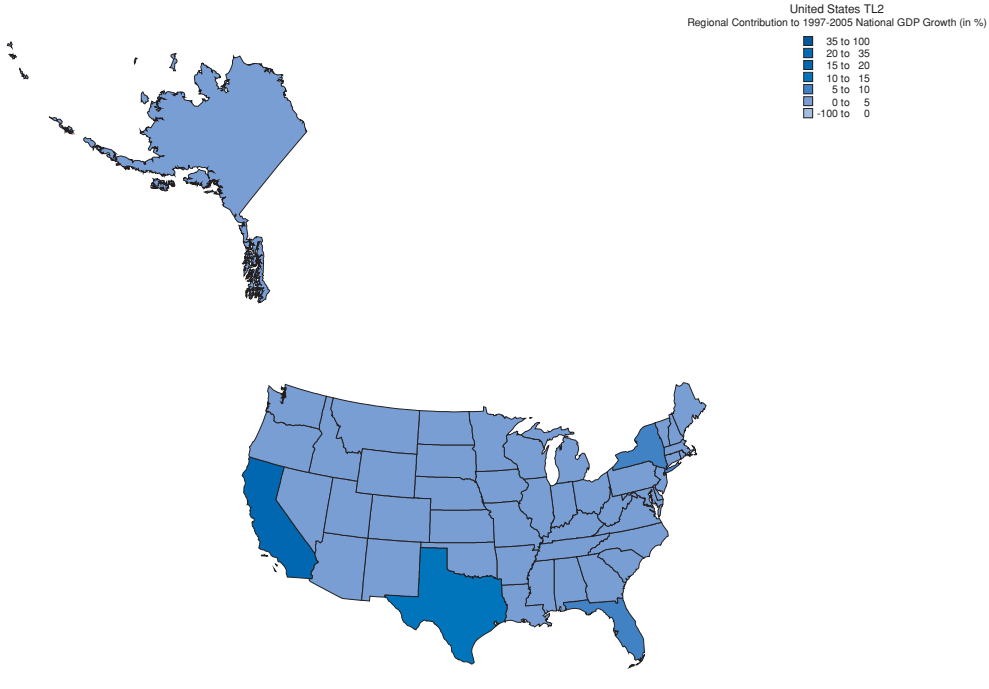
Inequality in GDP per capita among TL2 regions in the United States has fluctuated during the past 50 years. From 1963-73 inequality declined to its lowest level in 1973; thereafter inequality increased to its highest level in 1981. During these past 25 years inequality first declined from 1981 to 1997 and since 1997 it has been gradually increasing.

Alaska, Connecticut, Wyoming and Massachusetts improved their above average levels of GDP per capita from 1963 over the past 50 years contributing to an increase in inequality. Likewise the lagging region, West Virginia, also contributed to inequality by falling further behind.

In contrast the catching-up of the lagging regions Mississippi, Arkansas, South Carolina, Alabama, South Dakota Louisiana and Virginia have contributed to a decline in inequality as well as the falling behind of regions with above average GDP per capita levels in 1963 such as Nevada, Michigan, Indiana, Ohio and Illinois.

Over the past ten years the main drivers of national growth have been lead by California, Texas, Florida, New York and Virginia contributing to 14.9%, 10.3%, 7.3% and 6.5% of the overall GDP growth. The combined contribution to national growth by lagging TL2 regions (*e.g.* with below average GDP per capita levels in 2007) in the United States was quite significant (50%) over the past decade.

Regional contribution (%) to national GDP growth, 1995-2005



* The outlier region District of Columbia is not included in the graph

Source: OECD calculations based on OECD Regional Database (2009) and US Bureau of Economic Analysis.

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Why do some regions grow faster than others, and in ways that do not always conform to economic theory? This is a central issue in today's economic climate, when policy makers are looking for ways to stimulate new and sustainable growth.

OECD work suggests that there is no one-size-fits-all answer to regional growth policy. Rather, regions grow in very varied ways and the simple concentration of resources in a place is not sufficient for long-term growth. This report draws on OECD analysis of regional data (including where growth happens, country-by-country), policy reviews and case studies. It argues that it is how investments are made, regional assets used and synergies exploited that can make the difference. Public investment should prioritise longer-term impacts on productivity growth and combine measures in an integrated way. This suggests an important role for regional policies in shaping growth and economic recovery policies, but also challenges policy makers to implement policy reforms.

Further reading

OECD Regions at a Glance 2009

How Regions Grow: Trends and Analysis

Governing Regional Development Policy: The Use of Performance Indicators

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