



OESTERREICHISCHE NATIONALBANK

Stability and Security.

# WORKSHOPS

Proceedings of OeNB Workshops

*New Regional Economics in  
Central European Economies:  
The Future of CENTROPE*

March 30 to 31, 2006



No. 9

# Economic Challenges in the CENTROPE Region<sup>1</sup>

---

*Gerhard Palme*

*Austrian Institute of Economic Research*

*Martin Feldkircher*

*Institute for Advanced Studies*

“CENTROPE” is a region that was established by policy makers in several countries in Central Europe as a platform for cross-border coordination and cooperation. The will to cooperate across borders is driven by the understanding that the competitiveness of the region as a whole can be improved by working together. In doing so they are proceeding from the assumption that this (border) region, which has moved from the edge to the middle of Europe, can now assume the function of a bridge. A situation analysis will give details of the strengths and weaknesses of this region. For reasons of data availability the analysis is divided into a national and a regional section. In the national section information about the competitiveness and its determining causes will be given for those Central European countries that are found in the CENTROPE region: Austria, the Czech Republic, Slovakia, and Hungary. In the regional section the emphasis will be placed on the structural and also partly functional characteristics of the CENTROPE region. In doing so, CENTROPE as a region will be defined as consisting of the following NUTS 2 (Nomenclature of Units for Territorial Statistics) regions: Vienna, Lower Austria, Burgenland, West Transdanubia, Bratislava, Western Slovakia, South Moravia and South Bohemia.<sup>2</sup>

## 1. Favourable Cost and Market Factors in Central Europe

Central Europe is an interesting sales market. The four small Central European countries constitute a relatively wealthy and dynamic economic area, even though the level of prosperity is lower than in the European Union, which is clear since the Czech Republic, Slovakia and Hungary are transition countries. Overall, the per capita gross domestic product (GDP) at purchasing power parity (PPP) in Central

---

<sup>1</sup> This is a short version of a project report that can be found under [http://www.oenb.at/de/service\\_veranst/fruehere\\_va/va2006/HZZ\\_Workshop/speeches\\_papers.jsp](http://www.oenb.at/de/service_veranst/fruehere_va/va2006/HZZ_Workshop/speeches_papers.jsp)

<sup>2</sup> In contrast to the definition used in this paper, South Bohemia is not always considered a part of the CENTROPE region.

Europe was about 14.3% below the average of the EU-25 (2004). The transition countries of Central Europe only started to change to market economies in the early 1990s and only became members of the European Union<sup>3</sup> in 2004. However, they have higher per capita income than all the “new” EU members together. Also, Austria generated a higher GDP per capita than all the “old” members of the EU-15. Furthermore, Central Europe is very dynamic, which helps its market perspectives. Since surmounting the transition crisis in the middle of the 1990s, the new EU Member States of Central Europe are now in a catching-up phase. With the exception of the Czech Republic, in the last ten years they have shown economic growth that is clearly above the EU average.

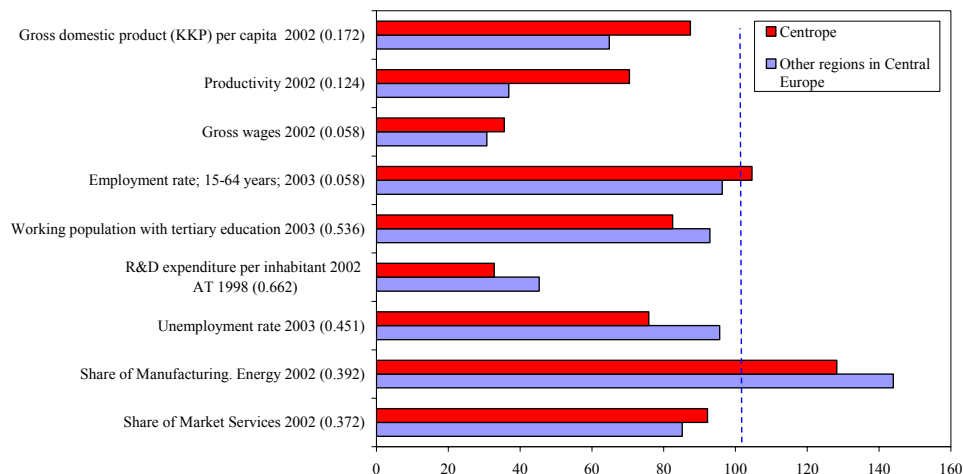
Another important location factor is the relatively low labour costs. To be sure, Austria has a high wage level, but due to high productivity its unit labour costs are relatively low. In the new EU Member States of Central Europe wages and unit labour costs are relatively low. Moreover, the unit labour costs might be improving because the transition countries are quickly catching up in productivity. Technological progress is particularly important, in order to survive competition from the “new low-wage countries” (e.g., Rumania, Bulgaria).

Aside from low labour cost advantages, Central Europe has also become an attractive location for business investments due to the relatively low taxes on businesses. Particularly in recent times taxes on business have been in part significantly lowered, and not only in some of the new Member States (e.g., Slovakia, Hungary), but partially as a reaction to that, also in Austria.

The dramatic structural changes in the transition countries of Central Europe have had their effects on the labour markets. Employment trends have remained muted, and unemployment has increased. Still, labour market conditions are not any more adverse than in the European Union. Labour participation is comparable to the European average; however, older employees are more likely to exit the labour market. The unemployment rate (Central Europe 2004 8.3%) is in fact about one percentage point below the average of the EU-25 (9.2%). An exception is Slovakia, which has a very high rate of unemployment (18.2%).

---

<sup>3</sup> These will be referred to below as the “new EU Member States”.

*Chart 1: Indicators of the Regions in Central Europe (EU-25=100)*

Note: Dotted line: EU-25=100; Terms in brackets: probability of error.

Source: Eurostat, Austrian Institute of Economic Research calculations.

## 2. Central Europe is Integrated into the Economy of the European Union

The economy in Central Europe has been developing dynamically not at least due to foreign trade. In 2003, exports from the four countries of Central Europe were 2.3 times higher than in 1995; imports increased 2.1-fold in this time period. In contrast to that, exports and imports in the European Union (EU-25) each increased 1.7-fold. In the transition countries foreign trade has completely adapted to the European Union market; in Austria after the accession to the EU in 1995 trade was further intensified. More than two thirds of the exports from the Central European countries go to the countries of the EU-15, more than three fourths to the countries of the EU-25. In the meantime, Central Europe is closely integrated into the division of labour within Europe; the emphasis is upon trade with semi-finished goods of relatively low quality. The competitive advantage of low labour costs is evident particularly in labour and technology intensive industries that use many blue-collar skilled labourers. The medium term development in the transition countries of Central Europe also tends toward trade in semi-finished and/or finished goods of higher quality.

The opening of Central Europe to the West was not only evident in foreign trade, but also in direct foreign investment. The strong commitment of multinational companies can be seen as evidence that Central Europe is advantageously located. Multinational companies are responsible for a large part of the comparably

high business investments. 2003 in the new EU Member States 35% of GDP was made up of the capital stock of foreign direct investment. This is clearly higher than the worldwide figure (23%) and somewhat more than the EU-15 figure (33%). Austrian companies are also participating in this, and have thereby advanced their internationalization considerably. Multinational companies are very important for the economic development of Central Europe. Since foreign direct investment transfers modern know-how increase productivity, the technological catching-up process of the new EU Member States is furthered. Cost and efficiency motives are of particular importance in industries with middle and high technological levels. Foreign manufacturing companies have attained a level of productivity in the new EU Member States that is 60% higher than local businesses (Hunya-Geisheker, 2004).

### **3. Deficiencies of the Transportation and Education Infrastructures in Central Europe**

The process of catching-up has not yet been completed. There is still somewhat of a gap, particularly with regard to “modern” location factors. This is true both of the physical infrastructure as well as of schooling at higher qualification levels. In particular the transportation and communication infrastructures of the new EU Member States need to be modernised. This includes both the high quality development of local infrastructure within the individual countries as well as the interconnection between these countries. If CENTROPE is to develop into a region with intensive economic integration, then some infrastructure bottlenecks need to be eliminated. This shortcoming particularly hinders the division of labour within CENTROPE. Furthermore, the interconnection within the framework of the larger European transportation network is in need of improvement. In that way, opportunities arising from a favourable geographical location would multiply.

With respect to the endowment in human resources, Central Europe does not have the best preconditions. That has caused a deficit in one of the most important competitive factors at this time. With respect to participation in the educational system, the problem is in the higher qualifying levels, not the lower levels. With regard to the participation at the university (tertiary) educational level, every one of the four Central European countries shows clear deficiencies with respect to the rest of Europe. The portion of the working age population with a tertiary education is 14.1% in Central Europe and 21.8% in the EU-25. The difference is even greater with respect to scientific-technical education: Hungary, the Czech Republic and Austria are in bottom place among the members of the European Union. The amount of student exchange is also relatively small within CENTROPE. A second problem area is continuing education. None of the Central European countries reaches the level of the European average with respect to “lifelong learning.”

Not unrelated to this situation in human capital is the position in the area of research. Central Europe does not play a leading role in the area of either innovation or research and development in Europe. The new EU Member States of Central Europe have not yet progressed so far in transition to enable, aside from the multinational companies, small and middle-sized businesses to increase their competitiveness through product and process innovation. Not only is the innovator rate clearly lower than in the EU average, but also nearly all the important indicators in an innovation system are lower. An innovation index calculated by Eurostat shows that all three of the new Member States in Central Europe (values between 0.24 and 0.27) fall clearly below the European average (EU-25 0.41). Austria approximately reflects the European average. With respect to the innovation index Austria (0.39) is slightly lower, with respect to the innovator rate (35.5% of the businesses have introduced innovation) slightly above (EU-25 31.7%). In Austria the deficiency tends to be in the area of research and development, even though expenditure in research and development is somewhat above the European average. One problem can be found in the numerous small and medium sized firms that take part in innovation activities, but do not contribute to research and development. An important goal for structural policy in all four countries of Central Europe is to increase the intensity of research and development, despite different technological policy challenges.

In the following, the perspective of the analysis will be narrowed down to the CENTROPE region itself. With respect to the regional dimension of the location factors, the most important question is if the CENTROPE region is a homogeneously structured and functionally closely integrated region.

#### **4. CENTROPE is Not a Homogenous Structural Region with Specific Characteristics**

CENTROPE is not a region with a unified structure. It is not a “structural region” with characteristics that cause it to be clearly differentiated from the region around it in Central Europe. So, for example, there is no significantly higher level of prosperity nor is there greater educational and research intensity than in the other NUTS 2 regions of Central Europe. Furthermore, there are no significant differences, with regard to the structure of the sectors and branches or in the labour market, between both the comparable regions in Central Europe. Only the employment rate (especially due to higher female employment) in the CENTROPE region is higher, and one might even be able to speak of a higher level of productivity. For most of the indicators the mean of the CENTROPE region differs clearly from that of the rest of the regions of Central Europe. However, the differences are not significant because the variation within CENTROPE is relatively high. Therefore, the CENTROPE region not only is not a specific region

in Central Europe, it is also not a homogenous region; it is in fact a diversified region with large inner-regional differences.

The variety is also a result of the “division” of the CENTROPE region. Roughly speaking, CENTROPE is “divided” into an Austrian regional portion and a new EU Member States regional portion. There is a kind of economic “fault line” with significant differences, in which the Austrian regional portion tends to have more favourable structural characteristics (with the exception of the educational system). The importance of the secondary sectors is lower and that of market services higher. Also, the Austrian regional portion shows a higher level of research and development intensity. The “division” is a result of differences in economic history in the last decades. Also, as a result of the transition, the regional structures in the new Member States have become more diversified and regional differences have been reinforced. However, the “economic” border has not always stopped at the national border. In the new Member States there are also regions with relatively high prosperity, high wages and high employment rates. This occurs mostly in the regions in and around the capital cities, which also have higher levels of research and development. On the other hand, in the Austrian portion of CENTROPE there are also regions with higher unemployment rates (e.g., Vienna) or lower wealth indicators (e.g., Burgenland). Only with respect to productivity is the economic border clearly also a national border.

As a whole, CENTROPE is also not a region that has higher economic growth than the Central European area adjacent to it. The average yearly growth of GDP (at PPP) was 5.2% in CENTROPE between 1995 and 1999 and 5.1% in the other regions of Central Europe. The new EU portion of the CENTROPE regions did not grow significantly faster than the Austrian portion. In fact, there was a yearly difference in growth of 1.3 percentage points but that was not enough to cause any significant differences. For that, economic growth in Northern Bohemia, Moravia, and partly Eastern Hungary was much too moderate. In contrast to that, there is a more or less continuous zone of high growth consisting of Slovakia, West and Central Hungary, as well as Central Bohemia. As a result of the different dynamics between the various parts of the regions of the new Member States of the EU there is no catching-up process within CENTROPE or Central Europe. It could not be shown that the least developed regions of Central Europe (or for that matter CENTROPE) have achieved the highest growth rate in the medium term. Though the correlation coefficient was negative (e.g.,  $-0.468$  for the eight regions of CENTROPE), it was not significant (probability of error 0.242).

CENTROPE is neither a homogenous structural region, nor a “functional region” that is held together by close economic relationships.

## 5. Is CENTROPE a “Functional” Unit in the Economic Sense?

The economic relationships can be analysed by using the descriptive methods of spatial statistics and econometrics<sup>4</sup>. Calculating the spatial autocorrelation statistics makes the analysis of the economic relationships among the individual regions possible without having to work with the (sparsely available) business statistics on the micro level. In the present study, the measure of productivity and economic well-being (in level and change), the unemployment rate and the market potential of the CENTROPE regions were examined.

Calculations of the market potential<sup>5</sup> of the NUTS 2 regions of the EU-25 showed that the core of Europe<sup>6</sup> could be found in the regions of Germany, the Netherlands, England, France and Italy. The development of clusters of level variables is not uncommon. Patterns in growth rate are often interpreted as spillover effects. (i.e., the reciprocal influence of the growth of the regions to one another) Calculations of the Local Moran’s I coefficient for the average yearly growth rate of the GDP<sup>7</sup> show that CENTROPE is in an intermediate zone, surrounded by two different growth clusters. The dynamic regions of the new Member States demonstrate a high rate of growth, while in the high purchasing power areas of the West lower rates dominate. This leads to this intermediate zone of statistical insignificance, in which CENTROPE falls.

The analysis of the level of economic well-being (2002)<sup>8</sup> for CENTROPE shows that Bratislava, Lower Austria and Vienna stand out as “islands of prosperity.” They are characterised by a relatively high GDP at PPP, whereas the neighbouring regions show a low level. Burgenland, West Transdanubia and South Moravia<sup>9</sup> are characterised by a low level of prosperity in their own region as well as in the neighbouring regions (“low-low”). The analysis by means of spatial

<sup>4</sup> Principally, the local Moran’s I coefficient was used, which is calculated as follows:

$$I_i = \frac{(x_i - \bar{x})}{\frac{1}{n} \sum_{k=1}^n (x_k - \bar{x})^2} \sum_{j=1}^n w_{ij} (x_j - \bar{x}) \quad \text{where “n” is the number of observations, “x”}$$

the researched variable,  $\bar{x}$  the arithmetic means of these variables and  $w_{ij}$  are elements as a function of distance of a matrix that represents weighted values.

<sup>5</sup> The market potential was calculated by multiplying the distance matrix by a vector of the regional nominal GDP. Consequently, for each region the individual GDP (nominal) + a (distance) weighted average of the adjacent regions is obtained.

<sup>6</sup> According to economic theory (New Economic Geography) the so-called core regions are characterised by a strong concentration of suppliers and consumers in the respective industrial branches.

<sup>7</sup> At purchasing power parity (PPP), over the period 1995-2005.

<sup>8</sup> Gross domestic product at PPP.

<sup>9</sup> The calculated value for South Bohemia was, at the 10% level, statistically not significant.



autocorrelation statistics confirms that only productivity<sup>10</sup> and, to a lesser extent, wages stay within national borders. It follows that the Austrian portion of CENTROPE has a high level of productivity, while Bratislava, South Bohemia, South Moravia, West Transdanubia, and West Slovakia can be found in a spatially concentrated “low-low” area. The dispersion of regional unemployment also indicates that it is a regional rather than a national pattern. Within the region of CENTROPE, West Slovakia<sup>11</sup> has a very high unemployment rate (2003). South Moravia and South Bohemia, on the other hand, are regions of low unemployment surrounded by neighbouring regions of high unemployment. The values for the rest of the CENTROPE regions were not statistically significant.

The economic structure of the CENTROPE region is in fact very heterogeneous. One cannot speak of an economically integrated area; at the same time, national effects – and therewith the differences in economic history – are only evident for two variables (productivity, wages).

The lack of economic relationships is no surprise if one realizes that proximity does not always have to lead to intensive integration, especially when parts of the region were isolated from each other for a long period of time. Even, for example, in Austria there is no close interchange between some federal states. The integrated eastern region is more of an exception than the rule.

## **6. CENTROPE is an “Intermediary Region” with Economies of Scale and Transaction Cost Advantages**

For strategic considerations concerning the economic development of CENTROPE, it is of some importance whether CENTROPE is really positioned in the middle of Europe, as the name suggests. This is related to the question of which geographical location advantages CENTROPE has. From a geographical point of view, CENTROPE does not lie in the middle of Europe, if a Europe is assumed that reaches from the Atlantic to the Urals. In that case, the geographical centre would be somewhere in the Baltic States. From a regional economics point of view, CENTROPE is also not in the centre of Europe. The “core region” of Europe with the highest prosperity (partly connected to the highest market potential) is situated clearly to the west. As already mentioned it stretches approximately from London over Paris, Belgium, the Netherlands and the German Rhineland to Northern Italy. That does not yet mean that CENTROPE is on the periphery of Europe. The peripheral regions of Europe are further east, north and south.

It seems most fitting to view the regional economic position of CENTROPE as an “intermediary region” between the core and the periphery of Europe. This description should emphasize that CENTROPE is in the intersection of Western

<sup>10</sup> Gross value added per employee.

<sup>11</sup> The Local Moran’s *I* coefficient for Bratislava was, at the 10% level, statistically not significant.

and Eastern market areas, from where both Western as well as Eastern markets are relatively easy to reach and access. CENTROPE would have a location disadvantage for products that were only sold in markets in the West, and it would also have a location disadvantage for products that were sold only in markets in the East. It does, however, have a location advantage for products or components that are in demand in the Western markets with their sophisticated preferences and high levels of purchasing power, as well as in the dynamic Eastern markets. This advantage of location can lead to rising internal economies of scale or to lower transaction costs.

The internal economies of scale would above all be relevant in branches of trade that have products in markets with dynamic demand and that are produced with an intensive division of labour. Then, the division of labour would be organized so that the human capital intensive components would be produced predominantly in the West and the labour intensive components predominantly in the East. The products would also be assembled in the eastern part of Central Europe. The markets for the products would be both in Western Europe, where there is strong demand as well as in eastern Central Europe where, as a result of the economic process of catching-up, there is a backlog of demand. Prototypical for this advantage in location and scale is the modern consumer goods industry (particularly the automobile and electronics industry). Both industries have developed very strongly in CENTROPE in the last 10 to 15 years, mostly as a result of foreign direct investment in the new EU Member States of Central Europe. Already, a remarkable concentration of the automobile industry has developed in West Slovakia and West Hungary (automotive cluster). This locational advantage seems to be relatively permanent, even if the big investment push could soon level out. Possibly, there will be hardly any more investment in major factories that become key factors for regional economies. Still, there could be a consolidation of the location advantage, in which forward and backward linkages increase sharply. Production networks could develop that might lead to CENTROPE becoming more strongly integrated at the production level and develop into a functional region.

The locational advantage for transaction costs can, in principle, benefit the service sector. It is particularly significant with respect to the “headquarter” function. In that case CENTROPE would provide an advantageous site for regional headquarters, because from here the markets of Central and East Europe are relatively easily accessed and the European headquarters are easily reached. This advantage has been particularly well used by Vienna, where many regional headquarters have been established, partly by upgrading former Austrian branch offices. In this way Vienna has redefined its “bridgehead” role after the Cold War and has become a kind of transaction centre for Central Europe. This advantage seems to be only temporary, as a “window of opportunity” that after some time will become narrower. The more intensively the neighbouring markets are penetrated,

the more advantageous it will be to set up national headquarters in these markets in order to save transaction costs. This development has already begun and will probably continue to Vienna's disadvantage.

The locational advantage of CENTROPE has probably just about been exhausted; large investment and take-offs in development are therefore no longer to be expected. Rather than a boom phase, a phase of consolidation and intensive internal integration is more likely to take over. In this regard, it should be kept in mind that CENTROPE is a diversified region in which regionally specific, border-crossing strategies are promising.

## **7. Diversification of CENTROPE in Accordance to its Regional Variety**

CENTROPE has a variety of regions that are suitable to different types of specializations. Due to this variety, the region can work with a wide range of products. Diversification is possible, which will reduce the risk of short and long-term setbacks as well as increase the attractiveness of the location for investors in real and human capital. CENTROPE has a great deal of potential for investors of various backgrounds.

The types of regions can show the regional variety of CENTROPE. Taking as a group-building criteria the level of the tertiary sector (or of industrialization) and the intensity of research and development, then one obtains types of regions that reflect different levels of prosperity.

At the bottom end of the scale of wealth are those regions in which industry is still of relatively high importance. Among these, South Moravia (with Brno) shows a relatively high intensity of research and development and a somewhat higher level of prosperity than the other industrialized regions. Also, South Bohemia, West Slovakia and West Transdanubia belong in this category. The industrialized regions are confronted by the need to intensify production networks in order to consolidate advantages of location and scale. These advantages tend to be strengthened by further expansion in the Eastern markets. With the Ukraine and Russia on the one side and Turkey and the Balkans on the other, large markets of the future can be reached from CENTROPE, as long as they are not serviced by their own local plants and offices, which is to be expected in larger countries. With respect to the networks, cooperating partners in the West are not confined to be to the Austrian region of CENTROPE. Basically, all the industrial regions can be considered (with an emphasis in Austria, Southern Germany and Northern Italy).

*Chart 2: GDP per Capita in the Sub-Regions of CENTROPE (EU-25=100)*

Source: Eurostat, Austrian Institute of Economic Research calculations.

A higher level of economic well-being can be seen in those regions that have a relatively important tertiary sector. These are the two Austrian regions of Lower Austria and Burgenland, though in Lower Austria the intensity of research and development as well as the level of economic well-being is higher.

For service businesses there are various possibilities for improving competitiveness. A lot of investment in the new EU member countries has already been made “on location,” since this is the best way to enter regional markets. In this way, structural change has been promoted in the fields of trade and financial services in the new EU Member States. The full potential of the services markets with small market radii has not yet been tapped because providing services across borders has not yet been completely liberalised. This will eventually increase the pressure of competition in the “local” markets. The companies that will succeed are those that have used the opportunities offered by cross-border markets.

The competitive conditions in tourism are basically different, because an emphasis can be placed more heavily on opportunities arising from cooperation. Through cross-border cooperation the attractiveness of the destinations can be increased by expanding the potential of resources that are useful for tourism. In the process it must be discerned if the resources are top quality and unique or more or less ubiquitous. In the case of top quality resources (lakes, thermal springs,

particularly charming and unique landscape conservation areas) the offerings should be so much improved that it is interesting for a broadly dispersed international demand both in Europe and partly also overseas. More or less ubiquitous resources can be found in many rural areas that are suitable for internal consumption. Through cross-border cooperation these can be developed into delightful attractions for the leisure economy (in combination with the food and energy industries) with a market area extending across borders to all of Central Europe.

The highest level of wealth, above the EU average, can be found in both of the research and development intensive urban areas, whereas there is a difference between the Viennese metropolis and the agglomeration Bratislava. Vienna clearly surpasses Bratislava in research and development as well as in regional prosperity. Both regions (particularly Vienna) are important locations for business-related services, which have received demand impulses as a result of the transition of the new EU Member States of Central Europe. The greatest challenge is on the supply side, as the large cities are invigorated by internationally competitive research and development. They need to have attractive educational and research infrastructures at their disposal in order to be able to recruit talented and highly qualified human capital internationally. The high quality of life that undoubtedly exists in CENTROPE is a good, but not sufficient prerequisite. There should also be specialised research networks that are soundly anchored in CENTROPE. Cooperation within CENTROPE will allow human resources to expand, which only then will allow the necessary minimum size to be reached. In doing so, cooperation should not be limited to Vienna and Bratislava; in order to increase the chances of success also Brno and both capital cities, Prague and Budapest, should be included in the network.

## References

- Cambridge Econometrics, A Study on the Factors of Regional Competitiveness. A Final Report for the European Commission, Cambridge-Rotterdam, 2003.
- Europäische Kommission, European Innovation Scoreboard: Technical Paper No.2, European Trend Chart on Innovation, Brussels, 2004.
- Feldkircher, M., Regional Convergence in the EU 25. A Spatial Econometric Analysis, Not Published Diploma Thesis at the University of Vienna, Vienna, 2005.
- Hunya, G., Geishecker, I., Employment Effects of Foreign Direct Investment in Central and Eastern Europe, WIWW Research Reports, 321, Vienna, 2005.
- Landesmann, M., Römisch, R., Regional Developments in the New Member and Candidate Countries of the European Union, in: Eriksson, J., Karlson, B.O., Tarschys, D., (Eds.), From Policy Takers to Policy Makers. Adapting EU Cohesion Policy to the Needs of the New Member States, Stockholm, 2005, p. 66.

- Mayerhofer, P., Palme, G. (Coordinators), PREPARITY – Strukturpolitik und Raumplanung in den Regionen an der mitteleuropäischen Außengrenze zur Vorbereitung auf die EU-Osterweiterung, Opinion of the Austrian Institute of Economic Research, 15 Volumes, Vienna-Dresden-Trieste, 2001.
- Oesterreichische Nationalbank, Focus on European Economic Integration, Eurosystem 1/05, Vienna, 2005.
- Wolfmayr, Y., Österreichs Außenhandel mit den EU-Mitgliedsländern, WIFO-Monatsberichte, 2004, 77(4), S. 231–250.