A sound promotion of innovation is essential for the future of the Baltic Sea Region, in particular to support the small- and medium sized enterprises. For this purposes stakeholders from medium-sized businesses, science, politics, and administration met at the seventh Hanseatic Conference in May 2012 in Hamburg. For two days the participants discussed about “Innovation and innovative strategies in the regional policy around the mare balticum” to further strengthen the region. It became evident, that a sustainable promotion of innovation not only demands a closer cooperation within the regions and on a transnational level, but also between administrations and especially between companies and R&D institutions. The Baltic Sea area will only be one of the most innovative and strong regions in the world, if the bordering countries build a unit. This publication includes the presented papers and summarizes the discussion of the participants.

The included texts are printed in German or English language.

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Regional Development in the Baltic Sea Region: Current Economic Trends and Perspectives

Ulrike Biermann, Silvia Stiller

Introduction

Within the past decades, intensive integration processes between member states of the European Union could be witnessed. But also on the regional level, outstanding integration results were denoted. Examples for these kind of processes which occur as an effect of spatial proximity between regions can be found around the shores of the Mediterranean Sea, which connects not only regions of different countries but also of different continents, as well as in the course of the Danube river ranging from south-western Germany as far as the Black Sea.

The regional integration phenomenon in the focal point of the following article is the Baltic Sea Region. Within the framework of this article it is defined as depicted in figure 1: the Mare Balticum with its bordering countries Denmark, Estonia, Finland, Latvia, Lithuania, Sweden as well as regions of Germany (Schleswig-Holstein, Mecklenburg-Vorpommern and Hamburg), Poland (zachodnio pomorskie, pomorskie, warmińsko-mazurskie, podlaskie) and Russia (Kaliningradskaya oblast, Leningradskaya oblast, St. Petersburg).

With the exception of Russia, all bordering countries are members of the European Union. In these countries, we find 147 million inhabitants which account for 29.3% of total European Union population and which are responsible for 30.3% of the gross domestic product. Looking exclusively at the Baltic Sea Region (i.e. only including those regions of Germany and Poland bordering the Baltic Sea), its European Union parts produce about 8.4% of the gross domestic product of the 27 European Union member states (cf. Eurostat 2012, data reference 2009) and a corresponding population of 8.0% of the EU population (cf. Eurostat 2012). These figures specify the Baltic Sea Region as a significant social and economic habitat with extensive integration potentials along its national borders.

Of notable relevance for its future development prospects is the instance that the Baltic Sea Region is marked by substantial structural and developmental differences between its countries and regions. Despite their common history, values and beliefs, there are significant cultural, political and economic differences both between and within the member states. On the one hand, we find post-transformation countries like the Baltic States which are still experiencing
catching-up processes. On the other hand, we have a number of Europe’s strongest economies and leading innovation regions in the north-western part of the Baltic Sea Region.

Figure 1. The Baltic Sea Region

Additionally important for the future development of the Baltic Sea Region is the founded prognosis that several factors influencing its socio-economic development will experience considerable changes during the upcoming years. The framework of its socio-economic development will change due to continuing integration and convergence processes, the structural change towards a service and knowledge based industry, intensified trade, labour market networking and an overall demographic change. These factors bring about a number of challenges but may also be used as unique opportunities for developing the Baltic Sea Region.

In the following article, the macroeconomic and regional development until 2010 as selected aspects of the socio-economic development of the Baltic Sea Region will be highlighted and
explained in order to gain insights into on-going economic trends and future perspectives. A special focus will be set on the importance of cities within regional development.

Due to the critical comparability and limited access to data on the Russian Federation, the statistical analysis will in some parts be restricted to European Union members.

**Macroeconomic conditions**

In the course of the past two decades, the Baltic Sea Region was subject to far-ranging changes. The decline of the Soviet Union and the obtaining of European Union membership for a number of its former states in 2004, were key events for a dynamic development and rapprochement within the Baltic Sea Region. Convergence processes, resulting in the catching up of lower income countries, play an important role within the Baltic Sea Region (cf. Niebuhr/Schlitte 2008).

<table>
<thead>
<tr>
<th></th>
<th>GDP (EUR mill)</th>
<th>GDP Growth (%)</th>
<th>Exports (EUR) Growth (%)</th>
<th>Imports (EUR) Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU27</td>
<td>10,295,236.0</td>
<td>13.9</td>
<td>59.5</td>
<td>58.8</td>
</tr>
<tr>
<td>Denmark</td>
<td>196,202.8</td>
<td>6.1</td>
<td>51.8</td>
<td>59.1</td>
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<tr>
<td>Germany</td>
<td>2,191,923.8</td>
<td>11.3</td>
<td>76.3</td>
<td>67.9</td>
</tr>
<tr>
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<td>8,411.7</td>
<td>43.0</td>
<td>166.1</td>
<td>144.5</td>
</tr>
<tr>
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<td>20.1</td>
<td>29.5</td>
<td>69.5</td>
</tr>
<tr>
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<td>206.7</td>
<td>165.0</td>
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<td>Lithuania</td>
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<td>253.6</td>
<td>224.0</td>
</tr>
<tr>
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<td>51.1</td>
<td>188.5</td>
<td>160.2</td>
</tr>
<tr>
<td>Sweden</td>
<td>264,558.9</td>
<td>26.5</td>
<td>64.7</td>
<td>68.5</td>
</tr>
</tbody>
</table>

Table 1. Development of GDP and Trade 2001-2011

Table 1 exhibits an overview of the development of the gross domestic product at market prices and of growth in exports and imports. It becomes apparent that the largest growth rates emerged in the Baltic States and Poland. With an increase in trade of more than 100% and in

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1 GDP at market prices, chain linked volumes, reference year 2005.

Sources: Eurostat 2012; OECD 2012; HWWI.
A large gap can be found between western (Denmark, Sweden, Germany, Finland) and eastern (Poland and the Baltic States) countries around the Baltic Sea. Between the fourth and fifth ranked countries — Finland and Estonia — a gap of 12,500 purchasing power standards is denoted.

2 Sources: Eurostat 2012; HWWI.
Nevertheless, catching-up processes of the lower income Baltic Sea neighbours are obvious: While an increase from 2000 to 2010 can be determined for all examined countries, the percentage change is largest for Latvia (86.7%), Estonia (82.6%), Lithuania (81.2%) and Poland (66.3%). The older members of the European Union, which have a generally higher gross domestic product than its newer additions, faced minor increases. Russia as yet another former SU-country faced outstanding increases in gross domestic product per capita in the course of convergence processes, too: According to OECD data, it experienced an increase of 191.73% from 6,789.4 bn USD in 2000 to 19,833 USD bn in 2010 (cf. OECD 2012).

Looking at gross domestic product forecasts (cf. figure 3), a similar segmentation as in the past decade evolves. This indicates that the catching-up process of eastern countries is still

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3 Sources: Oxford Economics 2012; HWWI.
prevailing and proceeding in the future. Convergence processes are still decisive factors for the economic development in the Baltic Sea Region. The forecasted growth rates which rely on a model by Oxford Economics account for more than 40% in Estonia, Latvia, Lithuania and Poland and for approximately 20 to 25% in Denmark, Germany, Finland and Sweden.

It can be stated that despite the partially decelerating convergence processes, the heterogeneous development between eastern and western countries around the Baltic Sea is and will still be effective in the near future.

The development of the gross domestic product has a deep impact on trade perspectives. Traditionally, trade plays an important role within the Baltic Sea Region. Regions with access to the Baltic Sea have since medieval times enjoyed the opportunity of intensive trade relationships and the supply of international goods. For the economic development of a region or city, its location along the coast or at a river was therefore crucial. Even nowadays, spatial proximity and the quality of the provided infrastructure determine transportation time and costs, which are decisive factors for the competitiveness as a trading location (cf. Niebuhr/Stiller 2004).

The relevance of countries bordering the Baltic Sea for European Union trade can be expressed by their share in European Union trade of 35% as regards worldwide export of goods and services and 30% as regards worldwide import of goods and services. Their importance within intra-European Union trade is similarly high: they account for 32.8% of intra-European Union export and for 31.8% of intra-European Union import (cf. Eurostat 2012).

The further enhancement of trade development depends on an on-going reduction of border obstacles to increase the integration within the Baltic Sea Region but also within the European Union and the world economy, as several surveys, e.g. by Nitsch (2000), could show.

Figure 4 illustrates forecasted growth in export volume for the European Union. Here, two countries of the Baltic Sea Region (Poland with 82% and Lithuania with 76%) have higher forecasts than the European Union on average. The remaining Baltic Sea neighbours exhibit growth rates of 44-60%.
However, while there is a rapid process of convergence on the national level, the regional level exhibits heterogeneous dynamics. The following map (figure 5) illustrates growth in gross domestic product on the regional level. A clear gap between eastern and north-western regions around the Baltic Sea can be determined. Whereas western German, Danish, Swedish and most Finish regions exhibited increases of less than 50%, almost all regions in Poland and the Baltic States denoted rates of 50 up to 120% growth.

Figure 4. Growth in export volume 2010-2020

Regional Development

4 Sources: Oxford Economics 2012; HWWI.
As a former GDR region, the region of Mecklenburg-Vorpommern recorded higher growth rates than western German regions due to convergence processes after 1990. Rural areas in northern Sweden and Finland denoted catching-up processes with higher income regions, too. Being the only western region which denoted growth rates exceeding 65%, the region Itä-Uusimaa near the Finish capital Helsinki (+76%) is likely to have enjoyed economic growth via new trading relationships with former SU-countries.

![Figure 5. Regional growth in GDP 1999-2009](image)

5 Sources: Oxford Economics 2012; HWWI.
The Role of Cities

In many cases, the population development on the national and regional level differs distinctly. At large, spatial development in Europe is marked by extensive urbanisation processes. While in 1950 only 51.2% of Europeans lived in cities, the percentage amounted to 72.6 in 2010. In 2050, up to 83.8% of the European population might live in a city (cf. United Nations 2012).

Figure 6: Population density

In the cities of the Baltic Sea Region, migration aspects are far less drastic than for the national populations in general. Cities as economic centres attract international migrants as well as

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6 Sources: Oxford Economics 2012; HWWI.
the local population and exhibit different developments than national populations. In large parts of the Baltic Sea Region, population as well as production is concentrated in the larger cities and their surrounding regions, as figure 6 and 7 illustrate. A polarisation of population development and, as a result, also of economic activity is implicated. As a consequence, urban centres play a major role within the national economies.

Figure 7. Regional share in GDP

Figure 8 depicts changes in regional urban and national population during the past four years. Many big cities in the Baltic Sea Region grew faster than their countries. Striking examples are Gdansk, which has one of the highest increases in population while Poland in total denoted only minor increases, Copenhagen, which grew more than twice as much as Denmark, as well

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7 Sources: Oxford Economics 2012; HWWI.
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as many German cities and Tallinn whose populations increased while their countries’ population accounts showed negative developments.

Figure 8. Population growth 2007-2011 and population forecast

In smaller cities – especially in the eastern countries – one can spot a different development: in Latvia, the population of urban areas is declining at an even greater extent than on the

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3 NUTS-2 level; Germany: NUTS-3 level; Finland: City; Kiel and Lübeck: 2008 to 2025

Figure 8. Population growth 2007-2011 and population forecast

In smaller cities – especially in the eastern countries – one can spot a different development: in Latvia, the population of urban areas is declining at an even greater extent than on the

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8 Sources: Eurostat 2012; Statistical offices of BSR states; calculations HWWI.
national level. The Lithuanian capital Vilnius on the other hand denotes a far less drastic decline in population than Lithuania on average. Excluding Latvia as an extreme example of population decline, a clear movement towards the big cities in the Baltic Sea Region can be determined.

For the cities, data referring to NUTS-3 level was used which was compared to data of NUTS-2 levels. Exceptions: Hamburg was compared Northern Germany excluding Hamburg, Bremen, Mecklenburg-Vorpommern, Lübeck and Schleswig-Holstein. Swedish cities were compared to NUTS-1 levels.

**Figure 9. Proportion of cities’ GDP and population compared to the superior Region**

Many cities account for a large proportion of their regions’ economic strength and population (cf. figure 9). Successful cities have a major importance for their region and hold key functions as regards the economic development of the Baltic Sea Region. Stockholm, Helsinki and Aarhus house more than 50% of their regions’ populations and produce more than half of their gross domestic products. Tallinn and Riga, which are compared to national levels, i.e. Estonia and Latvia, describe their role as economic centres by accounting for more than 50% of the gross domestic product while exhibiting 30, respectively 40% of the national population.

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9 Sources: Oxford Economics 2012; calculations HWWI.
Figure 10. Share of employment in knowledge intensive industries 2008\textsuperscript{10}

Lithuania appears to be less concentrated on its capital, as Vilnius accounts for less than 40% of the gross domestic product and slightly over 25% of the national population. For the Po-

\textsuperscript{10} Sources: Oxford Economics 2012; calculations HWWI.
lish voivodships, their major cities play an important economic role. Especially the economic centre Tricity, containing Gdansk, Gdynia and Sopot, which accounts for almost 50% of Pomerania’s gross domestic product and for more than 30% of its population holds a striking position. Of the German cities, Hamburg which was compared to the whole of Northern Germany (Mecklenburg-Vorpommern, Schleswig-Holstein, Niedersachsen, Bremen, Hamburg) contributes a major part to economic production of this region (20%).

Looking at the share of employment in knowledge intensive industries on NUTS2-level (cf. figure 10), the importance of cities within knowledge intensive industries becomes visible. Among the Baltic Sea regions exhibiting the highest shares of employment in knowledge intensive industries, we find Stockholm and its surrounding region Östra Mellansverige, the Copenhagen region (Hovedstaden), Hamburg, the Malmö region (Sydsverige) and the Helsinki region (Etelä-Suomi). Among the Polish regions, Pomorskie with Tricity Gdansk-Gdynia-Sopot is ranked highest.

Also with regards to future perspectives for knowledge intensive jobs, large regional disparities can be found. The Regional Innovation Scoreboard (RIS) (cf. figure 11) assesses the innovative power of EU regions on NUTS2-level (exception: Denmark on NUTS1-level). Looking at regional differences, Hamburg is marked as having a high innovative strength in contrast to its medium high innovative surroundings. The same holds for the regions of the larger Swedish cities in contrast to the rural north of the country and for Pomorskie as a medium-low innovative region with the cities Gdansk and Gdynia in contrast to the remaining Polish regions at the Baltic coast which are marked as low innovators.

While the gap between the eastern and western states of the Baltic Sea Region as regards innovation is still very broad, it is expected to decline in the future due to convergence processes and expanded R&D capacities. Here, spatial proximity plays an important role (cf. Deardorff 1998). Poland, Russia and the Baltic States will benefit from exchange with already knowledge-based economies like Sweden and Finland. Hence, the reduction of border obstacles and the promotion of mobility between these countries are supported by another just cause.

For the innovativeness of the Baltic Sea Region and the development of its less innovative regions, another driving phenomenon can be named: cross-border clustering plays a major role in knowledge-based growth. It largely depends on spatial proximity, networking and face-to-face contacts. Good examples for cross-border clusters in the Baltic Sea Region are the health sector and the creative industry. As great innovation potentials and triggers, environmental technology and energy supply can be named, too (cf. Stiller/Wedemeier 2011).
Urban development interdependes with the knowledge-based structural change. The workplaces of the knowledge-intensive industries of the future are located in cities (cf. Blech at al. 2008). Here, universities and research institutions can be found as well as headquarters of major companies. This indicates knowledge exchange and mutual innovation promotion. Due to their locational advantages for the industries of the future, the importance of cities as the driving forces of employment, regional growth and innovation will increase.

Sources: Regional Innovation Scoreboard 2009; HWWI.
Conclusion

Forecasting models predict that the gross domestic product in the Baltic Sea Region will rise significantly until 2020. It can be stated that the catching-up process of its eastern states will continue in the future. Continuing convergence processes will lead to an increased assimilation of income levels in eastern and western countries. However, due to large disparities in regional structures in the Baltic Sea Region, the impacts of convergence processes will assume different shapes on the regional level. Primarily larger cities and capitals will enjoy and prosper in the course of the positive development but will also be its main contributors.

As regards the perspectives for trade and the development of cities, the findings of this survey describe a positive outlook. Nevertheless, crucial aspects and fields of action for spatial planning policies can be named: In order to improve international accessibility to all regions of the Baltic Sea Region and hence to utilise market potentials, the development of sufficient infrastructure and logistical solutions is necessary.

As a result of the analysis of the role of cities around the Baltic Sea, special attention should be paid to cities as engines of regional development – also in the course of the structural change towards knowledge-based industries.

Crucial aspects for the development of cities are whether or not they will be able to cope and counter steer international migration. Sufficient supply of housing and successful integration of foreign workforces are central challenges. Soft factors, such as fostering the attractiveness of cities by an increase in quality of life are additionally important when meeting challenges and opportunities of migration. Nevertheless, the danger of ignoring rural areas has to be kept in mind. The emphasis on the importance of cities as economic drivers cannot go along with a degradation of less populated regions whose inhabitants might have to endure cut backs in quality of life and income level.

Another major task for the Baltic Sea Region is to smooth potential negative consequences of demographic change. Measures to reduce the threatening shortage in labour force, especially in the Baltic States and Poland are in high demand. The mobilisation of less frequent workforces, such as elderly people and women is a central task for political decision makers and companies. Additionally, the improvement of the educational level of these groups, migrants and the existing labour force will be of aid against demographical deductions. The cross-border recognition of educational attainments is another factor to foster cross-border labour market integration.
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Ulrike Biermann, Silvia Stiller

About the authors

Dr. Silvia Stiller

Silvia Stiller is research director and head of the research area “Regional Economics and Urban Development” at the Hamburg Institute of International Economics (HWWI). Her Ph.D. thesis at the Technical University of Dresden dealt with the economic impact of demographic change. Since 1998 she has been engaged in economic research in Hamburg. Before joining the HWWI she was head of the research department European Integration and Regional Development at the Hamburgisches Welt-Wirtschafts-Archiv (HWWA). Silvia Stiller is a member of the Academy for Spatial Research and Planning (ARL).

Ulrike Biermann

Ms Ulrike Biermann is a student of “Baltic Management Studies” at the Fachhochschule Stralsund (University of Applied Sciences) since 2010. From February until July 2012 she worked as a research assistant at the Hamburg Institute of International Economics (HWWI) with Dr. Silvia Stiller in the research area “Regional Economics and Urban Development” and is engaged with research on the economic development of the Baltic Sea Region and European trade.