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Economic convergence on different spatial levels: the conflict between cohesion and growth

Wirtschaftliche Konvergenz auf verschiedenen räumlichen Ebenen: Der Konflikt zwischen Kohäsion und Wachstum

Abstract

The analysis of economic disparities within the European Union strongly depends on the regional level considered. Whereas the economic gap between the member states has decreased over the last decades, regional disparities have rather deepened. The reason for these contradictory findings can be found in the increasing disparities within many of the member states: Especially in growing economies the gap between urban centres and rural peripheries tends to widen. The spatial concentration of research and development, high skilled labour, infrastructure and foreign investment in the capitals will therefore supposably become a big challenge for the accession countries, which will have to face increasing international competition. Joining a common market of more than 450 million people means new opportunities, challenges and threats for economic development, which have to be faced by local, regional and national governments as well as by European institutions.

EU-policies act in the dichotomy between the conflicting goals of economic growth and cohesion. Since they strongly influence regional conditions for production it is of great political interest whether a certain measure fosters economic efficiency by favouring the highly developed centres or rather enhances convergence by promoting lagging regions. The answer is, however, not trivial and needs closer examination: Measures encouraging regional cohesion on the European level can also increase disparities within a state or a region at the same time. This is the reason why the regional effects of EU-policies have to be analysed on different spatial levels.

Dealing with the spatial impacts of various European Policies (Regional Policy, Trans-European Networks, Common Agricultural Policy, Research and Technological Development Policy) there is some evidence that these policies try to compensate the effects of growing competition in the common market by concentrating their efforts on urban growth poles within the underdeveloped countries. Doing that, the European Union comes up to the two conflicting goals of growth and cohesion by promoting efficient economic development in the member states on the one hand and regional convergence on the European level on the other. This approach is of course mainly directed at European objectives and brings about new problems for the member states: According to the principle of subsidiarity the growing divergence within the member states is, however, not a policy task of the European Union but of the member states: Therefore national politics are still required to take on responsibility for these intranational problems by adopting their transport, regional and economic policies to the new challenge.

Kurzfassung

Bei der Analyse der wirtschaftlichen Disparitäten innerhalb der EU spielt die regionale Betrachtungsebene eine entscheidende Rolle. Trotz einer Reduzierung der wirtschaftlichen Unterschiede zwischen den Mitgliedstaaten im Laufe der letzten Jahrzehnte haben sich die regionalen Disparitäten im gleichen Zeitraum verfestigt. Diese widersprüchlichen Ergebnisse sind auf eine Zunahme der regionalen Disparitäten innerhalb vieler Mitgliedstaaten zurückzuführen: Vor allem in den wachsenden Volkswirtschaften verstärkt sich tendenziell der Unterschied zwischen städtischen Agglomerationen und dem ländlichen Raum. Für die Beitrittsländer, die sich dem zunehmenden internationalen Wettbewerb stellen müssen, könnte die räumliche Bündelung von Forschung und Entwicklung, qualifizierten Arbeitskräften und ausländischen Investitionen in den Hauptstäden daher zum Problem werden. Der Beitritt in einen gemeinsamen Markt mit über 450 Millionen Menschen bringt für diese Staaten neue Möglichkeiten, Herausforderungen und Risiken mit sich, denen die politischen Entscheidungsträger nicht nur auf lokaler, regionaler und nationaler, sondern auch auf europäischer Ebene begegnen müssen.

Wachstum und Kohäsion sind gleichberechtigte, aber in der Regel entgegengesetzte Ziele der EU. Da die meisten Politikbereiche die regionalen Produktionsbedingungen maßgeblich beeinflussen, ist es von erheblichem politischem Interesse, ob eine bestimmte Maßnahme durch Bevorzugung der bestehenden Wirtschaftszentren eher die wirtschaftliche Effizienz fördert oder durch eine Förderung der strukturschwachen Regionen einen Beitrag zur Konvergenz leistet. Die Antwort ist in vielen Fällen keineswegs einfach zu beantworten und bedarf einer näheren Betrachtung: Maßnahmen, die geeignet sind, den regionalen Zusammenhalt auf europäischer Ebene zu fördern, können gleichzeitig zu einer Verstärkung der innerstaatlichen oder regionalen Disparitäten beitragen. Deshalb sind die regionalen Auswirkungen von EU-Politiken auf unterschiedlichen räumlichen Ebenen zu untersuchen.

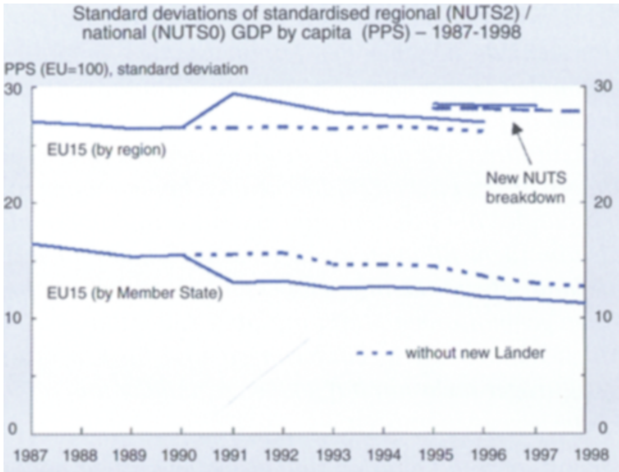
Bei näherer Betrachtung der räumlichen Auswirkungen verschiedener EU-Politikbereiche (Regionalpolitik, transeuropäische Netze, gemeinsame Agrarpolitik, Forschungs- und Technologieentwicklungspolitik) zeigt sich, dass ein Teil der Maßnahmen darauf abzielt, die Auswirkungen des steigenden Wettbewerbs durch eine Konzentration der Förderungen auf ausgewählte Wachstumsmetropolen innerhalb der unterentwickelten Mitgliedstaaten zu kompensieren. Auf diese Art erfüllt die EU die widersprüchlichen Ziele Wachstum und Kohäsion gleichermaßen, indem sie einerseits eine effiziente wirtschaftliche Entwicklung innerhalb der Mitgliedstaaten und andererseits die regionale Konvergenz auf europäischer Ebene fördert. Dieser Ansatz orientiert sich in erster Linie an europäischen Zielen und schafft gleichzeitig neue Probleme für die Mitgliedstaaten. Nach dem Subsidiaritätsprinzip stellt jedoch die wachsende Divergenz innerhalb der Mitgliedsländer keine Politikaufgabe der EU, sondern der einzelnen Staaten dar. Deshalb steht nach wie vor die Notwendigkeit für eine Verkehrs-, Regional- und Wirtschaftspolitik auf nationaler Ebene, die sich innerstaatlicher Verteilungsprobleme annimmt.

1 Cohesion and growth as main goals of the European Union

The European Union (EU) strives for cohesion and convergence goals as well as for economic competitiveness and growth. According to Article 2 of the Treaty establishing the European Community, the Community aims at promoting "a high degree of competitiveness and convergence of economic performance". Article 3 states that the activities of the Community shall include "the strengthening of economic and social cohesion" as well as "the strengthening of the competitiveness of Community industry" (European Communities 2002). Although these two goals are of equal importance, it is not easy to meet the requirements of both at the same time. Cohesion and growth might be conflicting and sometimes even contradictory goals, since measures in the economically lagging regions are generally less efficient than in highly developed areas. Assuming that productivity of public investment depends on qualification of labour, infrastructure supply and economic structures, economic growth can be achieved more easily by promoting projects in the urban agglomerations than by supporting measures in the lagging areas.

This conflict of policy goals leads to the question whether the European funds should rather be used for promoting total economic growth or for the reduction of regional disparities. Thus the present paper deals with the question, whether disparities have decreased over the last decades and in which way European policies can contribute to the goal of cohesion. The changes of disparities between and within the member states are therefore examined both on a national and on a regional scale. The main findings are contrasted with the actual measures of the EU in the fields of Regional Policy, Common Agricultural Policy, Research and Technological Development and Trans-European Networks, in order to find out to what extent they can be explained by European policies.

Figure 1
Change of disparities on regional and national level (EU15)



Standard deviations of standardised regional (NUTS2-level) / national (NUTS0-level) GDP by capita (PPS) 1987-1998

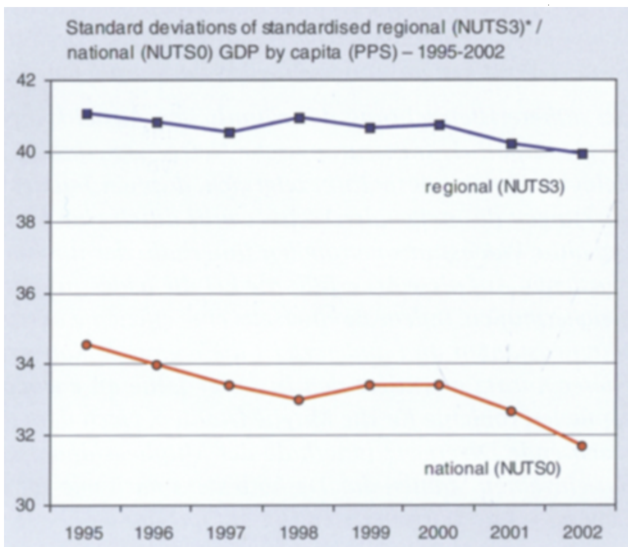
Source: European Communities (2001)

2 Regional and national disparities in the European Union

The analysis of economic disparities within the EU strongly depends on the spatial level considered. The statistical spatial units of the EU as defined by the NUTS classification, however, highly differ in size, which poses the problem of comparability. On the NUTS0-level, which refers to the states as a whole, the statistical units range from Germany with more than 82 million inhabitants to Luxembourg with less than half a million. The same is true for the regional units: The NUTS3-level subsumes regions with a population size between about 20 000 and 5 million. Because of these differences the empirical findings on national and regional disparities should be handled with care and interpreted thoroughly.

Regarding the national differences in GDP per capita the gap between the rich and the poor member states of the EU15 has clearly decreased over the last decades. Between 1988 and 2001 the cohesion countries have significantly converged to the European average (European Communities 2004): GDP per capita in Portugal has increased from 58,9 % to 70,7 % of the EU15 average, Greece from 58,1 % to 67,1 %, Spain from 74,0 % to 84,2 % and Ireland has even become one of the richest countries almost doubling its economic performance in comparison to the EU15 from 65,9 % to 117,6 %. At the same time the wealthier countries were able to maintain their competitive edge to a large extent without improving their privileged position. These different developments induce a reduction of national disparities,

Figure 2
Change of disparities on regional and national level (EU25)



The regional function only considers NUTS3-regions with complete data for the whole period and therefore does not include Portugal, Malta and parts of Poland. The national function does not include Luxembourg, Malta and Cyprus

Datasource: Eurostat (2005)

which is displayed by the reduction of standard deviation of national GDP per capita in PPS (see Fig. 1).

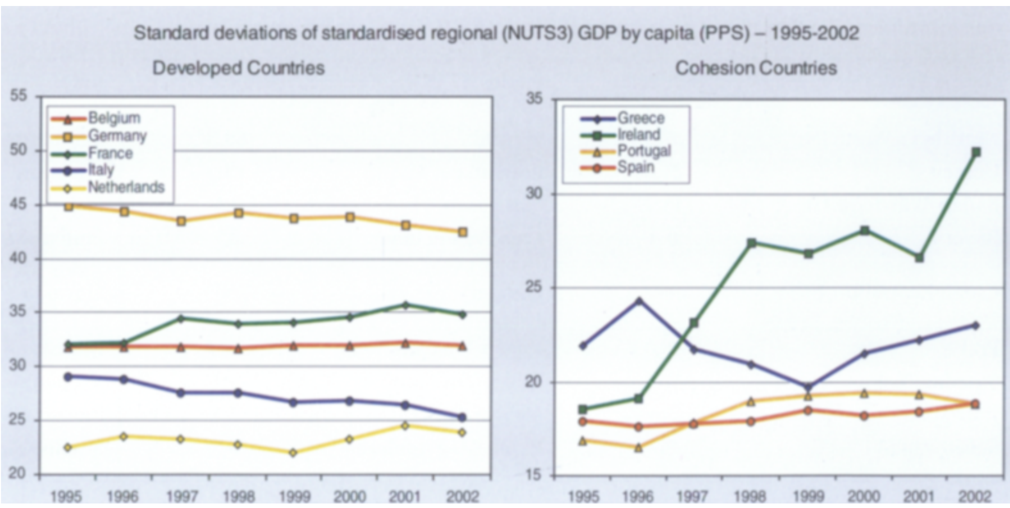
Whereas the economic gap between the member states of the EU15 has decreased over the last decades, regional disparities on the NUTS2-level have not significantly changed. From 1988 to 1998 the GDP per capita ratio between the richest and the poorest regions (each covering 25 % of the total population) has remained unchanged at a value of 2.0 (European Communities 2001). This development is reflected by the almost constant standard deviation of regional GDP per capita in PPS, even when eliminating the statistical effect resulting from the German Unification (see Fig. 1). These findings of the Second Cohesion Report are mainly confirmed when extending the scope of the analysis by considering the NUTS3-level, by including the accession countries and by using more up-to-date data. As shown in Figure 2, regional disparities on the NUTS3-level show a rather constant level between 1995 and 2002, while inequalities between the member states have significantly decreased during this period, when eliminating the three mini states Luxembourg, Malta and Cyprus.[1] Even when considering the problem of comparability of spatial units it can be stated that the reduction of national disparities in the EU seems to be tied to decreasing cohesion on a regional level.

The reason for these contradictory findings on different spatial levels can be found in increasing disparities within several member states: Due to the spatial concentration of research and development, high skilled labour, infrastructure and foreign investment the gap between urban centres and rural periphery tends to widen particularly in growing economies. The high growth rates of Spain (3,7 %) and Portugal (3,5 %) were primarily generated by the capital regions of Madrid (4,2 %) and Lissabon (4,1 %)[2], which developed more dynamically than most parts of the country (European Communities 2004). The spatial concentration of economic development in a few national centres, however, is a dangerous threat for cohesion within economically lagging countries in their catching-up process: While regional disparities within the majority of highly developed Central European countries did not change significantly or even declined over the last years (especially in Germany and Italy the gaps diminished), the cohesion countries are confronted with growing inequalities: Figure 3 shows that contrary to most Central European countries, the standard deviation of GDP per capita of the NUTS3-regions has increased between 1995 and 2002 within each of the cohesion countries.

Growing disparities are even more obvious in the Middle and Eastern European accession countries that have joined the Union in 2004. As shown in Figure 4 the standard deviation of GDP per capita has increased in all former socialist accession countries since 1995. With the exception of Poland, which is characterised by a rather polycentric settlement structure, these countries are economically dominated by their capital cities, which profit from relative advantages of location to an increasing degree. This competitive edge is the main reason why economic growth in the capital regions distinctly exceeds the national average of most lagging countries: Prague, for example, had an average growth rate of 4,4 % between 1995 and 2001, while the economic output of the Czech Republic only increased 1,5 % per year. The same is true for Hungary, where the economic growth rate of 4 % was largely determined by the development of the region Közép-Magyarország (+5,2 %) and Slovakia, where GDP grew much faster in the capital region of Bratislavský (+5,7 %) than in the whole country (+3,9 %) (European Communities 2004).

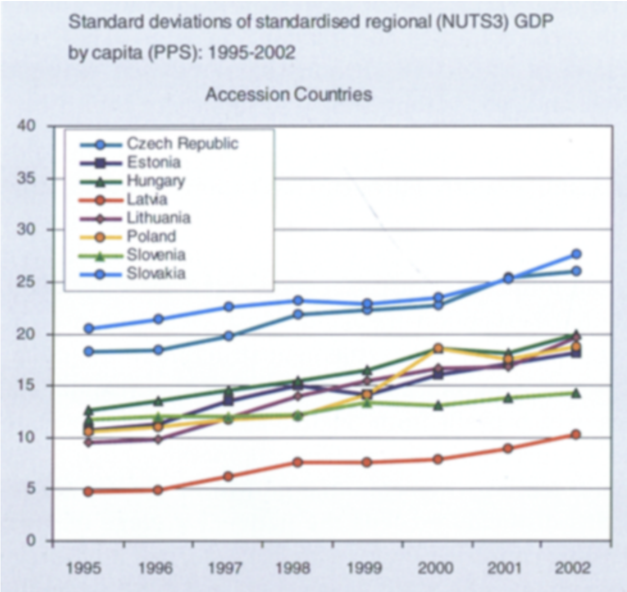
Increasing disparities within these growing economies can be explained by growing competition of regions. This phenomenon has been induced by the relatively quick integration of the accession countries into the European market since the fall of the iron curtain and could hardly be influenced or controlled by regional or national policies. The reason for these changes is to be found in different production conditions between ur-

Figure 3
Change of disparities within selected developed and cohesion countries



Datasource: Eurostat (2005)

Figure 4
Change of disparities within accession countries



Datasource: Eurostat (2005)

ban centres and rural peripheries. In these countries only a few locations are able to meet the new challenges of a European or even global competition of regions. Therefore research and development activities, educational programmes and infrastructure investments are increasingly concentrated in selected urban agglomerations, while the remaining parts of the countries are largely neglected. This development boosts the competitiveness of a small number of urban agglomerations characterised by skilled labour force and high quality of physical and social infrastructure (especially with regard to transport and communication networks) as well as by innovative power. It is somehow evident that the political bodies in these countries were unable to come to terms with the negative cohesion effects of that process.

All these conditions are a crucial benefit for the firms located in the urban centres and make them more attractive for foreign investors. As shown in Table 1 spatial concentration of foreign direct investment (FDI) predominantly appears in the economically lagging countries. Although in Germany and Italy FDI significantly concentrates on the higher developed (Western respectively Northern) parts of the countries, a reasonable number of provinces profit from foreign investment, whereas in Spain the two dominating cities of Madrid and Barcelona account for more than 80 % of all FDI.

As expected the concentration of foreign investment is much more pronounced in the accession countries where it has become a serious problem for balanced economic development. As shown at the bottom of Table 1 the position of the national capitals in the Czech Republic, Hungary and Slovakia is so dominant, that they attract half or even two thirds of all FDI, which goes far beyond their population shares.

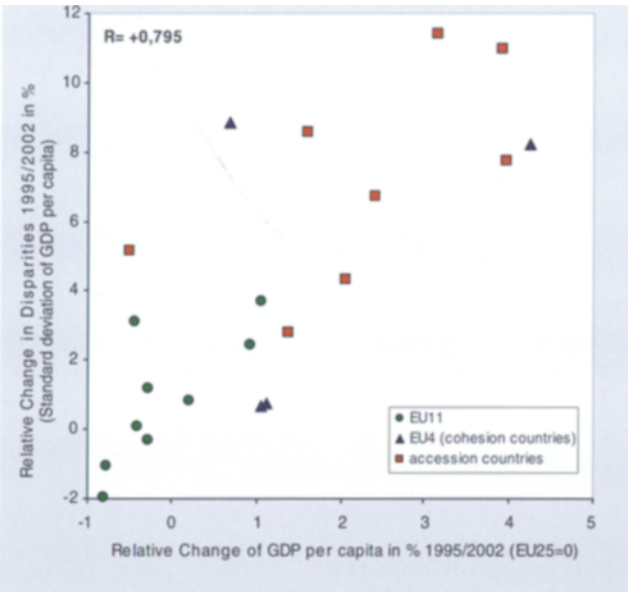
These findings give rise to the assumption that there is a correlation between total economic growth and the change of intranational disparities in Europe: While the higher developed states in Central Europe show modest but constant growth rates (on a high level) in most regions, the dynamic economic development of the lagging states at the European periphery and in Middle and Eastern Europe largely concentrates on only a few locations. Due to increasing international competition of regions it seems that only the big urban agglomerations (in many cases only the capitals) are able to compete with highly developed regions in Central and Western Europe, whereas smaller regional and

Table 1
Concentration of Foreign direct investment in selected EU15 and accession countries (in percent of national amount)

Germany	**1998-2000**	**Spain**	**1999-2001**	**Italy**	**2000**
Nordrhein-Westfalen	37,5	Madrid	69,5	Lombardia	43,5
Hessen	21,6	Cataluña	13,5	Piemonte	14,9
Baden-Württemberg	11,7	País Vasco	5,5	Lazio	8,4
Bayern	9,0	Com. Valenciana	2,7	Emilia-Romagna	7,8
Czech Republic	**2001**	**Hungary**	**2001**	**Slovakia**	**2001**
Praha	49,3	Közép-Magyarország	67,7	Bratislavský	63,2
Støední Cechy	10,7	Közép-Dunántúl	9,4	Východné Slovensko	18,8
Jihozápad	7,6	Nyugat-Dunántúl	7,5	Západné Slovensko	10,3
Severozápad	8,2	Észak-Magyarország	6,2	Stredné Slovensko	7,7

Source: European Commission (2004)

Figure 5
Correlation between economic growth and change of intranational disparities within the member states of the EU25



Datasource: Eurostat (2005)

local centres and especially rural areas constantly lose economic attraction and productivity. Therefore the catching-up process of the lagging countries seems to be intrinsically tied to growing disparities on a national scale. Figure 5 reveals a significant positive correlation (R = 0,795) between national economic growth and the change of intranational disparities.

3 Cohesion effects of European Policies[3]

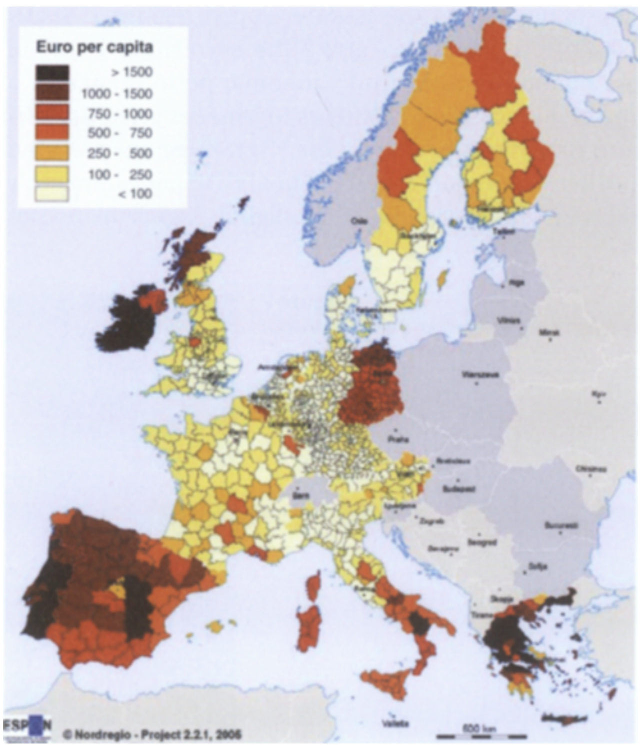
The mentioned empirical results indicate that the dynamic development in the lagging countries has caused a reduction of economic disparities between the member states and has therefore fostered cohesion on a national scale. At the same time growing regional inequalities within many of the member states have superposed this development and therefore constrained European cohesion on a regional level. In this context it is of great interest whether European policies can partly be called to account for these findings or whether they work in the opposite direction.

Regional Policy

Regional Policy, which explicitly aims at "reducing disparities between the levels of development of the various regions" (European Communities 2002), spends more than 30 billion € on economic and social cohesion per year. Although there is no clear statement about the spatial level on which this should happen, it can be assumed that "regional" refers to NUTS2 and NUTS3-levels. Looking at the spatial distribution of Structural Fund spending during the last financing period it becomes evident that according to the definition of Cohesion Policy goals the major part of the money goes to lagging regions at the European periphery (see Fig. 6). This way of distributing Structural Funds is definitely applicable for reducing regional and national disparities on a European scale, but it hardly considers existing intranational and intraregional inequalities. With the exception of Italy and Germany, where the less developed parts are clearly privileged in comparison to the rest of the country, the differentiation within the member states is not very distinct: Even the richer parts of the cohesion countries get higher funding than most of the less favored regions in the highly developed countries in Central Europe.

A more accurate insight into the redistributive effects of structural subsidies can be obtained by considering the distribution of funds on different types of settlement. Surprisingly, there are only little differences when comparing the average funding according to the position in the European hierarchy of locations (ESPON 2004 c). As shown in Table 2 the international and national "Functional Urban Areas (FUA)", which represent the big urban centres, do not get significantly less financial help from the Structural Funds than the rural regions. The

Figure 6
Spatial distribution of Structural Fund spending



Source: ESPON (2004 c)

Table 2
Structural Funds assistance for different types of functional urban areas in EU15

	International FUA	National FUA	Regional/ Local FUA	Non FUA
Structural Fund spending p. capita in €	212	220	321	255

Source: ESPON (2004 c)

fact that regional and local FUA, which cover medium sized cities (most of them with a population of 50 000 to 100 000) receive the highest donations per capita indicates that regional policy aims at reducing regional disparities on a European scale by supporting selected regional centres.

Common Agricultural Policy

The biggest part of the EU-budget is still dedicated to Common Agricultural Policy (CAP). Almost 50 billion € are spent on market price support for agricultural products, direct income payments to farmers and rural development, which amounts to almost 45 % of the total budget. Although these measures are not explicitly targeted on favouring the lagging reasons, it is widely assumed that they predominantly affect the less productive rural areas. The spatial distribution of financial resources spent by CAP, however, does not indicate any preference of the less developed regions (ESPON 2004 b). As shown in Table 3 the correlation between agricultural funding and economic performance of a region is very poor. Payments for market price support and rural development in the NUTS3-regions are even positively correlated with regional GDP per capita, only direct income payments are slightly higher in poorer regions. These findings point out that Common Agricultural Policy does not contribute to the reduction of regional disparities at all, neither on the European level nor within the member states. Thus, it does not substantially support social and economic cohesion.

Table 3
Correlation between CAP-payments and GDP per capita in NUTS3-regions (EU15)

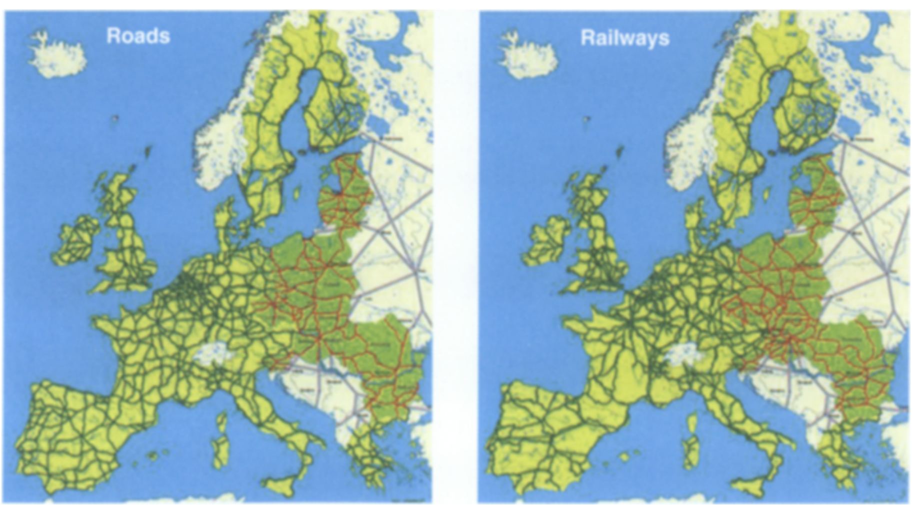
Support per Utilisable Agricultural Area (UUA)	GDP per Capita
Market Price Support (Pillar 1)	+ 0.113 (**)
Direct Income Payments (Pillar 1)	- 0.156 (**)
Rural Development (Pillar 2)	+ 0.143 (**)

** Correlation statistically significant at the 0.01 level (2-tailed)
Source: ESPON (2004 b)

Trans-European Networks

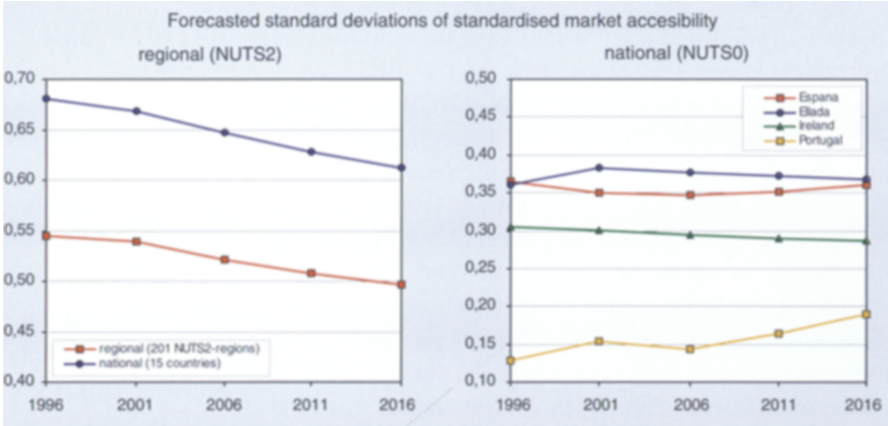
According to the Treaty establishing the European Community the "development of trans-European networks in the areas of transport, telecommunications and energy infrastructures" (European Communities 2002) is not only directed at facilitating the free movement of goods, persons, services and capital, but also at supporting social and economic cohesion. Although financial funding of transport infrastructure projects is rather modest[4], the strategic road and rail networks express political intentions. Since the Trans-European Transport Networks (TETN) have been put up as an ambitious plan for the future shape of high-ranking transport corridors[5] their spatial effects are definitely worth being examined. Figure 7 shows that both road and rail connections make up dense networks which cover the whole area of the EU27 and make the majority of NUTS2-regions well accessible.

Figure 7
TEN: Strategic road and rail networks



Source: TINA Secretariat (1999)

Figure 8
TETN-effects on disparities in market accessibility on a national and regional level (EU15) and within the cohesion countries



Forecasted standard deviations of standardised regional (NUTS2-level) and national (NUTS0-level) market accesibility.

Data Source: SASI modelling results

Consequently the Trans-European Transport Networks promote regional convergence from a European perspective by making the Central European markets more accessible from the periphery of the Union. The left diagramme in Figure 8 indicates that the stepwise realisation of all missing links of the strategic networks until the year 2016 would result in a significant decrease of disparities in market accessibility in the EU15 both on a national and on a regional level[6].

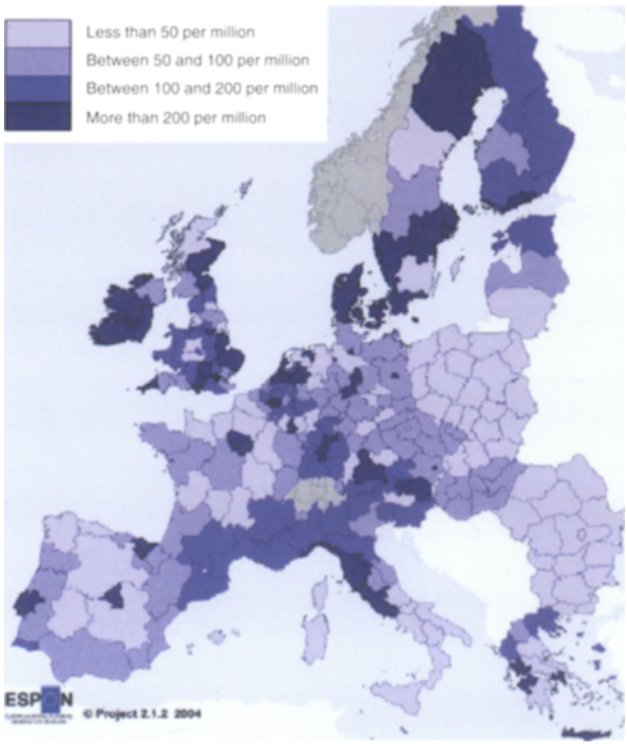
A closer look on the networks, however, reveals that only the bigger regional and national centres are connected, whereas many rural and sparsely populated areas are largely ignored. As shown in the right diagramme in Figure 8 spatial inequalities in market accessibility on the NUTS2-level would remain approximately the same in three of the cohesion countries and would even increase in Portugal. Since market accessibility heavily influences transport costs and business assets it is a fundamental location factor, which strongly determines the economic development of a region. Therefore the realisation of all projected road and rail connections, which would not clearly reduce spatial inequalities in market accessibility, cannot be expected to support economic convergence within the less developed member states. Considering the actual design of the projected networks, which should mainly facilitate trans-European and not primarily national transport of goods and persons, these findings are not surprising and do match the political intentions of the EU to a large extent.

Research and Technological Development

Finally, the promotion of Research and Technological Development (RTD), which is one of the most ambitious policy fields of the EU (approximately 4,2 billion € within the Framework Programmes and other policies per year) is examined with regard to its cohesion effects. Even though RTD-Policy is not explicitly directed at reducing regional disparities, the spatial impacts of financial support for Research and Development should not be ignored.

Although there is no empirical evidence on the regional distribution of funds, the share of researchers participating in the 5th Framework Programme (see Figure 9) clearly demonstrates that RTD policy strongly concentrates on the big urban agglomerations (ESPON 2004a). This observation especially applies to the less developed countries, where a predominant part of research is done in the capital regions and a few in-

Figure 9
Participation in the 5th Framework Programme



Source: ESPON (2004 a)

novative centres. The negative cohesion effect of RTD efforts is underlined by the fact that participation in Objective-1-regions is some 63% of the EU15 average, which is even below their level of GDP per capita (70 %). Furthermore the share of firms and organisations based within Objective 1 regions account for only 14 % of total participation and for 12 % of all project leaders, although these regions cover about 27 % of the population. In all likelihood this uneven distribution will not be confined to the EU15, but it will affect the accession countries to an even higher degree. Due to their monocentric economic structure spatial concentration of RTD will probably grow there within the next few years and increasingly become a major threat to spatially balanced economic growth.

4 Conclusions with regard to regional policies in the member states

At first sight the four EU-policies considered show different kinds of impacts on regional convergence. While Common Agricultural Policy (CAP) and Research and Technological Development (RTD) do not support cohesion goals at all, Regional Policy and Trans-European Networks (TEN) are clearly directed at reducing regional and national disparities on a European scale. The idea behind these strategies, however, is to foster economic development in the lagging areas by focusing on selected locations instead of granting relief all over the country. Assuming that efficiency of public funding rises with the quality of specific location factors economic development can more easily be achieved by concentrating activities on the urban agglomerations. In this way these two policies combine the idea of redistribution with the efficient application of funds and therefore give consideration to total economic growth as well as to regional cohesion from a European perspective. At the same time, however, they abet the problem of intranational and intraregional disparities. Especially the economically lagging countries, which receive the major part of the subsidies, are increasingly confronted with growing inequalities between a few prospering urban regions and a majority of provincial areas.

The fact that Regional Policy and Trans-European Networks contribute to growing disparities on a national scale, however, cannot be considered as a failure of EU cohesion policies. According to the principle of subsidiarity the goal of economic convergence is confined to reducing regional disparities on a European scale. Empirical data demonstrating that the lagging countries have been able to reduce their handicaps, prove that the EU has been successful in that ambition over the last decades. It is highly plausible that this development has been supported by the effective use of subsidies by focusing them on national and regional centres. At the same time this strategy has certainly aggravated the problem of increasing economic disparities within the less developed member states. Since the solution of this problem is definitely not the duty of the EU, the political bodies in the member states have to face these facts and meet the challenge of enhancing cohesion within their territories.

Consequently national and regional governments cannot be let off the hook regarding their responsibility for existing intraregional inequalities. In order to make all regions benefit from the economic boom in the centres, they would be well advised to adapt their regional and transport policies to the European measures in that field. On the one hand regional and structural programmes of the member states have to improve general conditions in the rural and underdeveloped regions making use of endogenous potentials. On the other hand national transport planning departments have to provide an adequate secondary road and rail infrastructure supplementing the high-level Trans-European Networks, so that the growth effects induced in the regional centres can spread to the surrounding areas (see Kramar 2002). Considering the fact that growing international competition has accelerated the spatial concentration of investment and economic growth, especially the accession countries will have to meet this challenge in order to guarantee a balanced development and to prevent further decay of the underdeveloped regions.

Footnotes

(1)
As mentioned above the strong differences in size pose the problem of comparability and make the interpretation of national disparities difficult. Consequently the three smallest countries were not considered in his analysis.

(2)
Average annual growth of GDP on the NUTS2-level 1995-2001

(3)
Many empirical results and findings presented in this chapter are based on reports of the European Spatial Planning Observation Network (ESPON) which has been founded to improve the knowledge and understanding on spatial development of an enlarging European Union.

(4)
With a few exceptions a maximum of only 10 % of the investment in transport infrastructure can be financed by the EU.

(5)
These "strategic networks" of the EU15 are laid down in Decision No. 1692/96/CE of the European Parliament and of the Council (European Communities 1996). They have been amended by the Transpart Infrastructure Need Assessment (TINA) for the accession countries in 1999.

(6)
Accessibility effects of the TETN have been assessed in the "SASI"-project ("Socio-economic and Spatial Impacts of Transport Infrastructure Investments and Transport System Improvements") that was funded by the 4th framework programme of the EU. In this project regional accessibility was interpreted as the market potential of a region and defined on the base of a gravity-based potential model. (see Bökemann & Wegener 1998)

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