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The future of the Baltic Sea region: Potentials and challenges

Silvia Stiller, Jan Wedemeier

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Silvia Stiller, Jan Wedemeier
with the assistance of Julia Faltermeier, Björn Felkers and Julia Nerenberg

Study by HWWI commissioned by the Hamburg Chamber of Commerce and the European Movement Germany with the kind support of the Federal Foreign Office

Hamburg Institute of International Economics (HWWI) | 2011

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Foreword from Berlin

The Baltic region has the potential of becoming one of the most flourishing, innovative and competitive regions on our entire continent. Cooperation within the Council of the Baltic Sea States (CBSS), founded in 1992 on a joint initiative between Germany and Denmark, will play a key role in making this happen. At the beginning it saw its primary task in helping to overcome the gap between east and west after the Wall came down; today the CBSS promotes very actively and effectively economic, political, cultural and environmental cooperation between the neighbouring nations within the Baltic region.

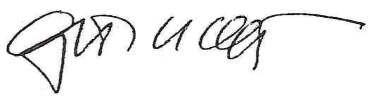
In July 2011, Germany will take over the chair of the CBSS. During our presidency, we wish to emphasise the special role the Baltic Sea region plays in the confluence of Europe. The focus is on the role of the European Union because once Poland, Lithuania, Latvia and Estonia joined the EU in 2004, the Baltic Sea became an interior sea almost entirely within the EU. One important goal is to integrate the CBSS more closely into the EU Strategy for the Baltic Sea Region and its implementation. The strategy aims to help the nearly 100 million people living in the Baltic Sea region to close ranks and to benefit from the improvement of infrastructure, the sustainable protection of the environment and the growing economy. At the same time, the involvement of Russia into the activities of the CBSS should be ensured and further promoted. In concrete terms, the German federal government intends to focus on increasing practical cooperation in the area of maritime and environmental policy.

Today, as in the past, the Baltic Sea region is very significant for German trade. This does not only apply to the federal states on the coast such as Schleswig-Holstein, Mecklenburg-Western Pomerania and Hamburg, which are becoming increasingly more important trading partners for the Baltic Sea States. Germany has an interest in deepening these relationships because our nation, as a European hub, benefits as much from advanced/enhanced transportation and energy networks as it does from the improvement of shipping safety and the fight against international crime.

The study at hand on the macroeconomic significance of the Baltic Sea region in the European Union combines comprehensive data on the socio-economic situation of the region. It successfully demonstrates and analyses how structures are expected to shift according to the regions' transformation towards a service- and knowledge-based society. Furthermore it exposes arising opportunities and potential to economic and political players. Hence, it makes a valuable contribution to the confluence within the Baltic Sea region.

Dr Werner Hoyer
Minister of State
German Federal Foreign Office

Foreword from Brussels



Günther Oettinger
Commissioner for Energy
European Commission

Looking through a European lens, the Baltic Sea has almost completely become an "inland sea" due to the enlargement of 2004. Eight of the nine bordering nations are members of the European Union. In spite of numerous economic, ecological and cultural differences, the Baltic Sea States form a cohesive, "domestic region". This makes regional cooperation especially important here, acting as a role model for other regions of Europe. But there is still more potential to be exploited.

The Baltic Sea has been an area of trade for long. The foundation of the Hanseatic League marked the heyday of trade and urban development in the region. Now that the division of the area has been overcome, the Baltic Sea States have gainthe chance to continue this history of success via close links of trade and economic projects.

With the EU Strategy for the Baltic Sea Region, the European Commission has recognised a first specific regional strategy for supporting this process through an integrated approach. The aim of the strategy is to coordinate and adjust the efforts of diverse players on various levels. The cornerstones of the strategy are higher environmental sustainability, prosperity, attractiveness, accessibility as well as security.

One example is the regional cooperation in the area of energy. In 2008, a high-ranking group of observers from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland and Sweden was initiated and chaired by the European Commission. This group prepared the Baltic Energy Market Interconnection Plan, a comprehensive action plan for connecting energy grids in order to improve the market for electricity and gas. The primary goal is to end the relative isolation of the Baltic Sea States in terms of energy by integrating them into the EU energy market.

With the European Energy Programme for Recovery, the first infrastructure measures could be fostered to improve the infrastructure of the European Energy market for the Baltic Sea States. This includes establishing power lines between Sweden and Lithuania and between Estonia and Finland. It also funded efforts to increase offshore wind energy, such as the project between Denmark, Germany, Poland and Sweden. The communication regarding infrastructure priorities, published in November 2010, stated that the extension of electricity and gas pipes in the Baltic Sea region deserves more attention.

The Baltic Sea region can become a role model for innovation of all kinds: for example, in the area of renewable energies. To make full use of this potential, it will be necessary to exploit synergies and mechanisms for cooperation more purposefully and strategically. The study at hand offers clear and significant alignment in this regard.

Foreword from Berlin

From a German perspective, the Baltic Sea stretches all the way to Lake Constance. This is caused by the significance of Baltic Sea trade which goes well beyond the North German Plain. Baden-Württemberg and Bavaria as federal states are the largest exporters to the Baltic Sea region, with export figures each in the double-digit billions. This study presents validated and illuminating arguments seeing benefits and opportunities of deeper Baltic Sea cooperation from an overall German point of view.

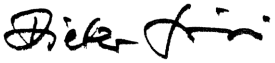
The German federal government has been acting on this maxim for already some time and understands its engagement in Baltic Sea cooperation as more than just beneficial to the neighbouring federal states but rather as an important element for European policy as a whole. This deserves the greatest recognition but arouses enormous expectations (at the same time) for Germany taking the presidency of the Council of the Baltic Sea States in July. I am certain that the German Federal Foreign Office in charge will handle the presidency of the CBSS successfully. The study does an impressive job demonstrating that we will have to work together to find solutions for the great challenges faced within the Baltic Sea area of innovation.

The example of Baltic Sea cooperation clearly shows what cross-border civic involvement can achieve once trade is made an integral element. The Hanseatic League goes back to a network of organised interest groups - first business people and later the cities around the Baltic Sea. Hence civic players are to be seen behind the success stories of the "new German" cluster in terms of knowledge and economy, which are discussed in the study, there are civic players.

We are thankful to the Hamburg Chamber of Commerce for commissioning this study together with our institutional partner Federal Foreign Office and Hamburg Institute of International Economics (HWWI). Looking at Europe's integration through the precise lens of the Baltic Sea, it was extremely worthwhile considering the highly informative and profound findings gained thereby. We also express our gratitude to the supporters representing business, politics and society.

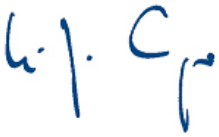
As president of the European Movement Germany (EBD), with more than 200 German civic member organisations which see themselves quite purposefully as a network and therefore form the largest think tank for European policy in Germany, I regard the civic cooperation to be an extraordinary example of transferring ideas to reality. The scientific analyses are supplemented by personal perspectives of experts from the European movements in Finland, Latvia and Germany.

However this study should not close the chapter on this issue. It rather lays the cornerstone of the dense network of partners, companies, institutions and associations recognising the potential and challenges in the Baltic Sea region in order to influence development sustainably. As a co-initiator of this "Baltic Sea network", the European Movement Germany looks forward to discussing the study findings with its partners in Germany and Europe – granting the region a new, powerful momentum for its future.



Dr Dieter Spöri
Former Minister, President of the European Movement Germany (EBD)

Foreword from Hamburg



Dr Karl-Joachim Dreyer
Vice President of the
Hamburg Chamber of Commerce

Ladies and Gentlemen,

Hamburg has been the westernmost port in the Baltic Sea and the southernmost Scandinavian port since back in the day of the Hanseatic League. One thing has not changed since: the many economic interconnections between Hamburg and the rest of the Baltic Sea region. This study takes an in-depth look at these important topics (for Hamburg).

The role of cities as initiators within the Baltic Sea region is examined in one chapter of the study. Hamburg's sister city arrangement with St Petersburg is especially significant in this context. It is not merely the scientific and cultural exchange between the two metropolises which invigorates the Baltic Sea region, but the economic impetus from the close trading band as well. The port of St Petersburg, accessible via the Baltic Sea, is the entryway to the northern markets. Hamburg is an essential hub for this access.

Container handling for the "Baltic Tigers" over the Port of Hamburg grew by 39% in the third quarter of 2010 compared to Q3 2009. Figures could hardly show greater economic momentum in the Baltic Sea region. This contemporary growth will be tested by demographic change, as the study impressively demonstrates. While some of the south Baltic Sea states can expect enormous emigration, some Scandinavian cities anticipate growth of up to 22.5%. Hamburg, as a centre of knowledge, is well connected to all Baltic Sea states and intends to be strongly involved in conquering the upcoming challenges, as the example of this study shows.

The fixed link across the Fehmarn Belt will be a breakthrough for the close exchange between the metropolis of Hamburg and Scandinavian countries and universities. The macro-region is already competing for the finest brains. An excellent transportation infrastructure will lead to shorter pathways between locations. Establishing networks between companies and universities will be eased. In addition to the interconnection between business and science, the five sponsors of the study demonstrate the foresightedness inherent in the Hanseatic business community. I thank the sponsors and institutional supporters of this study, because the newly created network would not have been possible without this work.

Table of contents

Summary		10
1	**Introduction**	12
2	**Trade with the "Mare Balticum"**	14
3	**Demography and labour market integration**	24
4	**The Baltic Sea area of innovation**	31
5	**Cities as initiators for the development of the Baltic Sea region**	38
6	**Literature**	49

Summary

The Baltic Sea states Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden make up a diverse community of states with enormous potential along their interior border to the European Union (EU) and to Russia. The eight EU countries with direct access to the Baltic Sea have a population of around 147 million people, which is a share of 29% of the total EU population. These states produce 29.3% of the EU gross domestic product (GDP), indicating their economic importance to Europe. The study at hand analyses the development possibilities of the Baltic Sea region from various perspectives. It deals with the current situation, the potential and the future challenges. Thereby this study puts its focus on trade in the Baltic Sea area, demographic trends, capacity for innovation and the economic impact of the cities in this area.

The exchange of goods is essential for the cross-border integration of EU states, and the Baltic Sea states are important trading partners. Exports from this region amounted to EUR 725 billion in 2009, which is 33% of the total intra-EU exports. In the same year, the countries with direct access to the Baltic Sea were the destination of 30% of all EU imports, with a total value of EUR 993 billion. The federal states within Germany also have intense trade relationships with the Baltic Sea region. None of them send less than 6% of their total exports to this region and import at least as much back. These trade relationships are expanding rapidly. For example, exports and imports between the federal states in northern Germany and the Baltic Sea states rose significantly between 2002 and 2009. Trade with Mecklenburg-Western Pomerania has more than doubled and the increase for Hamburg was about 40%. For Russia, St Petersburg plays an important role as a Baltic Sea port because it connects the markets in central Russia to the EU.

Dealing with future demographic changes at the societal level will be a major challenge for the countries in the Baltic Sea region. Forward-looking behaviours are important for tackling issues such as a decline in the population overall and of those of employable age, as well as an ageing society and labour force. In the Baltic Sea states (excluding Russia), the labour force was 67 million strong in 2009. This accounts for 30.9% of total employment within the EU. Since 1999, the number of jobs in these countries has increased by 6.1%, which illustrates the trend towards an increasing need for labour in this economic area. Having sufficient availability of labour in future is fundamental to ensuring the ability of the region to continue to perform economically. Common initiatives among the Baltic Sea states to improve cross-border job market integration therefore represent a significant option for handling demographic change and the risk of an insufficient labour force. A few examples are the cross-border recognition of educational and vocational qualifications and the expansion of cross-border transportation infrastructure, such as the fixed link across the Fehmarn Belt. There is additional potential in the better integration of women and seniors into the job market and in sister city arrangements, such as the one between St Petersburg and Hamburg. Additionally, the conditions for job market integration within the EU have been improved by 1 May 2011 by liberalising free movement of labour from Eastern Europe.

One critical prerequisite for the Baltic Sea region being able to compete globally in future is ensuring its technological capability and innovative power. This requires a broad knowledge base and the ability of its inhabitants to adapt to innovation. It should be emphasised in this regard that the number of inhabitants with tertiary degrees in Denmark, Estonia, Finland, Lithuania and Sweden is above the EU average. Between 26% (Lithuania) and 31% (Finland), the level of education is correspondingly high. Another very good approach to tapping into the potential in this knowledge economy is in the already well advanced specialisation on knowledge-intensive services and research-intensive industries in numerous parts of the Baltic Sea region. However, the research and development capacities, the knowledge-intensity of production processes and the innovation in the countries in the eastern part of the Baltic Sea region all show how much catching up they have to do.

The cities in the Baltic Sea region in particular offer good conditions for innovation and the expansion of their knowledge-based economies. The concentration of research facilities, universities and highly qualified labour force in these cities is high, and this is the basis for knowledge-based structural change. Moreover, the regional development processes in the Baltic Sea region are encountering more and more urbanisation. In large parts of the Baltic Sea region, the population and production are concentrated in a few cities. This is particularly true of the Baltic nations, with 25% of the national population living in Vilnius, 31.7% in Riga and 38.9% in Tallinn.

Given the pivotal importance of cities for the socio-economic development in the Baltic Sea region, their sustainability is critical to ensure the competitiveness of the entire region. Even rural areas can benefit from the development of dynamic cities, as their economic power has a positive impact on the surrounding countryside. The future of the Baltic Sea region therefore depends a great deal on the solutions found in the urban centres to face demographic challenges, on how knowledge-based structural change is handled there, and on how well these centres are integrated into the global economy. Such trends bring challenges, but they also offer opportunities and further potential. The countries in the Baltic Sea region could benefit from these trends in future. Strategic collaboration between people and the common pursuit of socio-economic strategies which reflect the regional relationships and the particular features of the region are important prerequisites for this to happen.

1 | Introduction

The Baltic Sea states Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden represent a diverse community of states. They constitute a specific economic and living area with strong potential for integration along the interior borders of the EU and with Russia. With the exception of Russia, the countries with access to the Baltic Sea are all part of the EU and, with around 147 million inhabitants, they account for 29% of the population of the EU. These countries generate 29.3% of the GDP of the EU Member States. This makes the area a significant economic region in Europe whose specific structure and history offers numerous opportunities for development. The special importance of the Baltic Sea region in Europe is also the subject of the EU Strategy for the Baltic Sea Region endorsed by the European Commission in 2009. The cornerstones of this strategy are to make the Baltic Sea region more environmentally stable, safe and secure, prosperous and accessible.

Exploit the advantages of proximity

The strategy includes an action plan with 80 flagship projects, some of which are already under way. Some examples of these flagship projects include turning the Baltic Sea region into a model region for clean shipping, mitigating and adapting to climate change, removing hindrances to the internal market in the Baltic Sea region, and establishing a common Baltic Sea region innovation strategy (cf. European Commission, 2009). It is worth noting that this concept represents the first comprehensive strategy of its kind at the macro-regional level the EU has developed. The European Commission also emphasises the significance of regional cooperation between players in the Baltic Sea region for the success of the Strategy for the Baltic Sea Region.

When developing strategies in general, it must be borne in mind that the conditions for socio-economic development in the Baltic Sea region will change over the next decades. The ongoing structural change towards service and knowledge societies, innovations, the intensification of economic interconnections in global goods, services and labour markets, the increasing integration of neighbours within the Baltic Sea region and the demographic change will all have considerable influence on the region. Such trends bring challenges, but they also offer opportunities and further potential. The countries in the Baltic Sea region could benefit from these trends in future. Strategic collaboration between people and the common pursuit of socio-economic strategies which reflect the regional relationships and particular features of the region are important prerequisites for this to happen.

In the following, various facets and special features of the Baltic Sea region will be shown to describe the current situation, the potential and the challenges the region will face in future. There are chapters dedicated to the meaning of trade in the Baltic Sea region (Chapter 2), the challenges of demographic changes (Chapter 3), the prospects for the region as an area of innovation (Chapter 4), and the pivotal role of the cities there as initiators for the development of the entire Baltic Sea region (Chapter 5). A more narrow regional definition of the Baltic Sea region is the federal states of Schleswig-Holstein, Hamburg and Mecklenburg-Western Pomerania for Germany; the Western Pomeranian, Pomeranian, Warmian-Masurian and Podlaski voivodeships in the north of Poland; and St Petersburg and Kaliningrad for Russia. Because of

their geographical circumstances, the remaining countries in the Baltic Sea region are treated in their entirety in the analysis (cf. Figure 1).

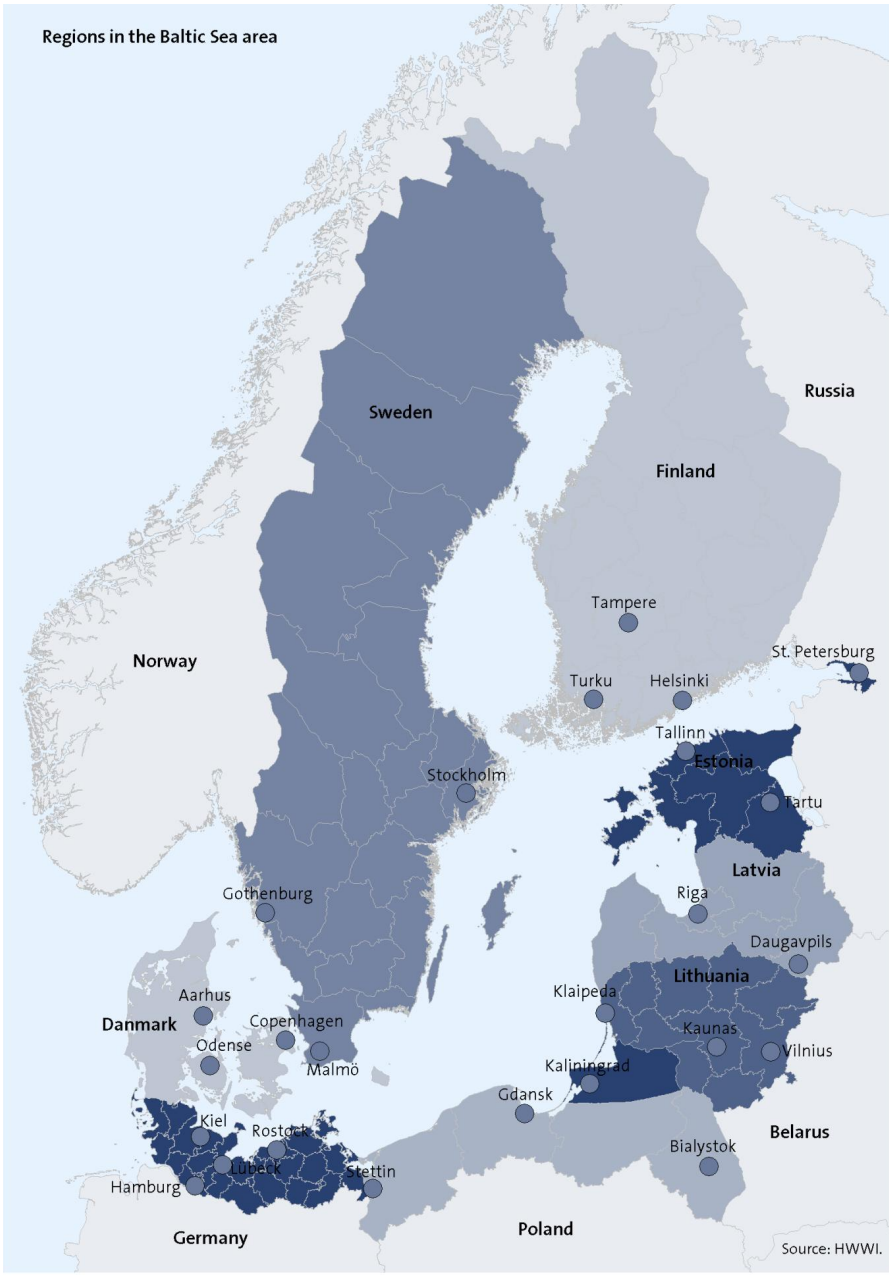


Figure 1

2 | Trade with the Mare Balticum

Back during the day of the Hanseatic League, between the middle of the 12th and the middle of the 17th centuries, maritime transport made it possible for regions with access to the Baltic Sea to trade goods with each other extensively. These advantages in the interregional exchange of goods made being located on the sea or on a river a critical factor for the economic development of a city. The ongoing integration of the worldwide economy will offer the ports in the Baltic Sea region particular potential in future as well, especially for the maritime industries and related businesses. The intensification of trade and transport cost advantages tend to strengthen the spatial concentration of economic activities in favour of locations near the sea (cf. Ott et al. 2010).

Potential for port cities from ongoing integration

According to empirical studies, the costs of transporting goods from one region to another increase by 20 to 30% when the two regions are twice as far apart (cf. WTO 2004). This correlation helps us to understand why international trade relationships tend to be more intense, the smaller the distance between the trading partners is. For one, this explains why trade within Europe is more important for the EU Member States than trade outside Europe (cf. Großmann et al. 2006) and why the neighbours within the Baltic Sea region have intense import and export trading relationships with each other. Other reasons for the intense interconnection are the spatial proximity, the historical bonds between the new federal states and the nations of Eastern Europe and the traditional economic interconnections between the Hanseatic cities.

Intensive trade links in the Baltic Sea region

The neighbours within the Baltic Sea region are important trade partners for the EU Member States. In 2009 they exported goods worth EUR 725 billion to other EU nations, equal to 33% of exports within the EU. Adding trade outside the EU, this share increased to 34% or a total of EUR 1.1 trillion (all figures excluding Russia). Altogether the Baltic Sea states imported goods worth EUR 993 billion in 2009 (28% of them from countries outside the EU), accounting for 30% of total imports to EU countries. For the sake of comparison: the Mediterranean Sea states (Greece, France, Spain, Slovenia, Malta, Cyprus and Italy) accounted for 25% of EU exports and 29% of EU imports.

The history of the Baltic Sea region

»On the so-called Mare Balticum or Baltic Sea, battle has seldom been for mastery of the sea, but has rather been a war for the coastline. The Baltic Sea has always served more to connect the surrounding nations than to separate them. Sea transport was and is cheaper, more comfortable and faster than the land routes. Even today, there are no motorways which continue the entire length of the Baltic Sea coastline. It was rare that a foreign fleet managed to play an important role in the Baltic Sea – the Dutch and the English are really the only two, and even then it was only for a short time – and since the Viking era, no Baltic Sea state has ever been a naval power.

The common history of the Baltic Sea region began as the Kingdom of Denmark, which had already encompassed Norway and Iceland since the early Middle Ages, grew stronger and began to expand. In addition to southern Sweden, it conquered Gotland and the area which is now Estonia. Legend has it that it was during this conquest that Denmark obtained the Dannebrog, the oldest state flag in the world still in use. Things were going very badly for King Valdemar as he attempted to conquer Tallinn; falling to his knees, he prayed to God for a sign and promised to have his army baptised in return. God sent the white cross on a red background fluttering down from heaven and the Danes were victorious. The white cross on a red background is still the coat of arms for the city of Tallinn.

Back then, Denmark's greatest foe was not a hostile kingdom but rather the Hanseatic League. It was considered the binding force in the Baltic Sea region, though this was only true to a point. No Danish cities were members of the Hanseatic League and Denmark was its greatest adversary in the Baltic Sea region.

Under the leadership of the Danes, the kingdoms of Denmark, Norway, Sweden and parts of Finland and Estonia, which belonged to the Swedish crown, were brought together into the Kalmar Union (1397-1523). The Stockholm Bloodbath committed against the Swedish insurgents marked the de facto end of the union in 1520. Future king Gustav Eriksson Vasa fled Stockholm for Mora on snowshoes – the "Wasa Run" is now a famous long-distance ski race – and then gathered troops to successfully defeat the Danes, which led to the re-establishment of the Kingdom of Sweden.

Vasa's victory had significant repercussions for Europe. Too broke to repay a loan from the city of Lübeck, Vasa decided to act on the advice of his councillors, that is, to expropriate the belongings of the Catholic Church and convert to Protestantism. The consequence was that Sweden became Protestant, saving the lives of many German Protestants during the Thirty Years' War.

The Tsardom of Russia appeared on the Baltic Sea during the Great Northern War (1700–1720) and its importance continued to grow until the end of the First World War, as it conquered first the Baltic provinces of Estonia and Livonia as well as Riga, then later Courland and finally Finland in 1814. By 1918, the situation in the Baltic Sea region had changed drastically. Finland, Estonia and Lithuania had become independent states, and Latvia was composed of southern Livonia, Courland, Riga, Latgalia and Zemgale. Germany lost land to Poland, and Gdańsk became a free city administrated by

the League of Nations. Denmark expanded its territory up to its current border near Flensburg.
After the Second World War, the Baltic Sea was divided into areas under the control of the Soviet Union and NATO. The three Baltic States and north eastern Prussia went to the Soviet Union, while Poland and the later GDR became socialist republics. Finland was forced to adopt a neutral foreign policy and Sweden also remained neutral. Denmark and later the Federal Republic of Germany became members of NATO. Another consequence of the Iron Curtain, which then divided the Baltic Sea, was that German was replaced as the lingua franca and language of scholars around the interior sea by Russian in the east and English in the west.
Once the Soviet system collapsed in 1989 and the three Baltic nations became independent, the freedom of Finland to choose its own foreign policy and the transition of Poland to a democratic system made it possible for the EU to expand into the Baltic Sea region: first to Finland and Sweden in 1995 and then to the other neighbouring states in 2004, with the exception of the Russian Federation. The Baltic Sea had become a de facto EU interior sea«.

Ernst Johansson, Attorney-at-Law
President of the Deutsch-Nordischen Juristenvereinigung and Vice-President of the Europa-Union Deutschland
Mr Johansson represents the European Movement Schleswig-Holstein on the board of the Network European Movement Germany.

Germany plays a critical role in trade on the Baltic Sea. In 2009, it exported goods valued at EUR 75 billion to the Baltic Sea region and imported goods worth EUR 70 billion. It is an important purchasing and sales market for most Baltic Sea states, though some regions within Germany are targeted more than others. Tables 1 and 2 show the importance of trade on the Baltic Sea for the German federal states in terms of value. Berlin, Brandenburg, Mecklenburg-Western Pomerania, Lower Saxony, Saxony, Saxony-Anhalt, Schleswig-Holstein and Thuringia show the most intensive trade links to the Baltic Sea states. They import between 12.7% (Lower Saxony) and 50.3% (Brandenburg) of their goods from this area. One-fifth of the exports of Brandenburg, Saxony-Anhalt and Schleswig-Holstein go to the Baltic Sea region. Mecklenburg-Western Pomerania even settles 26.5% of its foreign trade there. Brandenburg and Saxony-Anhalt trade relatively a lot (exports and imports) with Poland and Russia. Schleswig-Holstein is closely linked to the Kingdom of Denmark due principally to its geographic proximity. This is also true of Mecklenburg-Western Pomerania, which draws 31.7% of its imports from Denmark and sends 27.2% of its exported goods there. Sweden is another important trade partner of Mecklenburg-Western Pomerania, getting 27.6% of the exports of the federal state.

Even federal states which are far distant from the Baltic Sea, such as Bavaria and Baden-Württemberg, have clear trade links to the Baltic Sea region. This is partly due to the strong exports of the automotive industry in these southern German federal states. Tables 1 and 2 show that no federal state posts less than 6% of exports to or imports from the Baltic Sea states.

Exports: German states to Baltic Sea area 2009

		German states[1]							
		BW	BY	BE	BB	HB	HH	HE	MV
Exports to Baltic Sea area	Mill. €	10 735	10 683	1 463	2 080	655	2 430	4 254	1 342
Share of Denmark	%	14,2	10,9	6,7	8,8	14,2	20,5	11,3	27,2
Share of Estonia	%	1,1	1,7	0,8	0,8	2,3	0,8	1,1	0,3
Share of Finland	%	9,8	9,9	4,1	4,5	6,7	5,7	7,7	4,2
Share of Latvia	%	0,9	1,0	0,9	0,8	1,5	1,5	1,0	0,6
Share of Lithuania	%	1,6	1,8	5,2	0,9	1,4	1,0	1,5	1,4
Share of Poland	%	29,0	31,0	30,7	62,3	40,9	30,1	34,9	21,0
Share of Sweden	%	18,9	21,0	11,8	7,1	18,8	13,2	18,3	27,6
Share of Russia	%	24,6	22,9	39,8	14,8	14,2	27,2	24,2	17,7
Share of export to Baltic Sea area	%	8,6	8,6	13,9	19,5	6,1	7,8	9,9	26,5
		NI	NW	RP	SL	SN	ST	SH	TH
Exports to Baltic Sea area	Mill. €	7 664	16 554	2 945	971	2 516	2 012	2 924	1 124
Share of Denmark	%	17,6	14,7	13,6	6,0	10,9	12,5	44,7	12,2
Share of Estonia	%	1,2	0,9	1,0	0,5	0,6	0,8	1,8	0,9
Share of Finland	%	7,7	7,6	9,0	8,1	4,6	4,4	5,9	5,2
Share of Latvia	%	1,3	0,7	0,9	0,3	1,4	0,8	0,8	2,8
Share of Lithuania	%	1,7	1,5	1,8	1,3	1,1	1,3	1,4	1,6
Share of Poland	%	31,4	34,9	36,5	35,8	49,7	57,3	18,0	42,7
Share of Sweden	%	18,7	17,1	17,3	21,5	11,3	9,6	16,2	13,4
Share of Russia	%	20,5	22,5	20,0	26,5	20,5	13,3	11,1	21,2
Share of export to Baltic Sea area	%	13,5	11,9	8,4	8,7	12,9	19,6	19,5	12,5

[1] BW = Baden-Württemberg; BY = Bavaria; BE = Berlin; BB = Brandenburg; HB = Bremen; HE = Hesse; MV = Mecklenburg-West Pomerania; NI = Lower-Saxony, NM = North Rhine-Westphalia; RP = Rhineland-Palatinate; SL = Saarland; SN = Saxony; ST = Saxony-Anhalt; SH = Schleswig-Holstein; TH = Thuringia

Sources: Federal Statistical Office (2010); calculations HWWI.

Table 1

Hamburg trades 7.8% of its imports and exports (excluding pure port handling activities) with the Baltic Sea region. In particular, it exports goods to Denmark (31.9% of weight and 20.5% of value), Sweden (19.7% of weight and 13.2% of value), Poland (32% of weight and 30.1% of value) and Russia (4.6% of weight and 27.2% of value). In turn, most of its imports, in weight and value, come from Poland (about 527 million t and EUR 1.1 billion) and Russia (about 4.1 billion t and EUR 1.5 billion). These are primarily the container trade of high-value goods with Russia's former capital of St Petersburg and raw materials with Vyborg and Vysotsk.

Figures 2 and 3 show the development of trade in value terms between the federal states in the Baltic Sea region and the Baltic Sea states during the period from 2002 to 2009. A significant decline in the imports and exports of Mecklenburg-Western Pomerania and Schleswig-Holstein during 2008 and 2009 can be seen following the financial and economic crises, whereas Hamburg's imports only shrank marginally.

Imports: German states from Baltic Sea area 2009

		German states[1]							
		BW	BY	BE	BB	HB	HH	HE	MV
Imports from Baltic Sea area	Mill. €	6 734	10 542	1 394	5 615	1 420	4 206	3 823	1 364
Share of Denmark	%	9,5	6,2	8,8	3,4	20,9	13,4	11,4	31,7
Share of Estonia	%	0,9	0,4	0,3	0,1	0,6	0,5	0,5	0,8
Share of Finland	%	10,5	4,0	5,4	2,8	6,8	4,5	6,8	12,5
Share of Latvia	%	0,5	0,7	0,2	0,1	0,9	0,4	0,5	0,8
Share of Lithuania	%	1,4	1,0	1,4	0,6	0,9	4,3	1,2	3,9
Share of Poland	%	32,7	26,3	62,9	21,6	26,8	25,2	41,7	29,2
Share of Sweden	%	24,1	8,9	17,7	1,9	20,5	15,1	17,8	10,4
Share of Russia	%	20,3	52,5	3,4	69,5	22,6	36,7	20,1	10,8
Share of imports from Baltic Sea area	%	6,2	9,6	16,3	50,3	13,1	7,8	6,5	39,7
		NI	NW	RP	SL	SN	ST	SH	TH
Imports from Baltic Sea area	Mill. €	7 808	15 406	2 248	1 043	2 486	4 314	5 492	975
Share of Denmark	%	17,7	15,4	13,6	3,7	7,1	1,6	44,6	12,0
Share of Estonia	%	0,9	0,4	0,4	0,3	0,2	0,2	0,4	0,6
Share of Finland	%	7,9	9,5	4,8	1,3	2,8	1,0	12,9	2,3
Share of Latvia	%	0,7	0,6	0,4	0,2	0,6	0,2	0,2	0,8
Share of Lithuania	%	1,8	1,7	0,8	0,7	0,8	0,8	1,8	3,2
Share of Poland	%	40,7	36,5	28,9	24,4	38,0	13,7	7,9	37,1
Share of Sweden	%	12,9	14,7	14,9	26,7	6,0	3,8	22,3	8,7
Share of Russia	%	17,4	21,2	36,2	42,7	44,6	78,7	9,8	35,3
Share of imports from Baltic Sea area	%	12,7	10,4	10,1	10,8	17,9	46,7	32,2	16,9

[1] BW = Baden-Württemberg; BY = Bavaria; BE = Berlin; BB = Brandenburg; HB = Bremen; HE = Hesse; MV = Mecklenburg-West Pomerania; NI = Lower-Saxony, NM = North Rhine-Westphalia; RP = Rhineland-Palatinate; SL = Saarland; SN = Saxony; ST = Saxony-Anhalt; SH = Schleswig-Holstein; TH = Thuringia

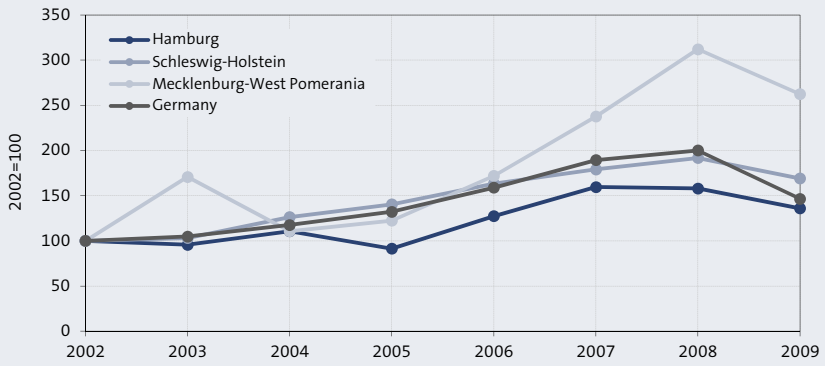
Sources: Federal Statistical Office (2010); calculations HWWI.

Table 2

Expansive development of trade in Baltic Sea region

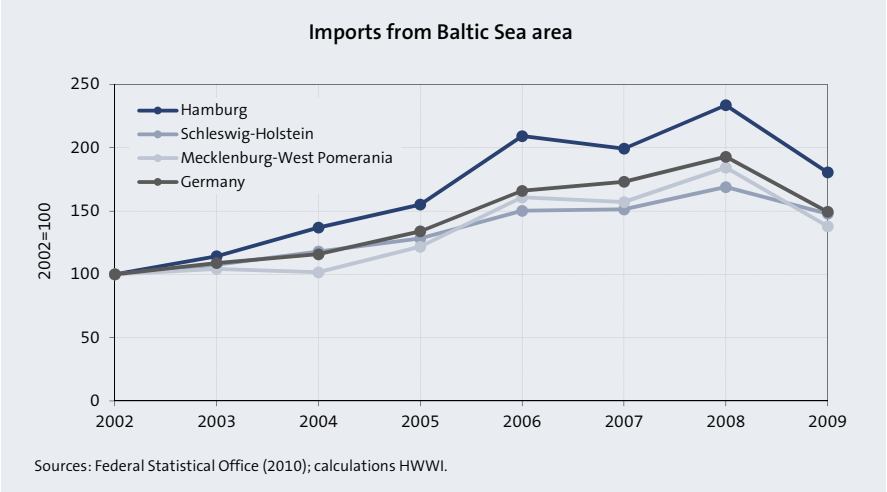
Overall, exports and imports between the federal states named and the Baltic Sea states increased from 2002 to 2009. The strongest growth in trade was posted by Mecklenburg-Western Pomerania. Hamburg's trade rose by more than 35% during the same period. Altogether, the trade of the three federal states observed developed parallel to Baltic Sea trade for Germany as a whole.

Exports to Baltic Sea area



Sources: Federal Statistical Office (2010); calculations HWWI.

Figure 2



Sources: Federal Statistical Office (2010); calculations HWWI.

Figure 3

One important determinant of the future trade relationships in the Baltic Sea region is the development of the national gross domestic products, because these influence trade volumes. The growth prospects of the individual Baltic Sea states vary. For example, Finland's real GDP will rise by 2% in 2011 according to an IMF forecast. The growth forecast for Germany is also 2%, while the Baltic nations are expected to grow annually by more than 3%. The strongest growth is projected for Poland and Russia, whose economies should expand by 3.7% and 4.3% by 2011. The IMF forecasts global trade volumes will grow by 7% by 2011, then on average by 6.9% from 2012 to 2015 (cf. IMF 2010). The Baltic Sea states will benefit from this, as they show a good basis for development overall. For example, export volumes in Estonia are forecasted to grow on average by 10% through 2011, and by 9% in Germany (cf. OECD 2010).

Maritime shipping continuing to grow

The increase of trade in the Baltic Sea region will also mean further expansion of maritime shipping, because ships are a main form of transportation here. For example, in 2008 the proportion of maritime shipping was 84% in Estonia, 89% in Latvia and 67% in Lithuania (cf. Bundesamt für Güterverkehr 2009). The expansion of maritime trade will create challenges for environmental protection but it should also be a trigger for innovation. New technologies for maritime shipping can be developed and employed which protect the sensitive interior Baltic Sea. There are already numerous initiatives to protect the environment (cf. Box 1), including those under the scope of the EU Strategy for the Baltic Sea Region. For example, the Baltic Sea region should become a model region for clean shipping and nutrients inputs to the sea should be reduced to acceptable levels (cf. EU 2010). While this should reduce the environmental pollution of the Baltic Sea region, it will also impair the competitiveness of shipping, which might lead to shifts in the distribution of freight transport among the various options.

Box 1
Environmentally friendly ships

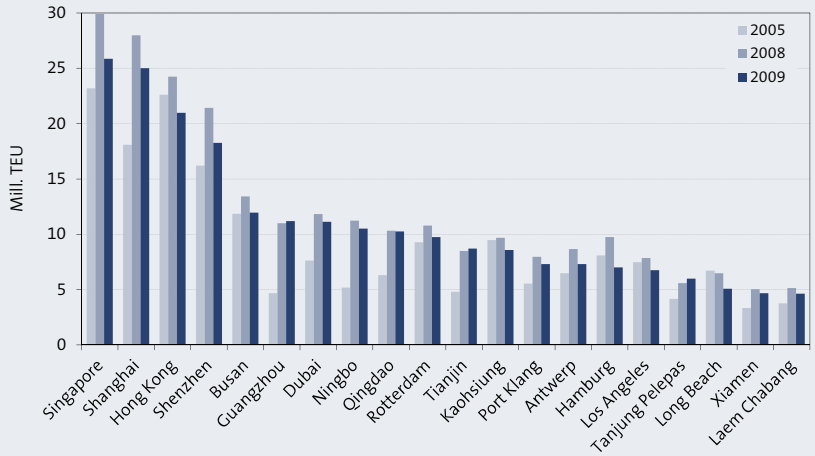
Numerous ports, including Gdańsk, Gothenburg, Hamburg, Klaipeda, Riga, Tallinn and Stockholm, have joined forces in the World Ports Climate Initiative (WPCI). The aim of the initiative is to reduce greenhouse gas emissions from ports and thereby improve air quality. Cruise ships are the primary generators of emissions, vibrations and noise as they provide light, heat and electricity of all kinds to their passengers, even in port. At present, these ships deliver most of their electricity needs when anchored using the ship engines, which burn heavy oil. This was the motivation for a recommendation in 2007 to set up more environmentally friendly shore side power supply via electrical connections, which create far less noise and vibration. Within the Baltic Sea region, the ports at Gothenburg and Lübeck are forerunners in this regard, already advancing this form of electricity supply. Kiel is working on employing and installing this technology as well. The Port of Hamburg is also a role model, offering lower port fees to environmentally friendly ships starting in 2011 (cf. Tiedemann 2010).
Moreover, the port association between Le Havre, Antwerp, Rotterdam, Bremen and Hamburg promotes the development of a unified Environmental Ship Index (ESI) to classify ships by their emissions (cf. World Ports Climate Initiative 2010a). At present, ships may not use fuel with more than 1.0% sulphur content in so-called Sulphur Emission Control Areas (SECA). The North Sea and Baltic Sea are the only SECA sailing areas in the world. The limit in all other waters is 3.5%. Within the scope of Marpol, the International Maritime Organisation (IMO) lowered the limit for sulphur content in the control areas to 0.1% to protect the ecosystems of the North Sea and Baltic Sea.
Valid starting in 2015, the agreement might merely shift transport to land means, since the use of oil distillates in shipping is considerably more costly. Within the Baltic Sea region, the Institute of Shipping Economics and Logistics (ISL) (2010) expects this change to shift 600,000 units annually from maritime transport to trucking. The land routes from Western Europe to Russia and the Baltic nations already compete with shipping and their position should improve as maritime transport becomes more expensive, as it is expected to do. As an alternative to the 0.1% limit, the ISL proposes the maximum sulphur content be reduced to 0.5%, which would not change the transportation cost ratio between the various carriers materially.

Container handling in maritime hub-and-spoke routing

The hub-and-spoke routing strategy is meaningful for the structure of maritime logistics in the European sailing waters. The largest ports in Europe, Antwerp, Rotterdam and Hamburg, function as hubs for the Baltic Sea region. From there, the goods are transported to smaller ports using feeder ships. These small feeder ships travel regularly on a fixed schedule while larger ships are used for the longer distances. This allows companies to benefit from economies of scale, as moving larger volumes at a time lowers the transport costs per unit. It also reduces the travel time for large ships, because they do not have to enter every port. The hub-and-spoke strategy is also necessary in the Baltic Sea because many smaller ports are not equipped for the entrance of large container ships and tankers.

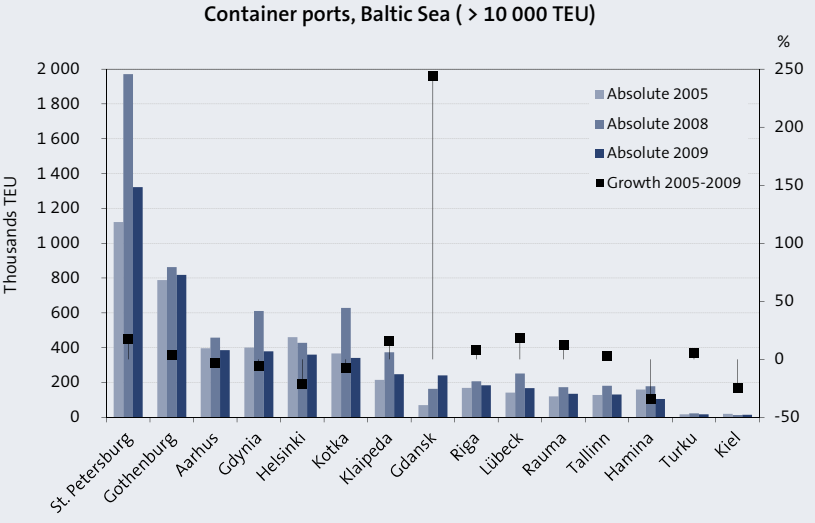
In Hamburg this hub-and-spoke strategy is especially important for the Baltic Sea because many goods from Southeast Asia are redistributed here.

For example, within the intermodal transport chain, Hamburg accounts for about 26% of goods in maritime feeder shipping, 54% of truck freight and 19% of rail freight (cf. German Federal Statistical Office 2010). The Port of Hamburg is the central point in Germany for the transfer of goods for overseas transport. The Hanseatic city of Hamburg mainly profits from container handling. The proportion of parcelled goods transported by container rose from 71% in the 1990s to 97% in 2009. Figure 4 shows the global position of Hamburg's container handling activities (ranked 15th). In 2009 about 7 million containers were handled in Hamburg. This is about 3.5 times less than Singapore, the largest container handling ports in the world, but about 5 times larger than St Petersburg (cf. Figure 5).



Sources: HPA (2010); calculations HWWI.

Figure 4



Sources: HPA (2010); calculations HWWI.

Figure 5

Locations for container ports

St Petersburg is the largest container port in the direct sailing waters of the Baltic Sea. It handled about 1.3 million containers in 2009. After the Russian city, which is the second largest city in Russia after Moscow, second place goes to Gothenburg. The port at Gothenburg has various locational advantages to the one at Stockholm. It is free of ice year round and can quickly be called at by ships from Rotterdam and Hamburg without having to travel through the North Sea-Baltic Sea Canal or around northern Denmark through the Skagerrak. Furthermore, Gothenburg, the second largest city in Sweden with a catchment area of nearly 1 million people, sits directly on a railway junction which reaches Stockholm, Malmö, Copenhagen and Oslo.

The greatest growth among the container ports in the Baltic Sea during the period from 2005 to 2009 was posted by Gdańsk (+244%). This represented an increase of 170,609 containers in 2009. Gdańsk was followed by Lübeck, with an increase of 18%. Nonetheless, the two ports began from a low base, which explains their high growth rates. Lübeckwas primarily specialised in trade with paper and cellulose from Finland, Sweden and Russia. In addition, roll-on / roll-off ferries travel from Lübeck to these three countries and the Baltic nations. Looking at the development between 2008 and 2009, however, container handling at Lübeck fell by 82,722 standard containers, a 33% decline. This is why the Hamburger Hafen Logistik AG (HHLA) abandoned the container terminal it had been operating in Lübeck since 2002 and discontinued the container railway connection between the two Hanseatic cities (cf. Behling 2009).

Container trade expands further

In the period from 2008 to 2009, the main shipping areas of the Hanseatic city of Hamburg posted a strong decline due to the economic and financial crises. The most dramatic decrease was seen in the Port of Hamburg's container handling for Baltic Sea shipping (-44%). The improvement in the worldwide economy was already showing positive effects on global trading in 2010 with the corresponding boost to the ports. The handling of seaborne goods recovered relatively strongly in Hamburg during the first nine months of 2010. The port posted an increase in turnover of 8%. This means the September volumes were up 10% year-over-year. Quarterly trade volumes had rebounded year-over-year particularly well for container traffic with Russia (+15%), Poland (+19%) and the Baltic nations (+39%).

Promote short sea shipping

The European Commission is currently implementing an initiative to promote short sea shipping within the scope of European transportation policy (cf. European Commission 2001 and 2009). It is aiming to set up a 14-point plan, including the harmonisation of guidelines for intermodal transportation. The Baltic Sea states, with their long coastlines, should benefit from such a plan. As part of the plan, new lines should be laid and expanded between smaller ports and between the hubs and the smaller ports. These measures should take some of the pressure off of other transportation means, such as railways and motorways. This strategy to develop transportation routes is highly relevant for improving the infrastructure in the Baltic Sea region, because there are relatively few onshore connections between the countries there.

The infrastructure should be further improved through large projects, such as the fixed link across the Fehmarn Belt (cf. Box 2). Such infrastructural measures improve the underlying conditions for economic activities and cross-border integration. There will also be a future need for investment in numerous areas within the Baltic Sea region to improve their accessibility.

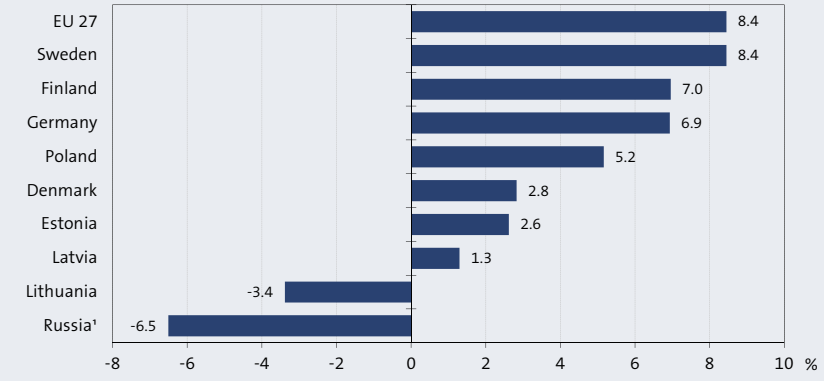
These include, for example, the railway connections for freight transport in the east-west corridor from France over Germany, Poland and the Baltic nations, to Russia and in the north-south corridor (Rail Baltica) from Tallinn in Estonia to Warsaw in Poland (cf. BAG 2010, European Commission 2001, 2007).

Box 2
The Fehmarn Belt fixed link connects

At the end of 2008, the Federal Republic of Germany and Denmark signed a treaty for a fixed link across the Fehmarn Belt. At the start of 2011, the Danish government decided to build a tunnel rather than a bridge for the rail and road traffic between Fehmarn Island in Schleswig-Holstein and Lolland in Denmark. The construction of a fixed link should connect to the north-south axis of the Trans-European Transport Network. The costs for the project are forecast to be EUR 5.6 billion. Denmark will bear the entire costs of not only the construction of the tunnel but the connections to the hinterlands of the kingdom's sovereign territory (ca EUR 4.8 billion).
Germany will finance the costs for the connections within Schleswig-Holstein (cf. German Bundesrat 2009). The hinterland connections to be built or expanded should be 4-lane for road traffic and 2-lane for electric rail traffic. Building the land connection will reduce the travel time from Hamburg to Copenhagen from 4.5 to 3.5 hours. The fixed link will have a positive influence on the cross-border labour market integration between Germany and Denmark and the possibility of commuting. However, the decisive stimulus is not expected to come until there has been a significant shift in residential areas and jobs towards the Fehmarn Belt (cf. Barten et al. 2006). At present the directly affected potential source regions are relatively sparsely populated. The German federal states have diverse positions regarding the project. For example, Mecklenburg-Western Pomerania is worried about a decline in employment in favour of locations with ferry routes to Sweden. In contrast, Schleswig-Holstein sees the construction as an opportunity to position itself as a hub between the Copenhagen and Malmö regions and Hamburg. Denmark predicts that the project will contribute about EUR 402 million to welfare over the duration of 50 years (cf. Economics Aps and Prognos AG 2004).

3 | Demography and labour market integration

In the Baltic Sea states (excluding Russia), the labour force was 67 million strong in 2009. This is 30.9% of the total in the EU (cf. Eurostat 2010). Since 1999, the number of jobs in these states has risen by 6.1% (cf. Figure 6), which illustrates how the need for labour force in this economic area is tending to grow. Only Russia and Lithuania are outside this trend. Having a large enough labour force is essential for the future economic development of the Baltic Sea region. It is closely tied to the changes in the number of inhabitants of employable age, which will foreseeably decline in the coming decades as part of the demographic changes in the Baltic Sea region.



¹ from 2000 to 2009

Sources: Eurostat (2010); OECD (2010); calculations HWWI.

Figure 6

Reduction in number of people of employable age

These demographic changes are the result of a continuous increase in life expectancy, low birth rates and regional differences in migration movements (cf. Table 3). Fertility rates in all Baltic Sea states are below the "conservation level", which is an average of 2.1 children per woman. Denmark, Estonia, Finland and Sweden show high fertility rates above the EU average (1.6). In the other countries, fertility rates vary between 1.31 and 1.54. At only 1.36 children per woman, the fertility rate in Germany is particularly low (cf. Table 3).

The life expectancy in Denmark, Finland, Germany and Sweden is much higher than in the countries in the eastern part of the Baltic Sea region. However, the life expectancy there has also been continuously rising since the start of the 1990s, mainly due to better environmental, employment and nutritional conditions. It is approaching the level found in the western states. In 2000, for example, the life expectancy at birth in Estonia was 65.1 years for men and 76 years for women. By 2009, these figures had risen to 69.8 years for men and 80.1 years for women. At an average of 81 years for both genders, Sweden has the highest life expectancy.

Demographic indicators

	Fertility rate	Expectancy of life at birth in years				migration balance
	2009	2000[1]		2009		1998 – 2008[2]
		Men	Women	Men	Women	
Denmark	1,84	74,3	79,0	76,5	80,8	120 502
Germany	1,36	75,4	81,2	77,3	82,5	1 223 305
Estonia	1,62	65,1	76,0	69,8	80,1	-11 647
Finland	1,86	74,1	81,0	76,5	83,1	80 566
Latvia	1,31	64,9	76,0	68,3	78,1	-30 457
Lithuania	1,55	66,8	77,5	67,5	78,6	-46 272
Poland	1,40	69,7	78,0	71,5	80,1	-200 050
Russia	1,54	59,0	72,3	62,8	74,7	479 707
Sweden	1,94	77,4	82,0	79,4	83,4	351 418
EU 27[3]	1,60	74,5	80,9	76,1	82,2	not specified

[1] For Germany data from 2002

[2] Estonia: from 2004 till 2008; Russia: from 2005 till 2008

[3] Fertility rate from 2008; Expectancy of life from 2002 and 2007

Sources: Eurostat (2010); Federal Statistical Office (2010); calculations HWWI.

Table 3

Emigration represents an enormous challenge for the Baltic nations

Migration movements are a critical factor for cross-border labour market integration in the Baltic Sea region. At the same time, it differentiates the process of demographic change between the countries. While the Baltic nations and Poland have had to deal with great losses due to emigration over the last ten years, the countries in the western part of the Baltic Sea region are a destination for immigrants. The pattern within the Baltic Sea region therefore shows people migrating from low-wage countries to those which offer high wages. The EU Act of Accession stipulates that the EU-15 Member States may only suspend the freedom of movement of workers from the countries which joined the union in 2004 until no later than 1 May 2011. Germany is one of the few countries which decided to extend the restriction from 1 May 2009 to 30 April 2011. For Germany, this means that during this period of time citizens of the newer Member States are subject to the Immigration Act like immigrants from other countries, and thus need a work permit.

New provisions since 1 May 2011

The provisions for labour market integration in the EU changed on 1 May 2011 when complete freedom of movement for people (and freedom to provide services) was instituted. Immigration forecasts indicate that up to 240,000 people could migrate annually from the more recent EU Member States (excluding Bulgaria and Romania) to the EU-15 through 2020. The same forecasts indicate that around 190,000 will immigrate from Bulgaria and Romania into these EU countries annually through 2020. By the year 2020, the number of immigrants in Germany could rise by about 1.8 million persons, meaning net annual migration of 175,000 persons. Predictions suggest that Germany will benefit less than other countries from the migration of highly qualified workers from Eastern Europe, increasing numbers of which will emigrate to the US and the UK (cf. Brücker et al. 2009). For example, since 2006, more Polish workers in total have emigrated to the UK than to Germany. In 2009, however, the migration preferences of the Poles shifted away from the UK and towards Germany (cf. Iglicka 2010). It remains to be seen what repercussions opening up the German labour market will have.

Challenges of demographic change

»In many countries, hardly any challenge for the future has been discussed at such length and with such intensity as the issue of demographic change. Some would claim that, 'the issue cannot be mastered without clear migration policies', while others attempt to react to the issue by raising the age of retirement and lowering the age at which people start working. But are these the only options?

There are actually countries in the Baltic Sea region with rising birth rates. Strategic family policies, including 'salaries for mothers', kindergartens and other offers for families, have led to exciting results in many northern countries like the Baltic nations. There are manifold approaches and focuses in the Baltic Sea states – but which are the most effective? Which are best suited to the 21st century?

Naturally, there is not only one correct solution, but we need to keep thinking outside the box and trying to find and implement the best options. Few doubt that the retirement age needs to be lifted, but this is only a part of the complex demographic puzzle. How will we handle migration? Do we prefer more EU-internal immigration or from other countries as well? And how do we prevent EU-internal labour migration from leading to a situation where one's meat is another's poison? What if the targeted poaching of qualified labour in its country of origin – for example, Latvia – created enormous problems?

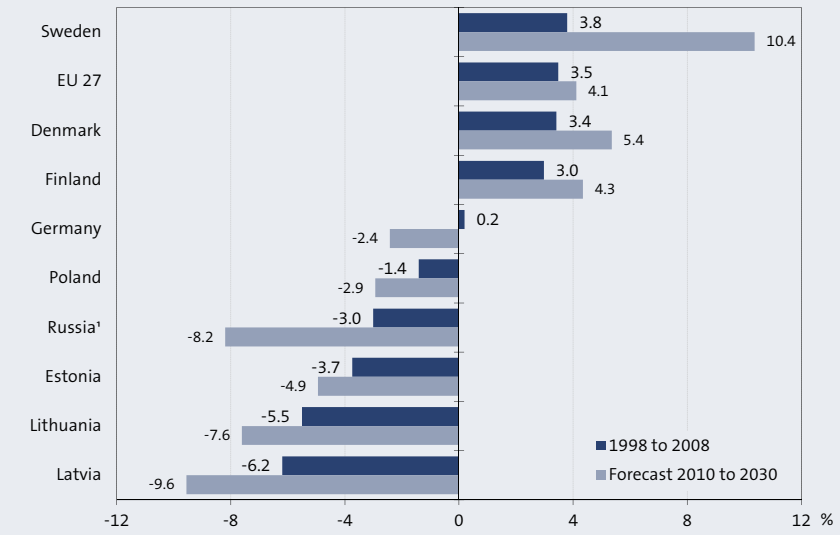
Unfortunately, I have more questions than answers. Nonetheless, there is hope that many active citizens, companies and politicians in the neighbouring regions of Europe, like around the Baltic Sea, see the opportunity in these difficult times to learn from each other, to share their experience across borders, and to develop true partnerships. This is something even large and wealthy Germany can learn from small but ambitious Latvia«.

Andris Gobins
President of the European Movement Latvia
Member of the European Economic and Social Committee
Member of the Latvian Government's Cooperation Council and the Organised Civil Society in Latvia

Declining population numbers in many places

The consequences of the past low fertility rates and losses due to migration in the Baltic nations and Poland can clearly be seen in the population trends between 1998 and 2008 (cf. Figure 7). While Sweden reported growth of 3.8%, the population in these countries declined. The population in Germany hardly changed, with an increase of 0.2%. Altogether, population growth in the Baltic Sea region is below the EU average (+3.5%).

The demographic trends of the last several years should continue in future. This means the population is getting both smaller and older. Eurostat forecasts that only Denmark, Finland and Sweden will show strong population growth in the next twenty years (cf. Figure 7). Populations will shrink, primarily in the countries in the eastern part of the Baltic Sea region, especially Latvia (-9.6%). It must be noted, however, that the assumed future migration numbers are critical parameters for the findings of population forecasts. If the countries which are projected to lose population are able to stem emigra-



¹ from 2001 to 2009

Sources: Eurostat (2010); OECD (2010); Federal State Statistics Service of the Russian Federation (2010); calculations HWWI.

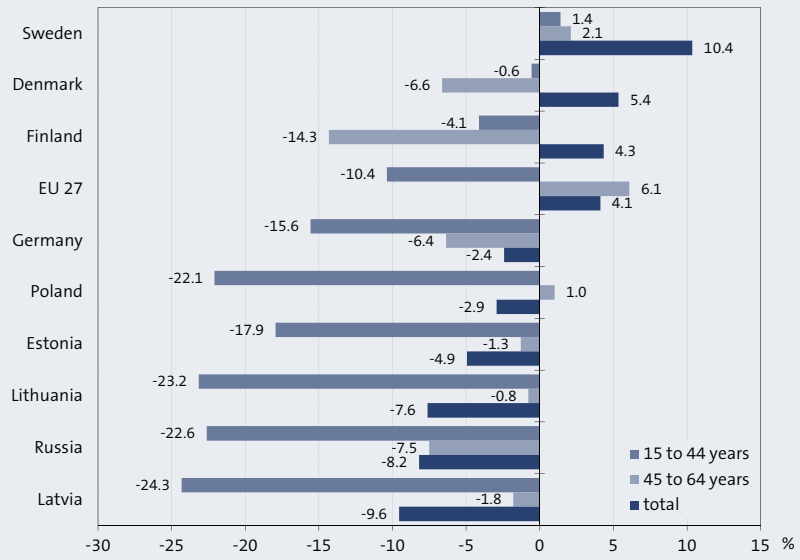
Abbildung 7

tion, this would decelerate the rate of population decline. Their success in this will depend largely on these countries' ability to develop economically, on future wage levels, and on the extent to which additional jobs can be created.

Ageing labour force influences economy

It is not only the number of people of employable age which is shrinking. The age distribution will also change. The proportion of people of working age under 45 years old will tend to diminish. In the eastern countries, this is forecast to shrink between -7.9 and -24.3% (cf. Figure 8). In general, the decreases in and ageing of the number of people of employable age presents a challenge for the future economic development of the Baltic Sea states. There are empirical studies which suggest a negative correlation between the age of a labour force and its average productivity - especially in industrial occupations (cf. Skirbekk 2008; Börsch-Supan et al. 2006). This will have a negative impact on the competitiveness of the companies in the Baltic Sea region if steps are not taken to positively influence productivity. Ageing employees require a suitable work environment which includes life-long learning. The diminishing importance of physical strength in working life and the improved health and cognitive abilities of older people leave room for new forms of work organisation. Ongoing training measures, a gradual reduction in working times and flexible wage models are only some of the options for adjusting to a changing demography and benefiting from the experience of older employees.

Change of population by age groups 2010 to 2030



Sources: Eurostat (2010); UN (2010); calculations HWWI.

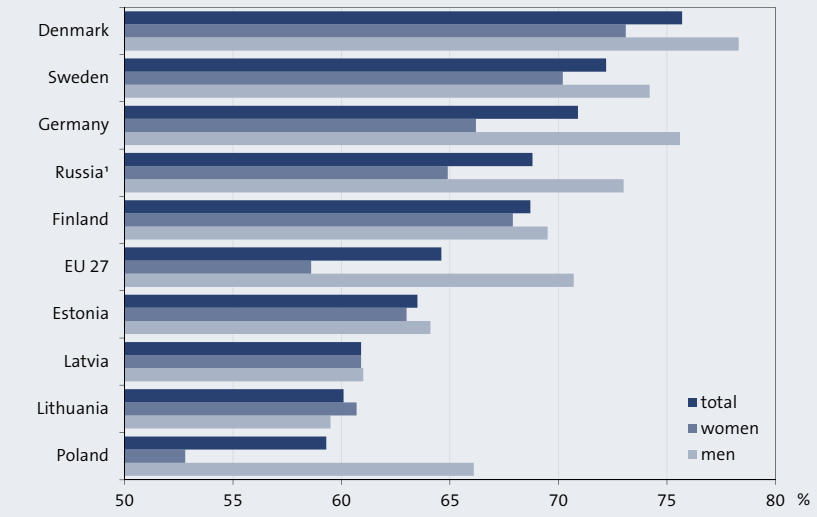
Figure 8

Decelerating the reduction of the labour force

The Baltic Sea states also have options for countering the decrease in available labour force. One central area of action is increasing the participation of people from all age groups in the labour force. The average employment rate lies between 76% in Denmark and 58% in Poland. Therefore, relevant measures at the company and state level are those initiatives which facilitate the compatibility of family and career. There are considerable differences at present in the employment rates for men and women in the individual countries (cf. Figure 9). The Baltic nations are the exception. There is hardly any difference in these countries in the employment rates of men and women. And Lithuania is the only country studied where the employment rate of women, just over 60%, is higher than that of men. The differences in Poland and Germany are quite serious. The employment rate of women is far below that of men.

Commuters demand flexibility

In regard to demographic changes, it should be noted that expanding the cross-border transport infrastructure and making labour markets more flexible promotes more efficient cross-border labour market integration. Commuting across borders opens up the possibility of balancing out the lack of skilled labour and regional mismatch in the labour market. Border commuting furthers the relationship between the individual regions and strengthens the mobility and flexibility of the available labour force in border regions. Improving the recognition of education received abroad is essential for this (cf. Box 3). Because their degrees are not recognised, immigrants from abroad are often employed below their level of qualification, leaving their potential underutilised.



¹ from 2008

Sources: Eurostat (2010); OECD (2010); calculations HWWI.

Figure 9

Labour market integration through border commuting

Although there are still border hindrances between the countries in the Baltic Sea region, some regions have excelled over the last few years through rising commuter numbers. A few worth mentioning include Southern Jutland-Schleswig for Germany and Denmark, the Torne Valley Euroregion between Finland and Sweden, and especially the Öresund (or Øresund) region on the Swedish-Danish border (cf. Baltic Sea Parliamentary Conference 2009). The example of the Öresund region illustrates how overcoming the administrative obstacles and creating transportation links can make a significant contribution to successful cross-border labour market integration (cf. Statistics Denmark 2010). The Öresund Bridge between Copenhagen and Malmö, completed in July 2000, has contributed significantly to labour market integration between Denmark and Sweden.

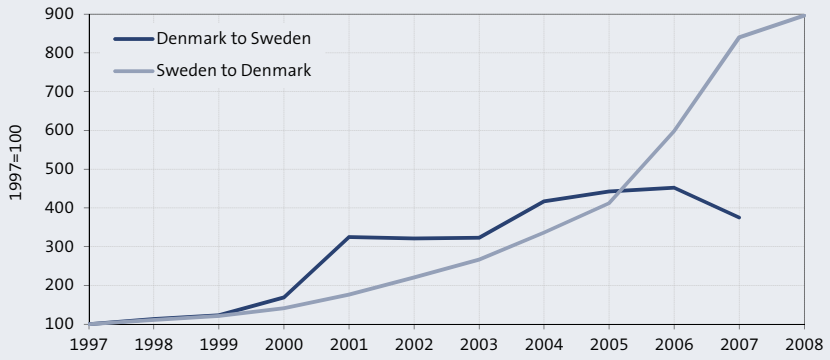
From 1997 and 2008, the number of commuters from Sweden to Denmark increased nearly ninefold (cf. Figure 10). In 2007, about 18,500 people commuted daily between Denmark and Sweden, 96.6% of whom lived in Sweden and worked in Denmark. However, 37% of these commuters were Danish and 40% were Swedish. This is due to the fact that real estate prices in Sweden are much lower than in Denmark. Moreover, the demand for labour and the wage level are higher on the Danish side. The demographic changes will intensify this trend further, because the population on the Danish side of the Öresund region is ageing more quickly. According to Tendens Øresund (2010), the number of commuters in this region will increase to more than 40,000 by 2025.

Box 3

Baltic Education: Promoting cross-border labour market integration

Labour market integration within the EU continues to face border obstacles which hinder the mobility of the labour factor. In addition to the lack of language ability and the cultural differences, one particularly significant obstacle is that there is no cross-border recognition of the vocational education and training of labour migrants. Given the demographic change and the risk of a resulting lack of skilled labour, it is critical for the Baltic Sea region to increase cross-border labour market integration. This is the subject of the Leonardo da Vinci project, "Baltic Education", initiated by the Hanseatic Parliament and co-financed by the EU, created to help improve the conditions for labour migration within the Baltic Sea region and reduce the obstacles to intra-EU mobility. Representing the Baltic Sea region, the cities of Gdańsk, Hamburg, Pori and Vilnius participated in the pilot phase of the project. In cooperation with the HWWI, the Hanseatic Parliament developed the European Credit System for Vocational Education and Training (or ECVET system) for people with professional qualifications in the Baltic Sea region, mainly based on an analysis of essential (core) and additional qualifications and the introduction of virtual "reference occupations", which describe the optimal qualifications for the respective occupation. The group also created rules of procedure for the international recognition of vocational education and training. This model for the mutual recognition of professional qualifications incorporates the diverse educational cultures and occupations within the Baltic Sea region. Vocational training is addressed appropriately in the results described herein; it was not possible to align the content of all vocational general curricula nor was it desirable to make all jobs uniform.

Commuting between Sweden and Denmark from 1997 to 2008[1]



[1] only people from 102 Danish communities and from 33 Swedish communities

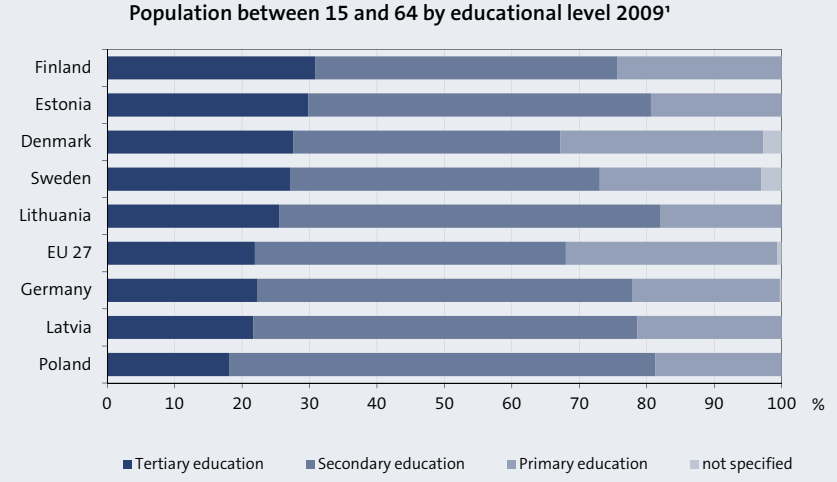
Sources: Statistics Denmark (2010); Ørestats (2010); calculations HWWI.

Figure 10

4 | The Baltic Sea area of innovation

Technological capability is the basis for the ability of the Baltic Sea region to compete

Ensuring its technological capability and power of innovation is an important prerequisite for the Baltic Sea region being able to compete with other regions in the global market in future. The extent of these factors in turn depends, among other things, on the availability of qualified labour and on research and development activities. The number of people with a tertiary education (higher level professional and vocational training, higher level technical schools, universities of applied sciences, universities and colleges) in Denmark, Estonia, Finland, Lithuania and Sweden is higher than the EU average (cf. Figure 11). Between 26% (Lithuania) and 31% (Finland), the level of education is correspondingly high. Among the Baltic Sea states, Poland and the Baltic nations have the greatest proportion of inhabitants which have completed their (upper) secondary education. At 82.1%, Lithuania shows the greatest proportion of inhabitants who have completed either their (upper) secondary education or their post-secondary non-tertiary education (cf. Figure 11).



¹ Data for Russia not available

Sources: Eurostat (2010); calculations HWWI.

Figure 11

Knowledge – a key resource

»Even on the global scale, the Baltic Sea region is an important centre of economic power. Nine per cent of the global gross national product is generated in this region. For the Federal Republic of Germany alone, trade within the Baltic Sea region accounts for 10%, making it more significant than trade with the United States and Japan together.

This economic success is based particularly on the far better than average ability to innovate of the region. With more than 100 universities and research institutes, which are normally very well networked, an area of innovation has been created in the Baltic Sea region of global importance. And the roots of this go way back. Nicolaus Copernicus, Tycho Brahe, Carl von Linné, Immanuel Kant, Søren Kierkegaard, Niels Bohr and many others

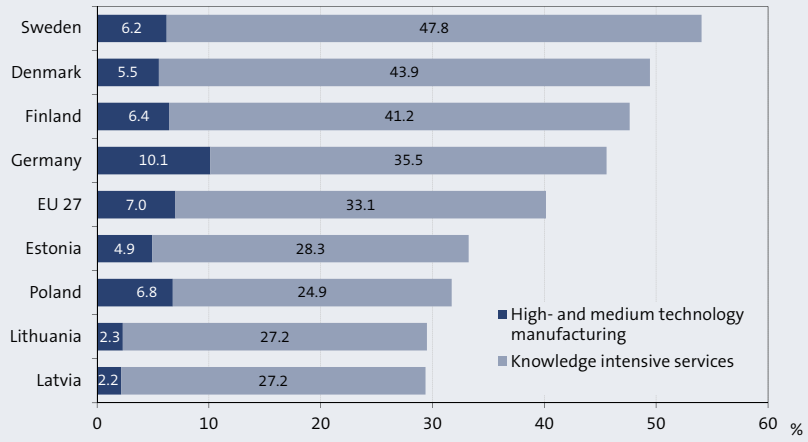
lived and conducted their research in this area, and it is no coincidence that the Nobel Prizes have been awarded there every year since 1901.
If education is the most important resource for innovation, then the Baltic Sea region is in an excellent position for global competition. This was demonstrated by PISA, and every other international study in the last several years has confirmed it, too. The region also benefits from the fact that, ignoring national borders, the feeling of living in a common area of cooperation has permeated it since the times of the Hanseatic League.
The best example of this natural and very successful cooperation is doubtlessly the Øresund region, which has become a healthcare technological centre of global importance. There are also innovation centres in the areas of information technology and nanotechnology. But the classic maritime technologies still hold a special place in the region and, in terms of shipping services, the Baltic Sea region is well positioned to compete with more than just the largest container shipping companies in the world«.

Rainder Steenblock
Former Environment Minster of Schleswig-Holstein
Mr Steenblock represents THE GREENS (party) on the Board of Network European Movement Germany.

Strong potential of well trained skilled labour

The education indicators demonstrate that there is strong potential in well trained people in all Baltic Sea states. The differences between the countries are considerable looking at the level of employment in the knowledge-intensive service industry and the research-intensive industries. These industries are important for adapting innovation and for knowledge-based structural change. The level of employment in these industries in Poland and in the Baltic nations is much lower than, e.g. in Sweden (cf. Figure 12), where it is 54%.

Share of employment in knowledge intensive industries 2008[1]



[1] EU 27, Poland and Sweden 2007; data for Russia not available

Sources: Eurostat (2010); calculations HWWI.

Figure 12

R&D investment in some countries very high ...

These differing conditions for innovation are also reflected in the indicators found in international comparative assessments of innovation. There are four Baltic Sea states among the top 10 countries on the European Innovation Scoreboard: Sweden in second place, Finland in third, Germany in fourth and Denmark in sixth (cf. Table 4). Estonia, which has significantly increased its capacity for research and development (R&D) over the last several years, has already reached 13th place. In contrast, Poland, Lithuania and Latvia are ranked low in the comparison.

Innovation Indicators

	European Innovation Scoreboard[1]	GDP share of R&D-expenditures	Share of R&D-employees at labour forces	Patents per 100.000 inhabitants	Labour force share of HRST[2]
	2009	2008	2007	2007	2009
	Rating	%	%		%
EU 27	-	1,9	1,5	11,7	42,1
Sweden	2	3,8	2,4	29,8	51,2
Finland	3	3,7	3,0	25,1	52,5
Germany	4	2,6	1,7	29,1	47,5
Denmark	6	2,7	2,4	19,4	53
Estonia	13	1,3	1,4	1,7	49,2
Poland	26	0,6	0,7	0,4	36,4
Lithuania	27	0,8	1,2	0,2	45,3
Latvia	30	0,6	0,9	0,8	43,3
Russia	-	1,0	1,1[3]	0,2	-

[1] 33 countries by comparison

[2] Human Resources in Science and Technology

[3] from 2005

Sources: Eurostat (2010); HWWI.

Table 4

... but there is room to catch up in the eastern part of the Baltic Sea region

The order found on the European Innovation Scoreboard basically mirrors the ranking of the countries in regard to the proportion of GDP spent on R&D. This amounts to 3.8% in Sweden, 3.7% in Finland, 2.7% in Denmark and 2.6% in Germany. In Estonia, 1.3% of GDP goes into R&D. In contrast, except for Russia (1%), the other countries in the Baltic Sea region spend less than 1% of GDP on their R&D capacities, a relatively low amount.

It should be positively noted that two EU countries, Sweden and Finland, already put more than 3% of their GDP into R&D. Reaching this amount in all EU countries is one strategic goal of "Europe 2020". The European Council created this strategy in June 2010 with a focus on promoting research and innovation as well as education.

Looking at the R&D investment, regional disparities can be seen in the proportion of employed persons who work in science and technical functions. The differences between the countries in the western and eastern part of the Baltic Sea region in this regard, however, are less than they are for R&D spending.

Successful inventors in the Baltic Sea region

At present, success at innovation varies considerably among the Baltic Sea states (cf. Table 4). Sweden, Finland, Denmark and Germany are among the leading "inventors" in Europe and file more patents than the EU average of 11.7 per 100,000 inhabitants. In contrast, in Russia and the more recent EU countries, as in Estonia, patents play a subordinate role for the development of these countries as areas of innovation.

The "east-west differential" among the Baltic Sea states in terms of capacity for innovation and the contribution from knowledge-based economies to economic development is expected to decrease in future. As part of the catch-up process in the Baltic nations, Poland and Russia, the R&D capacities in these countries will expand and create potential growth momentum. In this regard, these economies will benefit from their proximity to the established knowledge-based economies, such as Finland and Sweden. The transfer of knowledge and information depends on the distances involved. The shorter the geographical distance between countries, the greater their spatial developmental dependencies (cf. Niebuhr 2001). One important factor for the transfer of knowledge – also across national borders – is face-to-face contact and the cross-border mobility of the labour force, which should increase as obstacles to mobility are further eliminated.

Baltic Sea region benefits from face-to-face contact

The proximity of companies and the labour force in the Baltic Sea region also sets up specific conditions for the development of networks and the creation of positive network externalities and cluster effects, which constitute an important prerequisite for knowledge-based growth. Examples of such development potential in the Baltic Sea region are found in the healthcare sector and the design and creative industries. The potential innovation in regard to the environmental technologies and energy supply is also worth noting. Because of their growing economic significance and the strong momentum of innovation, these industries offer a starting point for development in numerous other industries and the creation of jobs. They provide critical stimulus for development in the Baltic Sea area of innovation.

Healthcare industry: cross-border cluster formation

The healthcare sector is becoming increasingly more important around the globe. Some of the driving forces behind this are the increasing life expectancy of the population and the growing demand for healthcare products as incomes rise. There are starting points in every Baltic Sea state for the positive development of this growth market and this means potential for cross-border cluster formation. The significance of this industry specialisation is emphasised, for example, by the Nordisk InnovationsCenter, which the three Baltic nations are also represented in. Cross-border cooperation can also be seen within the scope of Medicon Valley. This is a supra-regional healthcare institution which assists cluster formation across national borders. It stretches across the region around the Danish capital of Copenhagen and the southern Swedish region of Skåne. Altogether, there are more than 300 universities, hospitals and life science companies in Medicon Valley: the biotechnology, medical technology and pharmaceutical industries, clinical research organisations and research on genetically modified organisms. The regional alliance also includes technology parks, investors and other service providers.

To prevent the R&D findings from being limited to Denmark and Sweden, Medicon Valley is linked to ScanBalt, which networks life science and biotechnology clusters across the entire Baltic Sea region.

Networks of leading creative economy locations

Creative and cultural activities, which originate from individual ideas, the capacity for innovation and education, are becoming increasingly more important for economic development. More than in other states, the cities and regions of Denmark, Finland and Sweden have specialised in the creative economy and pursue cluster strategies to promote the creative and experience economy in particular (cf. Danish Government 2003). Numerous initiatives are aimed at promoting specific infrastructure and training skilled labour for this industry. The experience economy stretches beyond the cultural and creative

economy to include the areas of sports, tourism, toys and games and edutainment. Strengthening these industries is one of strategic aims of the Nordic Innovation Council, appointed by the Nordic Council. As part of this initiative, the Nordic countries and the Baltic nations collaborate supra-nationally to develop strategies to promote the experience economy. Among other activities, the Nordic Council awards prizes for literature, music, film and innovation. It can be said that northern Europe has – with political support – become a growing market for the creative economy. Moreover, the Baltic nations are increasingly being integrated into this strategy, for example, through the joint development of a model region for the creative economy. Hamburg also has partnerships in the Baltic Sea region in the realm of the cultural and creative economy. One example is an agreement between the Hanseatic city and the southern Swedish region of Skåne. The goal of this cooperation is to initiate joint, interregional cultural and creative projects.

Innovation potential in renewable energies

The 20% reduction of CO_2 emissions by 2020, as compared to 1990, is one of the primary climate targets of the EU. This will mainly come about through the increasing usage of renewable energies. Sustainable transport, which can help protect the environment, is also an important criterion for choosing the European Green Capitals (cf. Box 4). The climate target is also being pursued by the "Europe 2020" growth strategy and the EU Strategy for the Baltic Sea Region. The Baltic Sea region should become a model region for the environmentally friendly use of energy.

Box 4
European Green Capitals in the Baltic Sea region

The European Commission has been awarding environmentally engaged cities the title of European Green Capital since 2009. The initiative was prompted by the fact that about 73% of people live in cities and these cities are the primary cause of environmental problems such as air and noise pollution. The applications are judged according to eleven criteria: the city's contribution to global climate protection, local mobility and passenger transportation, availability of local public areas, sustainable land use, natural and biological diversity, quality of local ambient air, noise pollution, waste production and management, water consumption, waste water management and environmental management of the local authority. Among the 14 finalists between 2010 and 2013, there have been (or still are) 4 cities in the Baltic Sea region: Copenhagen, Malmö, Stockholm and Hamburg. The first award recipients were cities in the Baltic Sea region: the capital of Sweden, Stockholm, won the title in 2010 and the northern Germany metropolis of Hamburg was named the European Green Capital in 2011 (cf. European Commission 2010c). Stockholm won over the jury with its many-faceted concepts for reducing CO_2 emissions, recycling and creating local recreation areas. Today, 77% of Stockholm residents use the local transport network (cf. European Commission 2010c). Hamburg's application focused on climate-friendly urban development, among other topics. In cooperation with companies in the region, the use of renewable energies in both private households and commercial premises will be increased. There are now 60 wind power stations at 12 locations in and around Hamburg (cf. Bundesverband WindEngerie e. V. 2010). They contribute to the goal of reducing CO_2 emissions by 80% by 2050. Further support should come from

expansion of the local transport network and building more environmentally friendly bicycle stations throughout the entire city (cf. Free and Hanseatic city of Hamburg 2010).

The increase of renewable energies requires innovative solutions and technologically sophisticated developments, so that the expansion of this industry can help strengthen the knowledge base in the Baltic Sea. In this regard, the increased generation of electricity using wind is very interesting for the Baltic Sea region. An overview of the location of the large power plants within the Baltic Sea can be seen in Figure 13. The map shows existing nuclear power plants, coal-fired power plants with capacity of at least 800 megawatts, oil-fired, gas-fired and hydroelectric power plants with capacity of at least 400 megawatts and wind farms with at least 20 wind turbines. Some power plants and wind farms which have been approved and are under construction are also shown.

The Baltic Sea region banks on wind

Although there are still a considerable number of nuclear and coal-fired power plants in the area shown, it can be seen that the future energy supply in the Baltic Sea region will come heavily from renewable energy sources to be planned and constructed. For example, a large wind farm will be built in northern Sweden. The "Blaiken Wind Farm" should go into operation in 2015 and output 300 megawatts using 100 wind turbines, thereby supplying about 30,000 households with energy. This would make the Blaiken Wind Farm the largest onshore wind farm in Sweden and one of the largest in Europe (cf. Skellefteå Kraft AB 2010). Denmark is currently planning to build the world's largest wind farm in Kattegat, which should supply energy to 40,000 households (cf. Federal Foreign Office 2010).

Developing offshore wind turbines in the Baltic Sea is an important concept for the future renewable energy supply of Mecklenburg-Western Pomerania and Schleswig-Holstein. Wind power is used quite extensively to generate electricity on Fehmarn Island (cf. Ministry of Science, Economic Affairs and Transport of Schleswig-Holstein 2010). In 2011, Germany's first offshore wind farm in the Baltic Sea, "Baltic 1", started to operate 16 km north of the Fischland-Darß-Zingst peninsula in May 2011, with 21 wind turbines for a total capacity of 48.3 megawatts. The development of offshore wind energy is proving to be a strong growth driver for the industry, creating new jobs for highly qualified personnel and new career profiles. The research and development and the service and maintenance of offshore wind farms offer potential for the creation of new jobs.

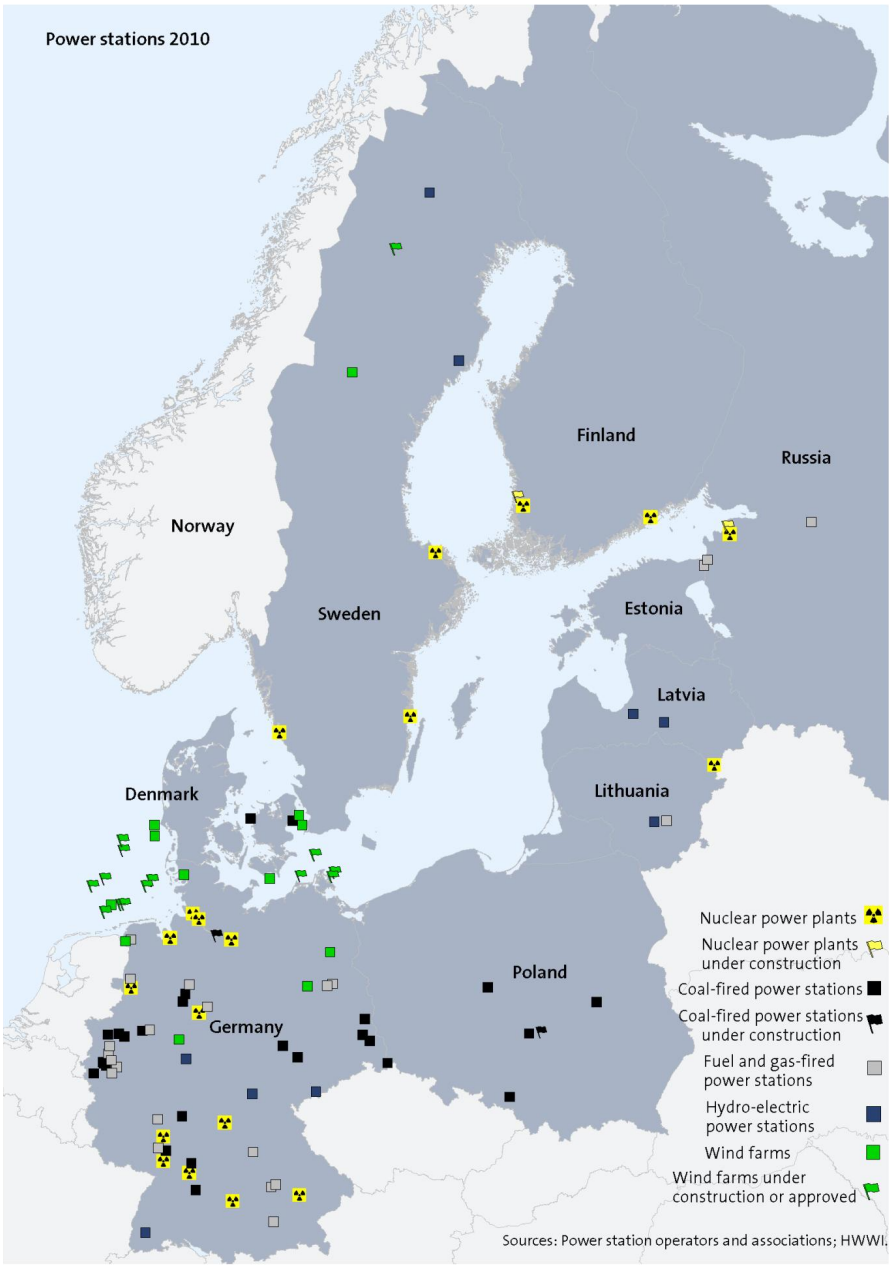

Power stations 2010
Finland
Russia
Norway
Sweden
Estonia
Latvia
Lithuania
Denmark
Poland
Germany
Nuclear power plants
Nuclear power plants under construction
Coal-fired power stations
Coal-fired power stations under construction
Fuel and gas-fired power stations
Hydro-electric power stations
Wind farms
Wind farms under construction or approved
Sources: Power station operators and associations; HWWI.

Figure 13

5 | Cities as initiators for the development of the Baltic Sea region

Urbanisation plays an increasingly important role in the regional development processes in Europe. Whereas only 51.3% of Europeans lived in cities in 1950, this figure jumped to 70.8% by the turn of the millennium. By 2050, about 85% of the people in Europe might live in a city (cf. United Nations 2010). This means that not only social life, but economic activities are increasingly becoming concentrated in the cities – and this is true for the Baltic Sea region as well. Table 5 shows an overview of 25 cities in the Baltic Sea region which, because of their size and settlement structures, will affect the development of their respective regions.

Medium-size cities affect regional structures

Cities in the Baltic Sea area

Country	City	NUTS-3 region	Urban population	NUTS-3 population	Urban pop./ NUTS-3 pop.
			2010	2010	%
Denmark	Aarhus	Østjylland	242 914	826 923	29
Denmark	Copenhagen	Byen København	528 208	678 873	78
Denmark	Odense	Fyn	166 305	484 862	34
Germany	Hamburg	Hamburg	1 774 224	1 774 224	100
Germany	Kiel	Kiel, Kreisfreie Stadt	238 281	238 281	100
Germany	Lübeck	Lübeck, Kreisfreie Stadt	209 818	209 818	100
Germany	Rostock	Rostock, Kreisfreie Stadt	201 442	201 442	100
Estonia	Tallinn	Põhja-Eesti	397 287	552 282	72
Estonia	Tartu	Lõuna-Eesti	98 393	326 583	30
Finland	Helsinki	Uusimaa	583 350	1 423 576	41
Finland	Tampere	Pirkanmaa	211 507	484 436	44
Finland	Turku	Varsinais-Suomi	176 087	462 914	38
Latvia	Daugavpils	Latgale	103 922	339 783	31
Latvia	Riga	Riga	706 413	706 413	100
Lithuania	Kaunas	Kauno (Apskritis)	348 624	348 624	100
Lithuania	Klaipeda	Klaipedos (Apskritis)	182 752	182 752	100
Lithuania	Vilnius	Vilniaus (Apskritis)	548 835	560 192	98
Poland	Bialystok	Białostocki	292 428	504 845	58
Poland	Gdansk	Gdański	451 605	514 420	88
Poland	Szczecin	Szczecin	398 332	406 307	98
Russia	Kaliningrad	Kaliningrad Oblast	293 909	937 914	31
Russia	St. Petersburg	St. Petersburg	4 600 276	4 600 276	100
Sweden	Gothenburg	Västra Götalands län	507 330	1 569 458	32
Sweden	Malmö	Skåne län	293 909	1 231 062	24
Sweden	Stockholm	Stockholms län	829 417	2 019 182	41

Soutces: Central Statistical Bureau Latvia (2010); Central Statistical Office Poland (2010); Federal State Statistics Service of the Russian Federation (2010); Statistics Denmark (2010); Statistics Estonia (2010); Statistics Finland (2010); Statistics Lithuania (2010); Statistics Sweden (2010); Federal Statistical Office (2010); calculations HWWI.

Table 5

The Baltic Sea region mostly features medium-sized cities with between 98,393 (Tartu) and 829,417 inhabitants (Stockholm). The exceptions are Hamburg (1.8 million inhabitants) and St Petersburg (4.6 million), the only two ci-

ties in the Baltic Sea region to exceed the 1-million mark. In spite of their differences in population size, the cities listed in Table 5 are important urban centres for the neighbouring regions, as can be seen in the population figures for the territorial unit. The proportion of the territorial unit represented by the population of the city varies from 24% in Skåne (Malmö) and 78% in the Greater Copenhagen Area. In general, differences in the settlement structures within the Baltic Sea region can be distinguished (cf. Figure 14). For large parts of the Baltic Sea region, the population is concentrated in a few conurbations, whereas other regions – especially in the Baltic nations, Finland and Sweden – are relatively sparsely populated.

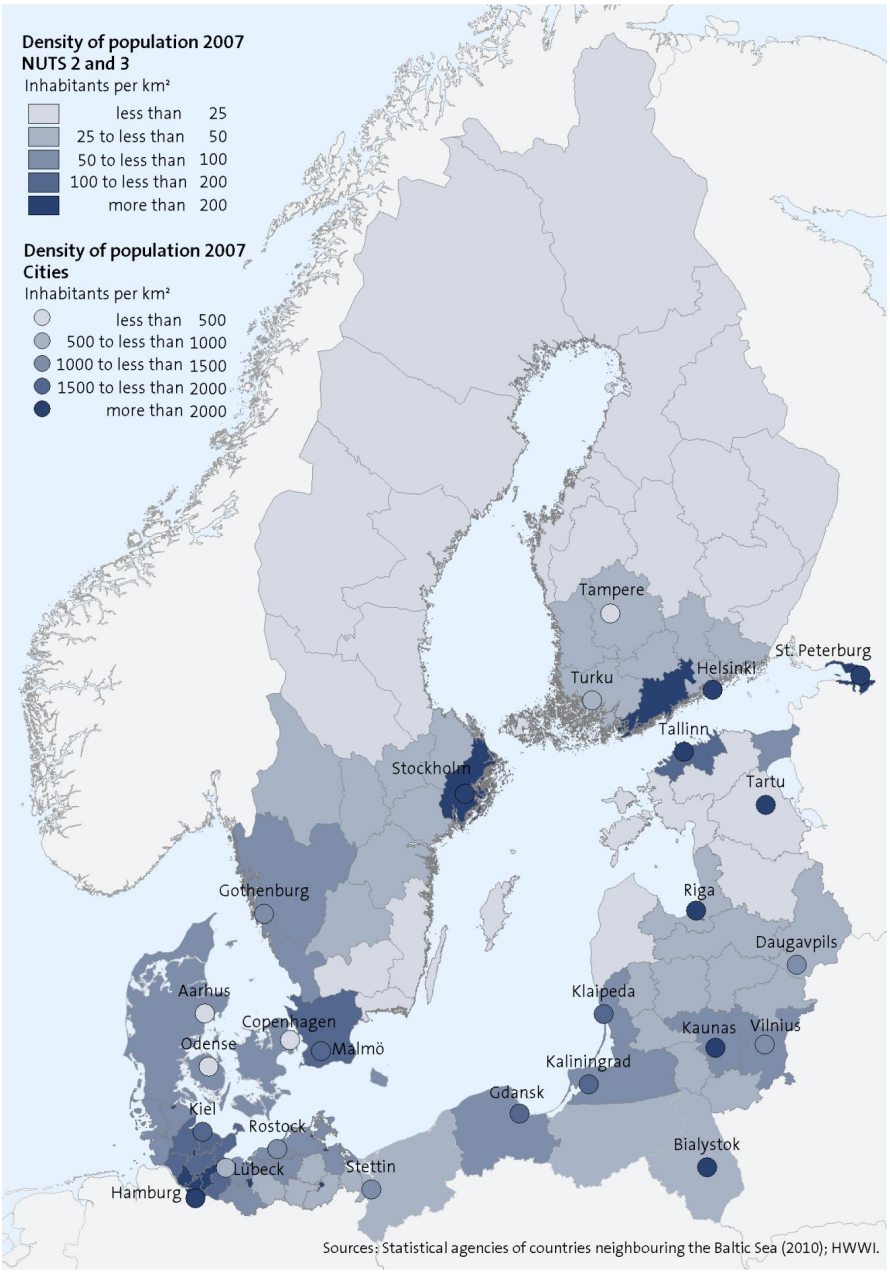


Figure 14

There are exceptions to this regional pattern, where the agglomeration of economic activities and the population stretch out well beyond the city borders. For example, Riga, Copenhagen and Gdańsk are in relatively heavily populated regions, which reinforces their importance as regional development sites. In addition to the high population density in the cities themselves, the

surrounding regions are heavily affected by urban or suburbanisation processes. For example, with 2,812.2 inhabitants per km², the region around Riga is more heavily populated on average than the capital of Latvia (2,353.2 inhabitants per km²). Gdańsk, with 1,844 inhabitants per km², benefits from its cooperation with Gdynia and Sopot to form the Trojmiasto (1,799 inhabitants per km²).

Cities as motors to the development of the Baltic Sea region

»The influence of the nation states has steadily diminished since the end of the Cold War. At the same time, European integration and globalisation advance the importance of cities and regions. Cities throughout Europe are the oldest distinctively European organisms. Whereas the Middle Ages saw the creation and development of today's nation states, leading urban studies researchers believe we are seeing a reversal of this 500-year-old process currently taking place. An open and global economy strengthens cities and regions, rather than nation states, as the decisive parties for creating economic growth, development and innovation.

In other words, cities are the key actors in global governance. Even cities in secluded areas have the possibility to develop by investing in their knowledge society: in science, innovation and universities. And even small and medium-sized cities can be the driving force behind development if they collaborate within networks. The Baltic Sea is the most logical common denominator for small and medium-sized coastal cities around the entire Northern Dimension of Europe. They can all benefit from the strategic proximity and sharing a region, sea travel space and a network with such "focal point" cities around the Baltic Sea as St. Petersburg, Helsinki, Stockholm, Tallinn, Kiel, Copenhagen, Riga, Greifswald and Gdańsk. The Baltic Sea unifies all these cities into a common region: 'Mare Balticum – Mare Nostrum'. This is especially true from the Finnish perspective, since Finland is the farthest away from the heart of Europe and is connected to it geographically only through the Baltic Sea.

Partnerships and networks make the difference for regional development in a globalised world. The cooperation of 106 cities in the Union of the Baltic Cities (UBC) is a good example of a proactive network of cities which can only mobilise the shared potential in their common region for democratic, economic, social, cultural and environmentally sustainable development by working together«.

Arto Juhani Aniluoto

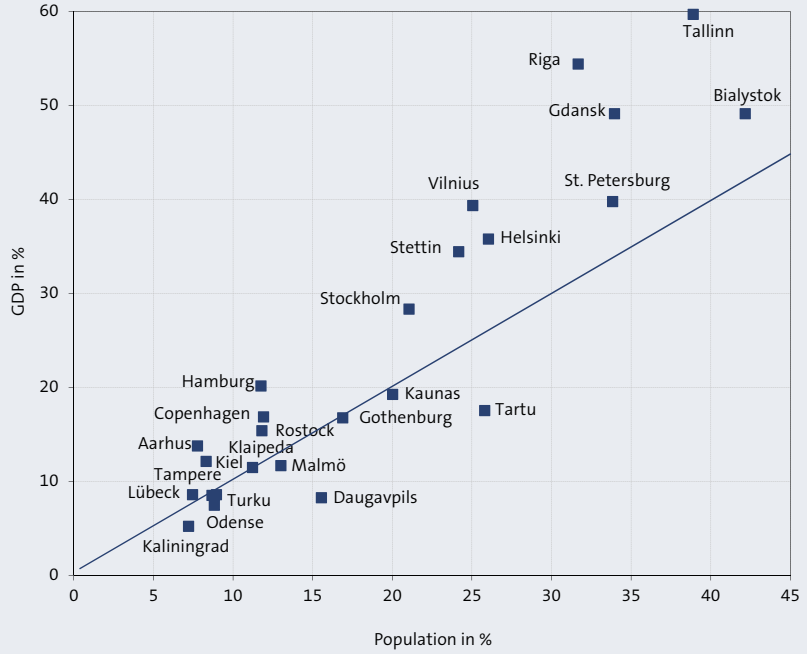
M. Soc. Sc., General Secretary of the European Movement Finland

It is the economic and geographic circumstances which increase the significance of urban centres as the driving forces behind regional development. Successful cities which have a positive influence on their surrounding countryside are, because of this supra-regional importance, key factors in tapping into the growth potential of the Baltic Sea region. In large parts of the Baltic Sea region, the population and production are concentrated in a few cities (cf. Figure 15). This is particularly true of the Baltic nations, with 25% of the national population living in Vilnius, 31.7% in Riga and 38.9% in Tallinn. Furthermore, most of these cities have higher than average GDP per capita: Their proportion of the national GDP exceeds their proportion of the population and they generate a significant part of the GDP of the Baltic nations, ranging from 39.7% (Vilnius) to well over 50% (54.4% in Riga and 59.7% in Tallinn). Cities are therefore an important factor for the development of their entire economies.

Baltic Sea cities are the economic centres of their regions

The cities of Poland are also exceedingly important for the regional economic development processes in their voivodeships. They generate between around one-half (Gdańsk) and one-third (Stettin) of the GDP in their respective province and, at the same time, are home to most of the population in their region. The Finnish capital of Helsinki and its surrounding countryside also rank among this list of economic living centres of the Baltic Sea states. At 26%, one-fourth of the national population lives there and 35.8% of the Finnish GDP is produced there. The proportion of the population of Schleswig-Holstein concentrated in Lübeck and Kiel comes to 7.5% and 8.3%, while they account for 8.6% and 12.2% of the GDP respectively. About 20% of the GDP of northern Germany (Bremen, Hamburg, Mecklenburg-Western Pomerania, Lower Saxony and Schleswig-Holstein) is produced in Hamburg, while about 20% of the population of these federal states combined live there.

Proportion of the cities[1] GDP and population compared to the respective country



[1] When this study was finalized, Eurostat only provided data for all countries until 2007. Data refer to NUTS-3 level, exceptional Kaliningrad (NUTS-2) and St. Petersburg (city level). Respective GDP shares refer for German cities to Federal States and for Hamburg to Northern Germany (i.e. Bremen, Hamburg, Mecklenburg-West Pomerania), Lower Saxony, Schleswig-Holstein); for Polish Cities to voivodships.

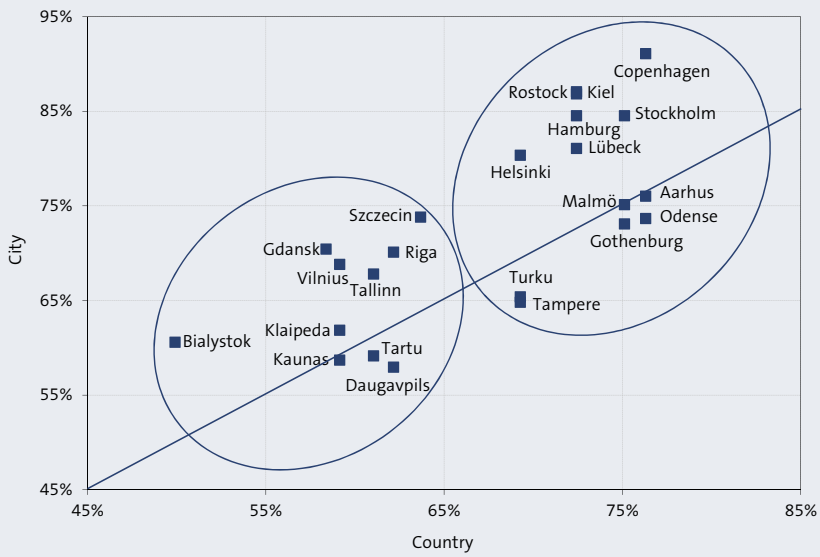
Sources: Eurostat (2010); OECD (2010); Federal State Statistics Service of the Russian Federation (2010); calculations HWWI.

Figure 15

The knowledge-based structural change in particular will influence the future development of cities in the Baltic Sea region. Looking ahead, labour-intensive, "dirty" industries will vanish more and more from the urban landscape, while knowledge-intensive services, such as architectural and engineering firms, advertising, media and cultural industries, business consultants and research-intensive industries are on the path to growth (cf. Blech et al. 2008).

Jobs arising from knowledge-based structural change

At present, the progress of this structural change varies among the cities in the Baltic Sea region, which means the future adjustments required of the economic structures there will differ (cf. Figure 16). Cities where services still play a subordinate role are found in the eastern part of the Baltic Sea region, while the service sector is quite well developed in the other cities. Between 64.8% (Tampere) and 91.1% (Copenhagen) of the jobs there are in the service sector. With few exceptions, the cities are more strongly specialised on services than their respective countries and represent national and regional service metropolises. In comparison to the rural regions, the cities in the Baltic Sea region offer more attractive locational conditions for businesses and employees within the knowledge-based economy. The level of qualification among the population and labour force in urban centres is higher and the educational and research facilities and universities are concentrated there. Figure 17 shows the location of regular universities and universities of applied sciences within the Baltic Sea region and the number of students in each region.



¹ NUTS-3 layer; data for Russia not available

Sources: Eurostat (2010); calculations HWWI.

Figure 16

Dynamic cities in the Baltic Sea region are magnets for the labour force

Because of the locational advantages for knowledge-intensive services and research-intensive industries, the increasing importance of knowledge-intensive industries tends to reinforce the significance of cities as initiators for regional growth. In addition, the proximity of companies in cities supports the exchange of knowledge and experience between people, which has a positive impact on innovations and the further development of technologies. Moreover, the decisions of companies and the labour force regarding where to settle

influence each other. The labour force chooses where to live and work. The availability of a qualified labour force is a relevant factor for companies deciding where to set up business. Thus, demographic and economic developments often go hand in hand. Economically successful cities attract labour, which has a positive influence on their potential for further development.

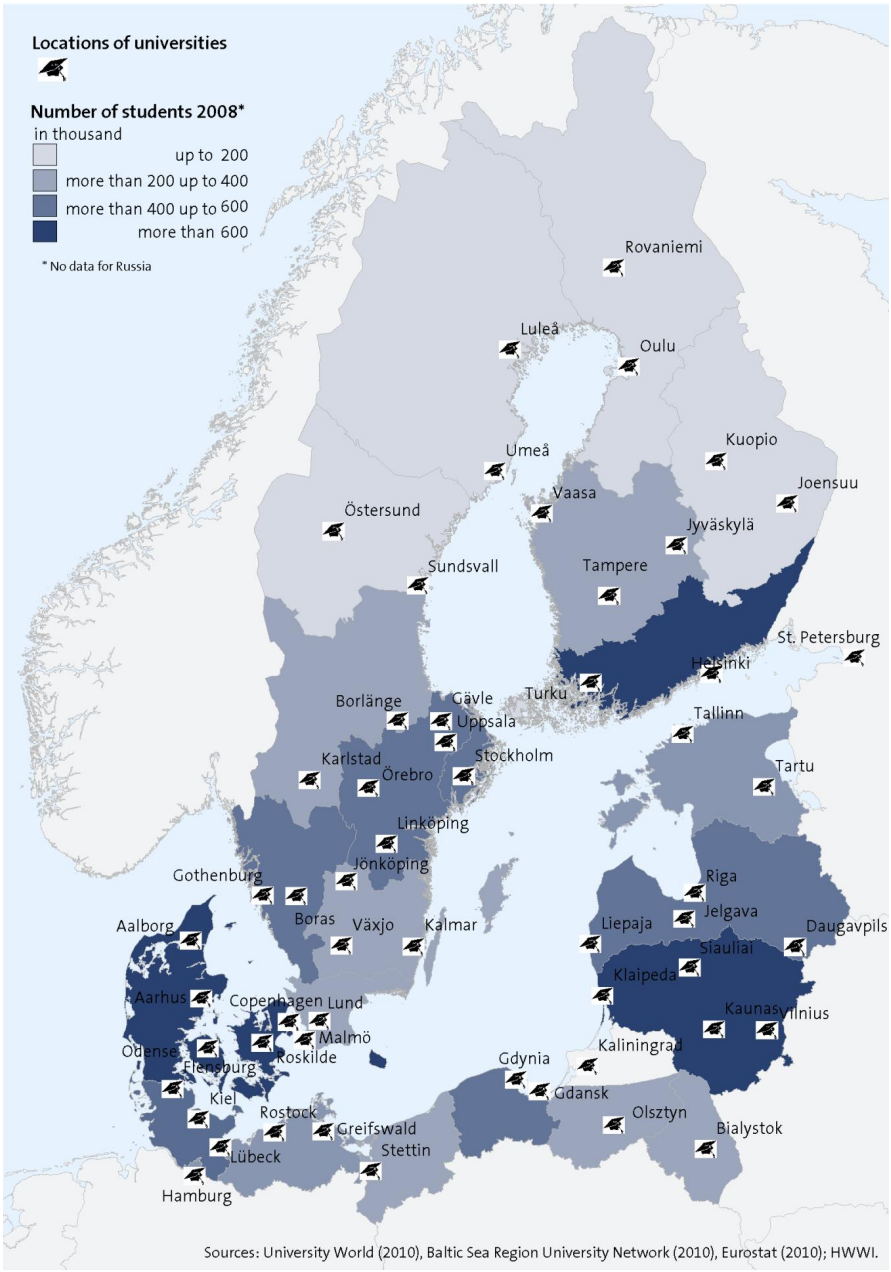


Figure 17

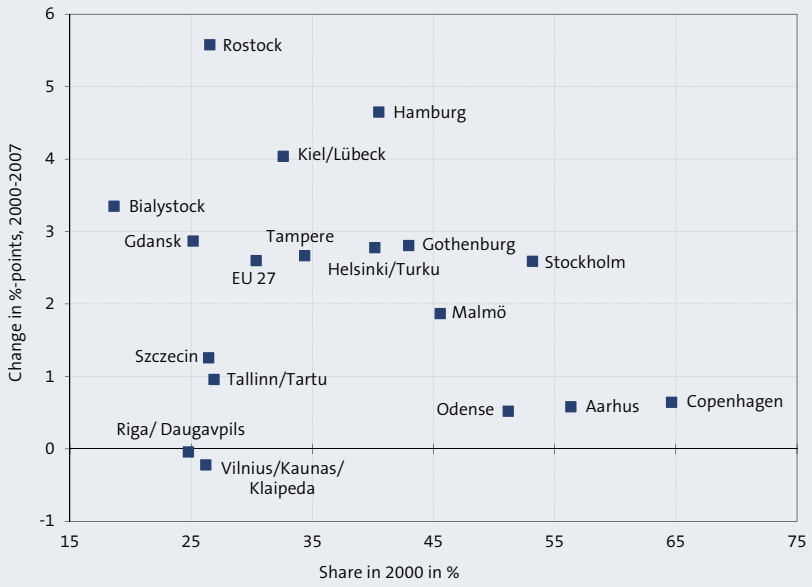
Knowledge-intensive services on the path to growth

Figure 18 shows the proportion of people working in knowledge-intensive services and how this has changed since the turn of the millennium, which is an indicator of the momentum of regional structural change. The cities of Denmark, Sweden and Finland show the most progress in specialising in knowledge-intensive services; in 2000 their specialisation had already reached 40% to 65% and it has continued to rise since then. The position of Hamburg should also be noted, with its proportion of 40.4% in 2000 and growth of 4.7 percentage points by 2007.

Cities successfully handling structural change

The fact that nearly all cities are successfully managing their structural change is positive for the development of the knowledge base in the Baltic Sea

Share of employees in knowledge intensive services 2000, Employment growth of knowledge intensive services 2000 and 2007[1]



[1] NUTS-2 level; Poland 2004 to 2007; Denmark: NUTS-3 level, 2001 to 2007

Sources: Eurostat (2010); Statistics Denmark (2010); calculations HWWI.

Figure 18

region. The German cities are reporting the greatest progress in this regard. In addition to Kiel and Lübeck (+4.0 percentage points each), positive development tendencies can be seen in Rostock, with an increase of 5.6 percentage points, though the Hanseatic city began from a relatively low level. Overall, the cities in the Baltic Sea region are observably in the catching up process. In the recent past, cities with well advanced knowledge-based economies, such as Malmö, Odense, Stockholm, Århus and Copenhagen, are reporting less growth in regard to their knowledge-intensive services than numerous other cities.

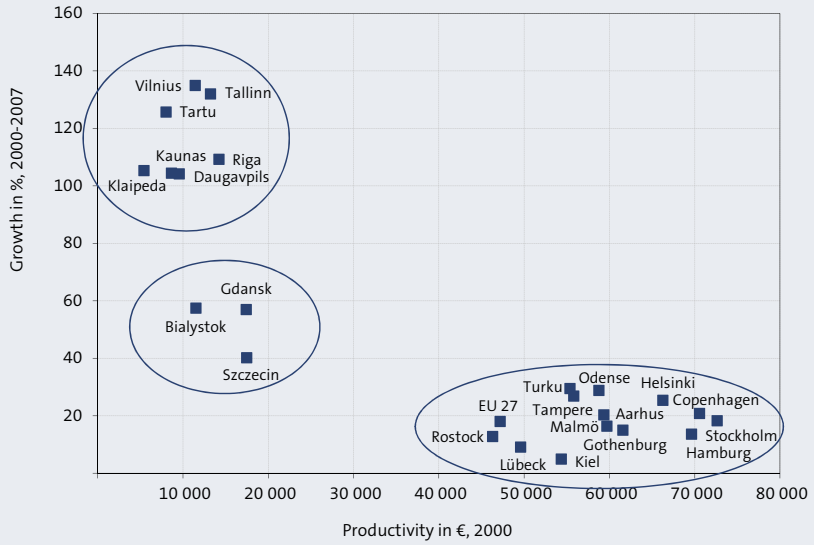
Productivity on the growth track

One indicator of the progress of technological capability is the development productivity, as measured by GDP per worker. In accordance with specialisation patterns and economic histories, the productivity among the cities in the Baltic Sea region varies greatly (cf. Figure 19). But all cities in the Baltic Sea region are perceptibly growing. At the start of the millennium, the productivity of Russia was very low, but it has risen between 2000 and 2007 by more than 300% (cf. Federal State Statistics Service Russia 2010). Both Kaliningrad (EUR 8,071) and St Petersburg (EUR 11,779) were well behind the productivity of other cities observed in 2007 and behind the EU average of EUR 47,174.

The integration processes in the most recent Member States in the EU have caught up considerably in comparison to other EU Member States. Between 2000 and 2007, the cities in the Baltic nations posted productivity growths of 104.2% (Klaipéda) to 135.1% (Vilnius). This is an indicator of the increasing technological capability of the Baltic economies. The cities in Poland also managed to improve productivity by 57.5% in Białystok, 57.1% in Gdańsk and 40.3% in Stettin. In Denmark, Finland, Germany and Sweden, productivity increased much less, but the cities in these countries already generated more than EUR 45,000 per worker in 2000. The front runner is Stockholm, with productivity of EUR 85,900 (2007) and productivity growth of 18.3% in the period from 2000 to 2007. This makes the cities in the western Baltic Sea states up to

seven times more productive than Daugavpils, which, at EUR 11,123 per capita, is the least productive city in the EU Baltic Sea states. One point which is positive for the momentum of development in the Baltic Sea region is the fact that significant catch-up processes can be observed in the cities of the most recent Member States to join the EU. These are supported by, in some cases, very dynamic structural change and the ongoing growth of productivity.

Productivity in 2000 and productivity growth from 2000 to 2007[1]



[1] NUTS-3 level. The data for EU apply to the years 2002 to 2007. The data for Kaliningrad and St. Petersburg are not displayed.

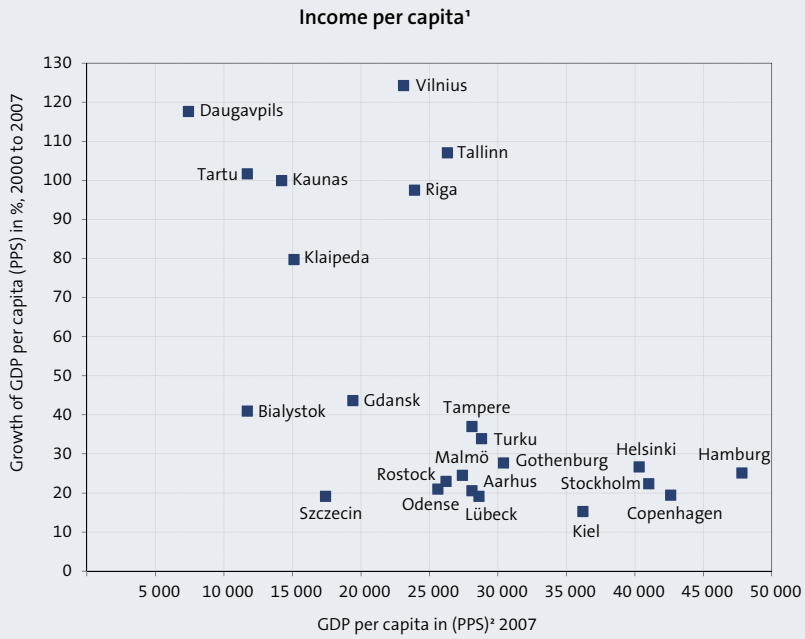
Sources: Eurostat (2010); calculations HWWI.

Figure 19

Catch-up processes in the Baltic Sea region

In general, economic convergence among the regions, especially in terms of per capital income, is a priority of EU regional policy. This catch-up process also depends on the ability of these regions to adjust to structural change. Figure 20 illustrates how this development can already be seen in the cities in the Baltic Sea region under observation. Cities with a relatively high per capital income reported lower growth rates in the period from 2000 to 2007. Overall, the differences in per capita income are still considerable. It stands between 7,400 purchasing power standards (PPS) in Daugavpils and 47,800 PPS in Hamburg.

Given their economic attractiveness, the urban locational factors and the manifold job opportunities, numerous cities in the Baltic Sea region increasingly draw inhabitants and companies, which further strengthens their agglomeration advantages. Consequently, self-energising regional growth processes may arise, during the course of which the importance of cities as centres of economic power increases, which exacerbates regional disparities. In addition to their economic potential, cities benefit here from their cultural attractiveness and their recreational offering, which has a decisive influence on life quality. The European Commission has been giving further incentive for cities to improve their cultural drawing power since 1985 by awarding them the title of "European Capital of Culture" (cf. Box 5).



¹ NUTS-3 level; Danish cities: NUTS-2 level

² Purchasing Power Standard (PPS) is a virtual currency unit which eliminates diffenrent price levels between countries (Definition, Eurostat).

Sources: Eurostat (2010); Statistics Denmark (2010); calculations HWWI.

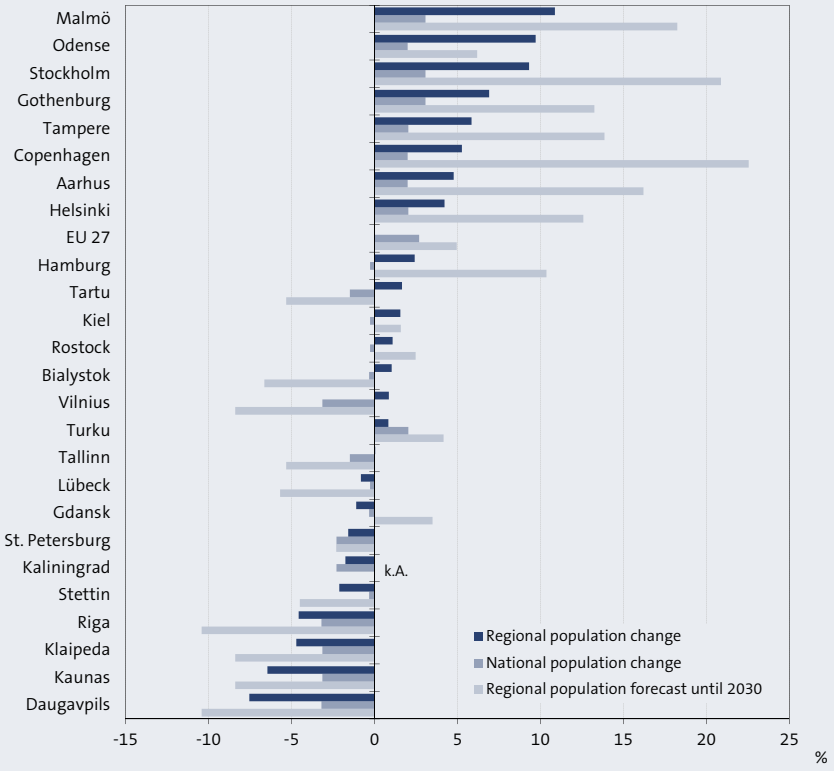
Figure 20

Demographic trends in the Baltic Sea region (cf. Chapter 3) also exert critical influence on the development of cities. A plentiful offering of qualified labour is fundamental for cities to be able to benefit from the potentials of knowledge-based structural change in future. Immigration from other regions is important for this condition. Therefore, the cities in the Baltic Sea region are facing the challenge to position themselves as attractive places to live and work in order to successfully compete regionally and internationally for qualified labour in future. The concentration of specialised labour in specific industries is simultaneously an important requirement for being able to reach the "critical mass" necessary for cluster formation in cities.

Since numerous cities benefit from immigration, their populations are developing more dynamically than the Baltic Sea states overall (cf. Figure 21). This is especially true for the cities in Sweden, Denmark and Finland. The front runner here is the city of Malmö, which grew by 10.9% between 2002 and 2008. It is followed by Odense (9.7%), Stockholm (9.3%), Gothenburg (6.9%), Tampere (5.9%), Copenhagen (5.3%), Århus (4.8%) and Helsinki (4.2%).

In most cases, the regional population is growing in line with the national population. For example, the population in the most recent EU Member States and in Russia is shrinking. However, Hamburg, Kiel and Rostock are growing while the German population overall is shrinking. Another city whose population growth deviates from the national figure is Tartu, which has grown by 1.7% while the population of Estonia has shrunk by 1.5%. The greatest loss is reported by the Latvian city of Daugavpils, whose population shrank by -7.5%.

Population growth from 2002 to 2008 and population forecast[1]



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

Sources: Statistical Offices of neighbouring countries to Baltic Sea; calculations HWWI.

Figure 21

Forecasts suggest that most of the numbers shown will not change before 2030. In particular, the cities of Eastern Europe are losing inhabitants, while the regions of Denmark, Finland, Germany and Sweden show favourable demographic forecasts. Eurostat projects that the populations of these cities will grow at a rate of 2.5% (Rostock) to 22.5% (Copenhagen). One exception here is the city of Lübeck, whose population is estimated to decline by -5.7%. The projected trend is also negative for the Russian cities of Kaliningrad (-1.8%) and St Petersburg (1.6%), as well as the national population (-2.3%).

Ensuring the future viability of the cities in the Baltic Sea region

Given the pivotal importance of cities for the socio-economic development in the Baltic Sea region, their sustainability is critical to ensure the competitiveness of the entire region. Development in the rural regions can also benefit from the dynamic cities, which have a positive impact on the development of their surrounding countryside. The future of the Baltic Sea region therefore depends greatly on the solutions chosen by urban centres to face demographic challenges, to adapt to knowledge-based structural change, and to integrate themselves into the global economy. Such trends bring challenges, but they also offer opportunities and further potential. The countries in the Baltic Sea region could benefit from these trends in future. Strategic collaboration between people and the common pursuit of socio-economic strategies which reflect the regional relationships and the particular features of the region are important prerequisites for this to happen.

Box 5
Capitals of Culture: Prestige objects for the Baltic Sea region

So far, 40 cities have been designated the European Capital of Culture for their positive contributions to the coexistence of European cultures, to promoting understanding of the cultural diversity in Europe and to fostering the feeling of European citizenship. Connecting the cultures of Europe and reinforcing the cross-border, cultural cooperation are of central importance for making progress in the process of European integration. This is now also expressed by the fact that, since 2009, cities can pair up, one from an older Member State and one from a newer one - to jointly apply for the title. The Capitals of Culture should highlight the diversity of European cultures while also bringing the citizens of Europe into contact with the culture of the award winner. The diversity of locals, migrants and tourists, which distinguishes every Capital of Culture, should help set up multifaceted social networks. In this regard, a Capital of Culture has the potential for long-term cultural, social and economic benefit. A survey among the people in charge in the last years found that 80% of them felt that the experience had a positive influence on urban development and the life quality of its citizens. In addition, being designated a Capital of Culture made the city known throughout Europe and put it in the public awareness. This is also the case for the cities in the Baltic Sea region, as Turku and Tallinn are the Capitals of Culture in 2011. Furthermore, the award will go to the Swedish-Latvian pairing of Umeå and Riga in 2014. In the recent past, the Lithuanian capital of Vilnius was also designated together with Linz for the year 2009 (cf. European Commission 2010d).

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