STATE OF THE REGION REPORT 2004

An Assessment of Competitiveness in the Baltic Sea Region

Dr. Christian Ketels and Professor Örjan Sölvell

VINNOVA

STOCKHOLM SCHOOL OF ECONOMICS
HANDELSHÖGSKOLAN I STOCKHOLM
Institute of International Business

Baltic Development Forum

The State of the Region Report 2004

An Assessment of Competitiveness in the Baltic Sea Region

Prepared for
VINNOVA and the Baltic Development Forum (BDF)

by

Dr. Christian Ketels[*] *and Professor Örjan Sölvell*[**]

[*] Institute for Strategy and Competitiveness, Harvard Business School and Stockholm School of Economics, Institute of International Business (cketels@hbs.edu)
[**] Stockholm School of Economics (Orjan.Solvell@hhs.se)

The authors would like to thank the Institute for Strategy and Competitiveness, Harvard Business School, and the World Economic Forum for giving us access to their data. We would also like to thank Elisabeth Bager and Josef Skoldeberg for excellent research assistance.

Executive Summary

Profile

- The Baltic Sea region continues to be dominated by the Nordic countries; eastern shore countries still account for only 10% of the regional economy, and Germany, Poland, and Russia all have their economic centers of gravity outside the region

Performance

- The Baltic Sea region has in recent years outperformed European peer regions (British Isles, Iberian Peninsula, and Central Europe) on key performance measures such as prosperity growth, labor productivity growth, and scientific innovation
- GDP growth has, however, not been exceptional, prosperity is only at or below the level of peer regions, higher labor input - not higher labor productivity as often assumed - is the region's key advantage, and the strong innovation performance is strongly dependent on a core group of mainly Swedish multinationals

The differences across the sub-regions of the Baltic Sea region are high, and higher than in peer regions. The sub-regions differ not only in overall performance but also in the pattern of underlying performance drivers

Cluster composition

- The Baltic Sea region – more specifically the part of its economy that competes internationally - is relatively specialized in goods, not services. It has strong positions in forest products, telecom products, oil & gas, and health care
- The sub-regions around the Baltic Sea differ significantly in their cluster specialization. Some overlap exists, however, between the Baltic and the Nordic countries and, in other clusters, between the Baltic countries and Poland

Business Environment Quality

- The Baltic Sea Region leads European peer regions in the World Economic Forum's Business Competitiveness Index. The business environments across the Baltic Sea Region exhibit strong heterogeneity, even among countries of similar prosperity
- Key strengths are a strong physical infrastructure, a skilled labor force, low levels of corruption, strong clusters, demanding regulations, a strong science system, and companies competing on innovation and uniqueness. Key weaknesses are low levels of local rivalry, distortive subsidies, bureaucracy, and high taxes, especially on labor, that curb incentives

Implications for regional cooperation

- Regional cooperation always requires an active choice for action; it is never an automatic process. This report outlines the opportunities for Baltic Sea regional cooperation on three levels, differentiated by increasing needs for regional coordination
    - Least ambitious is a loose combination of networks and bilateral/regional contacts to inform policy choices that remain entirely national or sub-national. This Report provides data about priority areas for individual countries in which they could profit from cooperation
    - More coordination is needed in policy areas with positive spillovers across national borders, such as cluster development, physical infrastructure, border control, environment, etc. Such spillovers tend to be limited to neighboring countries or sub-regions, and efforts in these areas should be structured accordingly. This Report provides guidance to identify where such cooperation is promising
    - Most ambitious is the attempt to mobilize a region with an integrated strategy to achieve common goals such as FDI attraction, policy initiatives within the EU, etc. This requires, an open discussion of the characteristics that the entire region shares. The Report points out potential directions for such a strategy

Table of Contents

Introduction

Regional cooperation needs a strategic rationale – now more than ever. Without a clear strategic direction on what needs to be done jointly in the Baltic Sea Region and why, regional cooperation can easily loose traction and support from the business community.

The Baltic Sea Region entering a new era The Baltic Sea Region – stretching from Russia in the East to Norway in the West, from Germany and Poland in the South to Sweden and Finland in the North – is entering a new stage of its economic development. With the accession of Poland, Lithuania, Latvia, and Estonia to the European Union, all countries except Russia and Norway are now part of one integrated economic area, subject to common rules and regulations in many areas. The new EU members in the Baltic Sea Region are moving out of transition into their next stage of economic development as young but established market economies. And regional cooperation is shifting from western countries providing support to their eastern neighbors to a more balanced give-and-take where both sides invest to achieve joint economic returns.

While this new stage of development offers new opportunities and in many ways is a confirmation of past achievements, it also requires a review of the existing models and means of regional cooperation. The enthusiasm that fueled regional cooperation throughout the 1990s was well founded. But to keep the interest and imagination of the region and its business community, a new mission and strategy for regional cooperation is critical. This new strategy can build on the work and the institutions and networks created in the last decade but will have to make a strong case for why regional cooperation continues to provide benefits to everyone involved.

Regional cooperation and competitiveness Regional cooperation between neighboring countries can be a strong positive force to improve their competitiveness. Competitiveness, the microeconomic conditions that drive sustainable prosperity by affecting the level of productivity and innovation companies can reach at a given location, is influenced by decisions made at all geographic levels. Regional cooperation is no substitute for sound policies and business decisions on the national and sub-national level. But it can increase the quality and impact of such actions, and provide an additional policy lever.

Regional cooperation can be associated with different levels of integration between countries. At the first level, countries aim to learn from their respective experiences without any explicit coordination or joint decision-making. In the Baltic Sea Region, this has been the dominant model to help countries on the eastern shore to quickly modernize; it has also been used among the Nordic countries. At the second level, countries go further to coordinate policies with spillover effects across national borders. In the Baltic Sea Region, efforts on transportation, border control, energy, and environmental protection are examples of such cooperation. At the third level, countries even start acting jointly in areas where only a common voice has the potential of being heard outside the region. We see clear potential for the Baltic Sea Region to position itself through such actions towards international investors, the European Commission, and other global entities.

The State of the Region Report and beyond Effective regional cooperation needs to grow out of an in-depth assessment of where we are as a region. Only then can we find out what needs to be done, and which of these activities should be approached together. The State of the Region-Report aims to provide such an assessment for the Baltic Sea Region. It looks at where the Region stands in terms of economic performance, cluster composition, and the relative strengths and weaknesses as a business location. The Report is not an evaluation of the short-term, macroeconomic situation in the Region; financial institutions serving the economies around the Baltic Sea provide excellent coverage of these issues. Instead, the Report provides an assessment of the Region's microeconomic fundamentals that are critical for the sustainable long-term prosperity it can support.

The current first issue of the State of the Region-Report has been prepared for the 2004 BDF Annual Meeting in Hamburg, September 12-14. The second issue, including more in-depth analysis, will be presented at the 2005 BDF Annual Meeting in Stockholm. The Report is part of an invitation to political and business leaders in the Region to get engaged in an effort to move from analysis to action. How the Region wants to position itself in the global economy, and which actions need to be prioritized to reach that goal, are decisions that only a group of such leaders can take. As independent researchers we aim to initiate a fact-driven dialogue on these issues and provide an effective conceptual structure for discussion and decision-making. In our experience elsewhere, the existence of structured data and analysis alone can transform the nature of the competitiveness debate. We hope this will be the case here as well.

Setting the stage: The definition of the Baltic Sea Region in this report

For the purpose of this assessment, we have defined the Baltic Sea Region to include the Baltic countries (Estonia, Latvia, and Lithuania), the Nordic countries (Denmark, Finland, Norway, and Sweden), northern Germany (Hansestadt Hamburg, Mecklenburg-Vorpommern, and Schleswig-Holstein), northern Poland (Pomorskie, Warminsko-Mazurskie, and Zachodnio-Pomorskie), and Russia's Northwestern region. The exact boundaries, especially in terms of the inclusion of more German and Polish regions, are somewhat arbitrary. For the 2004 report we have decided to stay with the most narrow selection of sub national regions clearly linked with the rest of the Baltic Sea Region.

The Baltic Sea Region shares many historical ties, symbolized by the legacy of the Hanse around the Baltic Sea. In the decades preceding the 1990s, however, membership to different political and economic blocks and organization had put the parts of the Region on different trajectories, both in terms of their economy and their identity. The Region of course also shares location. Given its overall geographic size the Region is relatively sparsely populated. Distances across the Region are significant. Most of the Region's cities do not match the size of the leading metropolises around the world. St. Petersburg and Hamburg, the largest cities, are located in countries that only in parts belong to the Baltic Sea Region. The Region is located at the periphery of Europe's traditional focal points of economic activity, and it is connected through the Baltic Sea, not a central land area. Both history and location are constants that any effort to create an effective strategy for economic collaboration across the Region has to take into account.

The Baltic Sea Region is home to about 60m people and generates a total GDP of close to 1 100 bn; about 3.5% of world GDP. The Nordic countries dominate with more than 40% of the region's population and 75% of its GDP. Northwestern Russia accounts for more than 25% of population but less than 5% of GDP. The Baltic States and northern Poland each account for about 10% of the population and 2-3% of GDP. Northern Germany accounts for the remaining roughly 10% of population and 15% of GDP. These figures alone indicate the huge differences across the region, especially between the western and eastern shore. This is a topic that we will analyze in more detail throughout the Report.

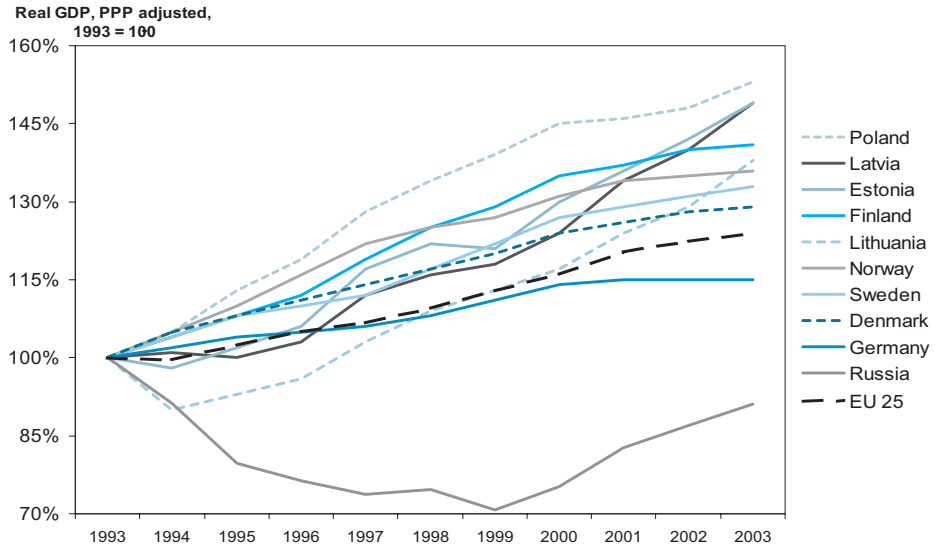
For comparison, we have defined three European peer regions. These regions are chosen to allow the reader to set the data about the Baltic Sea Region into context, not so much because these regions are direct competitors or in some way equivalent to this Region. The Central European Region of Austria, southeast Germany (Bavaria, Saxony, and Thuringia), the Czech Republic, Hungary, Slovenia, Slovakia, and southern Poland (five regions) has a population of about 70m and a combined GDP of close to 1 000 bn. The British Isles, Ireland and the United Kingdom, have 64m inhabitants and with 1 720 bn the highest GDP of the four regions. The Iberian Peninsula has the smallest population with 50m and has a GDP of 875 bn.

The Economic performance of the Baltic Sea Region

- The Baltic Sea Region has registered the strongest prosperity, labor productivity, and innovation growth of the selected four European peer regions in recent years
- The current level of performance, however, is only on par or even below the level reached by these peer regions
- The key driver of current prosperity in the Baltic Sea Region is high labor utilization, not labor productivity as widely assumed
- The Baltic Sea Region scores high on measures of innovation; it leads on scientific innovation but registers only average economic benefits from innovation
- The heterogeneity in performance and performance drivers across the Baltic Sea Regions is significant and higher than in the selected peer regions

The ultimate measure of economic performance is a high and sustainable level of prosperity, here measured by GDP per capita adjusted by domestic purchasing power. In an accounting sense prosperity can be decomposed into three factors: labor productivity (real GDP per hour worked), labor utilization (hours worked per capita), and domestic purchasing power of income (PPP adjustment factor). Over time, productivity and thus prosperity is driven by the level of innovation; especially important in advanced economies such as the Nordic countries and Germany.

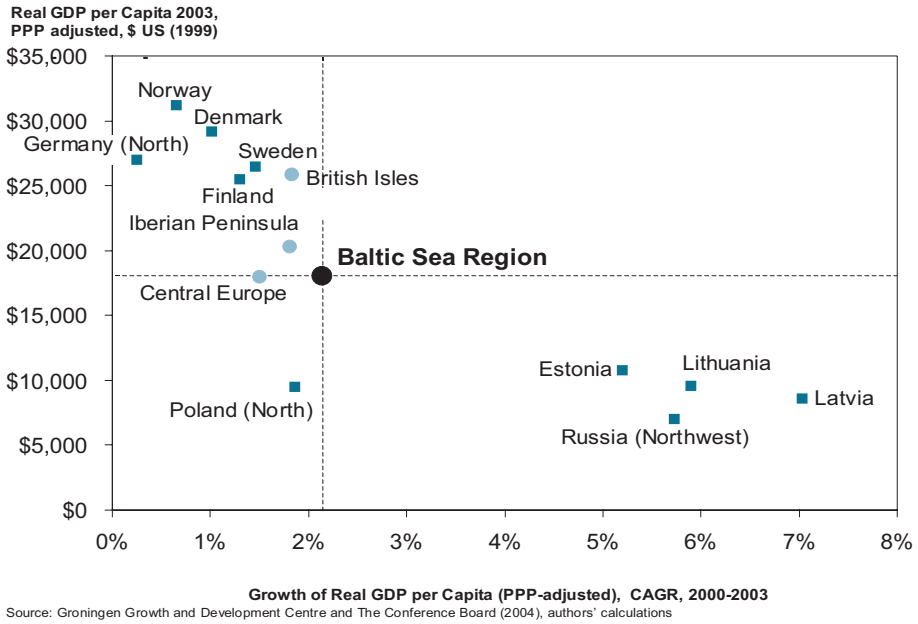
Figure 1: Growth of real gross domestic product (GDP), Baltic Sea Region countries



Source: Groningen Growth and Development Centre and The Conference Board (2004), EIU (2004), authors' calculations

Current prosperity and its drivers The Baltic Sea Region has reported the highest recent prosperity growth of the four European regions selected. It has also outperformed the EU-15 and EU-25 in terms of real GDP growth; only Germany and Russia fell below that benchmark over the last decade. The Region's prosperity level in 2003 was slightly ahead of the Central European Region, lagging the Iberian Peninsula by 10% and the British Isles by 30%. Despite some recent convergence there is still significant heterogeneity of economic performance across the region. The low growth in Germany and, more recently, Poland is particularly alarming.

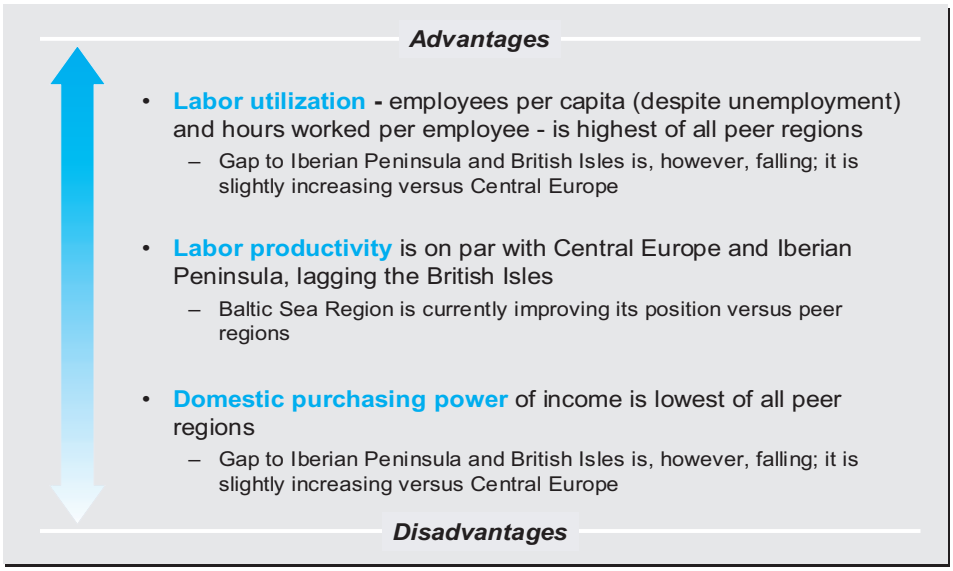
Figure 2: Prosperity, selected European countries and regions



Source: Groningen Growth and Development Centre and The Conference Board (2004), authors' calculations

Baltic Sea Region prosperity has benefited in particular from its high level of *labor utilization*, measured by annual hours worked per capita, more than 10% higher than in the peer regions. The region employees a higher share of its population than peer regions and registers, on average, more hours worked per employee. On labor productivity the Baltic Sea Region performs on average about as well as Central Europe and the Iberian Peninsula; the British Isles are about 40% ahead. Finally, the Baltic Sea Region suffers from the highest domestic price level of all four regions, reducing the prosperity benefit of the income generated.

Figure 3: Key prosperity drivers in the Baltic Sea Region



The differences across the Baltic Sea Region are higher than in any of the three other regions. The Nordic countries benefit from high productivity and a high level of employees per capita. Northern Germany falls behind mainly because of higher unemployment. The Baltic countries and northwestern Russia share low productivity and high labor utilization; the Baltic countries benefit from comparatively lower prices, conceivably because of their more open markets. Poland registers somewhat higher productivity than its eastern neighbors but suffers from high unemployment.

Table 1: Decomposition of prosperity drivers across Baltic Sea sub-regions

	Nordic countries	Germany	Poland	Baltic countries	Russia
Labor Productivity	++	++	- -	- - -	- - -
Employee per capita	=0	-	-	+	+
Hours worked per Employee	-	-	+	+	+
Domestic Purchasing Power	-	-	++	+++	++
Prosperity (% of Region)	154%	150%	53%	53%	37%

Note: +++ for >150% above Baltic Sea Region average, ++ for%,50for > average, for < average, - for < 30%, - - - for < 50%
Source: Groningen Growth and Development Centre and The Conference Board (2004), national statistics (2004), authors' calculations

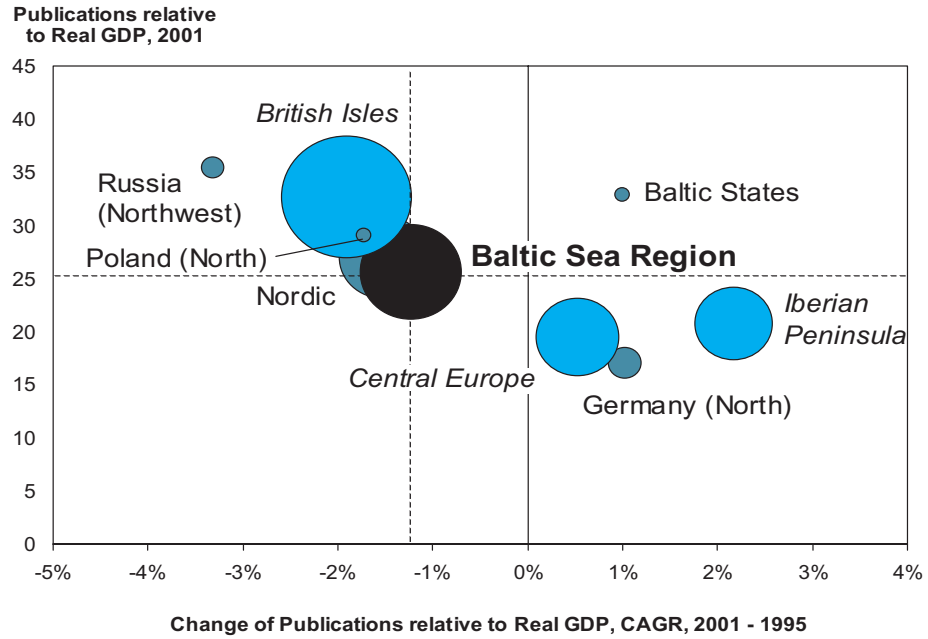
Innovation Innovation is often understood narrowly as scientific discovery. We understand innovation more broadly to capture all new products, processes, and ways of doing business that are valued by consumers, much in line with the definition recently adopted by the European Commission.[1] The Baltic Sea Region scores high on many innovation indicators that are close to the scientific discovery; even higher in fact, than suggested by its prosperity. It performs correspondingly weaker on measures of innovation that are closer to the creation of economic value and less determined by scientific inputs alone.

In terms of scientific publications, the Baltic Sea Region lags only the British Isles in overall level and the Iberian Peninsula in growth over the last decade. Northwestern Russia and the Baltic countries score relatively high on this measure, especially relative to the size of their economies. This is one of the indicators that the eastern shore countries have access to scientific capital well ahead of their current economic capabilities.

In terms of patenting, the Baltic Sea Region has a strong position both in Europe and in the United States. It outperforms the other regions in per capita patenting in both markets, and is also ahead in recent patenting growth (in U.S. patenting, however, Central Europe had a slightly higher growth rate based on strong German patenting rates). Germany and the Nordic countries (except Norway) also perform strong on R&D spending effectiveness, measured by patenting relative to total R&D spending.

1 See European Commission, European Competitiveness Report 2003, Brussels: 2003

Figure 4: Scientific publications relative to GDP, selected European countries and regions



Note: Bubble size is relative to total publications in 2001; sub-national region shares by GDP share
Source: OECD (2004), author's analysis.

International patenting by institutions from the Baltic Sea Region is dominated by a few, mainly Swedish, multinational companies. This pattern is confirmed by data on R&D spending and researchers: in the Nordic countries, Sweden and Finland in particular, businesses play a critical role for innovation while in the rest of the Region governments dominate. There are no research institutions or universities among the top patentors from the Region in the United States. While mainly a result of national rules and regulations surrounding intellectual property, this still differs significantly from other leading regions around the world.

Table 2: Top Baltic Sea Region patentors in the United States

Company	*Country*	*U.S. Patents, 1997-2001*
ERICSSON	Sweden	1246
NOKIA	Finland	809
NOVO NORDISK A/S	Denmark	553
VALMET CORP.	Finland	273
SANDVIK AKTIEBOLAG	Sweden	236
AKTIEBOLAGET ASTRA	Sweden	202
BEIERSDORF AG	Germany	136
ASEA BROWN BOVERI AB	Sweden	133
AB VOLVO	Sweden	126
ERICSSON, INC.	Sweden	99
TETRA LAVAL	Sweden	96
DANFOSS A/S	Denmark	95
SIEMENS ELEMA AB	Sweden	94
AKTIEBOLAGET ELECTROLUX	Sweden	90
DRAGERWERK AG	Germany	83
PACESETTER AB	Sweden	81
PHARMACIA & UPJOHN AB	Sweden	75
KVAERNER PULPING AKTIEBOLAG	Sweden	74
HALDOR TOPSOE A/S	Denmark	71

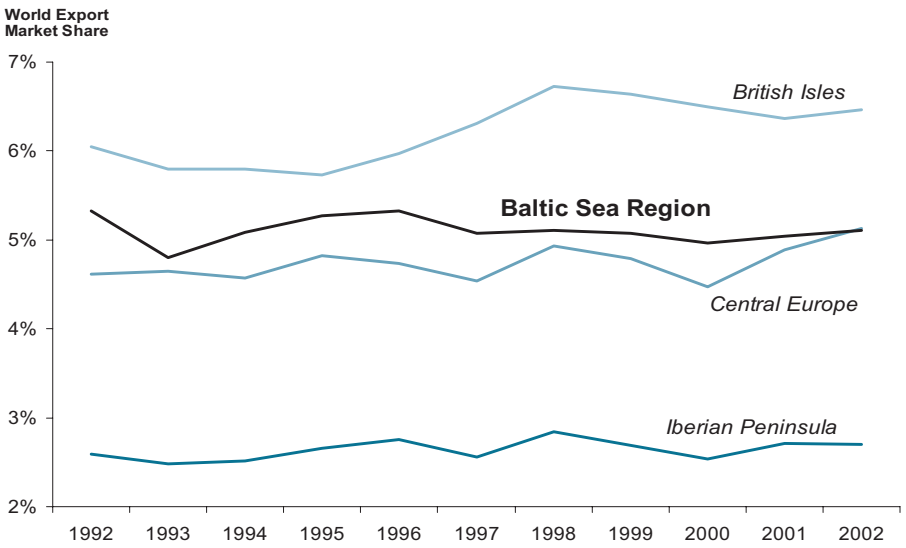
Source: USPTO (2004), author's analysis.

Scientific innovation is only one way towards the creation of new economic value; many innovative business concepts creating significant economic benefits (e.g., the Wal-Mart superstore concept) are, in fact, not directly related to science. This broader concept of innovation is much harder to capture; we look at total factor productivity and the number of fast growing companies as proxies. On both measures the Baltic Sea Region scores results that somewhat falls behind its high performance in science. The Region registers positive but stagnating total factor productivity growth rates. And the Region is home to 27 of the 500 fast growing companies ranked in the "Europe 500"; this share is only about half its 10.5% share of EU-25 GDP. Sweden is home to 16 of the Region's fast growing companies alone. Central Europe registers 56, the British Isles 36, and the Iberian Peninsula 19 companies on this list.

Other indicators There are other performance indicators that, while not conclusive themselves, provide further insights into the economic position of the Region.

First, the Baltic Sea Region has a strong export position but so do most of its European peers. The Baltic Sea Region's share of world exports (including intra-regional trade) is at 5.1% more than 50% higher than its share of world GDP. This puts it below Central Europe (67% higher) but above the British Isles (38%) and the Iberian Peninsula (11%). Excluding intra-regional trade the British Isles overtake the Baltic Sea Region in terms of relative export position. Looking at the value of exports per capita, the British Isles region is 27% ahead of Central Europe and the Baltic Sea Region, followed by Iberian Peninsula almost 50% below. Within the Baltic Sea Region, the Nordic countries and Estonia record the strongest export position, northwest Russia and northern Poland the weakest. The Baltic Sea Region's share of world exports has slightly increased since 2000 after having been stable since the mid-1990s. But the increase has been lower than in the peer regions; especially Central Europe has recently gained position and has now surpassed the Baltic Sea Region in terms of world export market share.

Figure 5: World export market shares, selected European regions



Source: WTO (2004), author's analysis.

Second, we find that Inward Foreign Direct Investment (FDI) has in the last few years been an important factor in domestic investment in the Baltic Sea Region, far more important than in Central Europe and the Iberian Peninsula and roughly on par with the British Isles. The stock of foreign investment in the Baltic Sea Region relative to GDP is now higher than in the Iberian Peninsula and Central Europe but still lagging the British

Isles by a significant margin. The overall figures for the region are strongly driven by Sweden and Denmark, countries that have attracted between 3.5 – 4 times the share of world inward FDI than their share in world GDP suggests. Estonia has been less successful in attracting FDI recently, but leads the region overall in its FDI stock relative to domestic GDP. Northwestern Russia and Norway are the region's underperformers, on both FDI flows and stocks.

Third, as a location to for globally active companies we find that the Baltic Sea Region overall is the home base to slightly more companies than the Region's share in world GDP suggests. The region registers 30 companies in the Business Week 1000 (ranked by market value) and 15 companies in the Fortune 500 (ranked by revenue). On both rankings the British Isles register about twice as many companies, while the Iberian Peninsula and Central Europe register only half as many. Within the Baltic Sea Region the distribution is highly skewed, with Sweden accounting for almost half of the regional count in both rankings and northern Germany the only location outside the Nordic countries registering any entries.

Table 3: Location of multinational companies, European regions

Business Week 1000	
British Isles	77
Baltic Sea Region	**30**
• Sweden	15
• Finland	5
• Norway	5
• Denmark	4
• Northern Germany	1
Iberian Peninsula	13
Central Europe	11

Fortune Global 500	
British Isles	36
Baltic Sea Region	**15**
• Sweden	6
• Finland	4
• Denmark	2
• Norway	2
• Northern Germany	1
Iberian Peninsula	7
Central Europe	7

Note: Business Week ranks by Market Value, Fortune by Revenues
Source: Business Week (2004), Fortune (2004), author's analysis.

Finally, on entrepreneurship the countries from the Baltic Sea Region included in the Global Entrepreneurship Monitor (GEM) tend to rank below the United States, the United Kingdom, Hungary, and Spain on the rate of total entrepreneurial activity. Russia and Sweden score especially low on this measure. While affected by taxation rules and the overall structure of the national economy, these results seem to be broadly consistent with other data and casual observations on the level of entrepreneurship across countries.

Overall assessment The Baltic Sea Region is home to a strong and prosperous economy. Our data supports this assessment but adds more texture: While the Region is strong in terms of recent growth, it is not ahead in terms of the current level of economic performance. This is affected by the inclusion of Russia and its share of 25% of the Region's population, but is still remarkable. While the Region is strong overall, the strength is strongly driven by high labor utilization, not high labor productivity as often assumed. The inclusion of Russia again contributes to this result but high labor utilization is also a factor in the Nordic countries. While the Region is strong overall, the sources of strength vary significantly across countries. This indicates that national rather then regional factors might be more important in explaining economic performance across the Region. Finally, while the Region is strong overall, its economic performance falls short of its performance in innovation, particularly in scientific innovation. Better mobilizing the economic potential of innovative capacity is clearly critical for the Region.

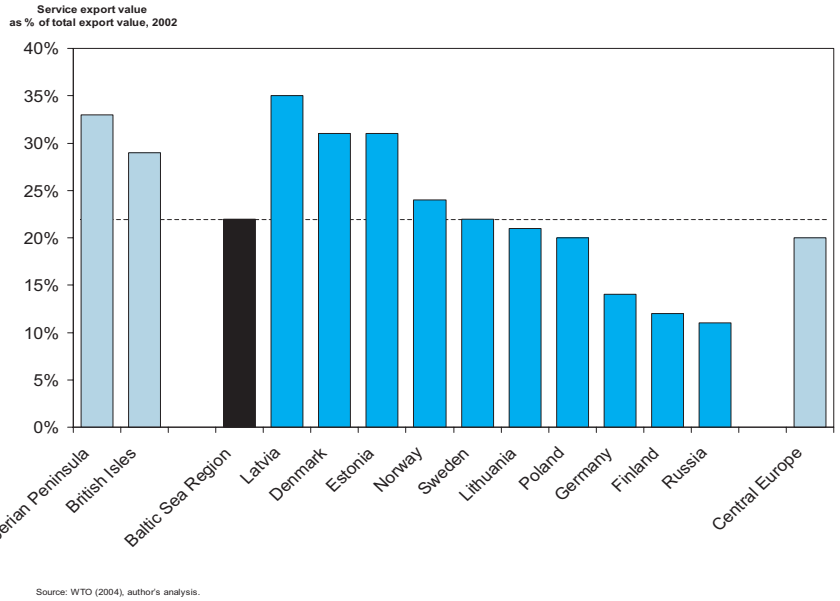
The Cluster Composition of the Baltic Sea Region

- The Baltic Sea Region's export profile continues to be relatively more specialized in exports of manufacturing goods than the European peer regions
- The Baltic Sea Region's goods exports are broadly diversified with the seven top clusters accounting for 78% of exports; the Region's leading clusters by world market share are forest products, telecom products, oil & gas, and health care
- The sub-regions around the Baltic Sea differ significantly in their cluster specialization, although some overlap exists between the Baltic and Nordic countries and, in different clusters, between the Baltic countries and Poland

To understand the dynamics of a national or regional economy, it is important to understand its patterns of specialization. Recent research[2] has shown that about two-thirds of employment tends to be in industries that are present in roughly the same proportion across all regional economies; these are activities that serve the local markets and are not directly exposed to international competition or locational choice. One-third of employment tends to be in industries that compete internationally, can locate outside the markets they serve, and tend to concentrate geographically in clusters. These clusters are the critical engines for prosperity, reaching significantly higher levels of wages, productivity, and innovation than the rest of the economy.

Export cluster specialization On the broadest level, we find that the Baltic Sea Region overall is relatively specialized in exports of manufacturing goods.[3] Service exports account for only 22% of total exports, compared to 33% for the Iberian Peninsula and 29% for the British Isles. The gap to these two regions has been increasing over the last few years. Even more specialized in exports of manufacturing goods is, however, the Central European Region with a service export share of only 20%. This region has been the only one to increase its focus on manufacturing exports in recent years, most likely driven by the strong focus on automotive and other related clusters.

Figure 6: Service share of total exports, selected European countries and regions



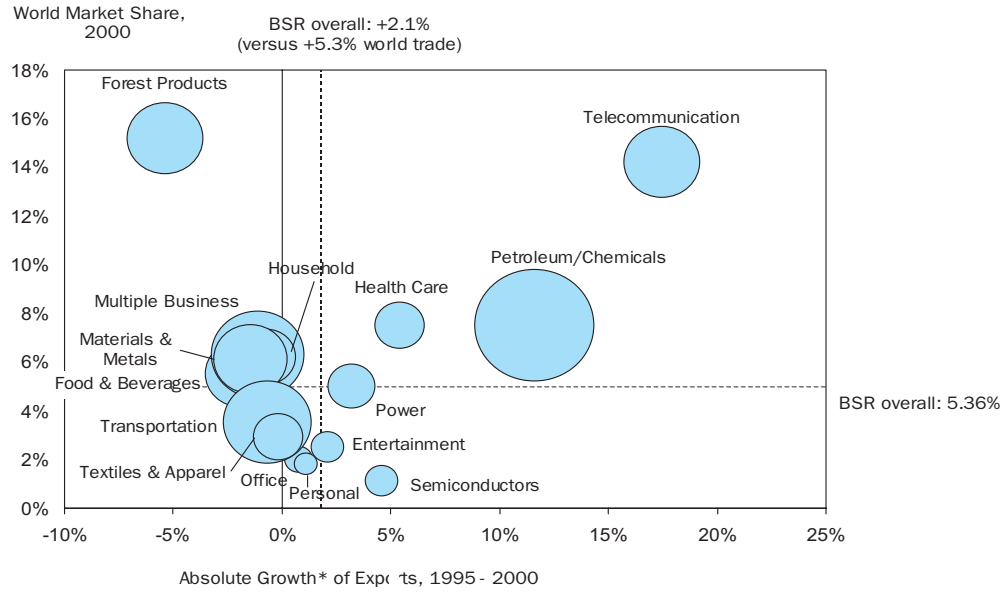
Source: WTO (2004), author's analysis.

2 Michael E. Porter, The Economic Performance of Regions, Regional Economy, Vol. 37, No. 6/7, 2003.

3 Note that the access to the detailed trade data required for this analysis is limited. We have currently no sub-national breakdown for exports from Germany, Poland, and Russia, and used their overall national profiles instead. Also, there is a publication lag for this data that limits us to 2000 cluster data.

Overall, the Baltic Sea Region has a quite diversified portfolio of exports; the seven leading clusters account for 78% of total exports. The highest export value is registered by the petroleum & chemicals cluster, clearly affected by Norway and Russia. The clusters following in terms of total export value are miscellaneous manufacturing products (aggregated in 'multiple business'), transportation, forest products, telecommunication, materials & metals, and food & beverages. Telecommunication, petroleum & chemicals, and health care registered the highest growth, while exports of forest products decreased.

Figure 7: Cluster composition of exports, Baltic Sea Region



*Growth figures exclude Baltic States and Northwest Russia
Source: WTO (2004), Institute for Strategy and Competitiveness, author's analysis.

These patterns of specialization are also reflected in the industry composition of Baltic Sea Region companies in international rankings such as Fortune 500 and Business Week 1000. Companies in industries serving mainly domestic markets, such as finance and energy, are joined by companies from sectors such as telecom products, pulp & paper, oil & gas, and automotive.

Looking at the cluster composition for individual sub-regions and countries across the Baltic Sea Region, significant differences emerge. The Nordic countries have their strengths as expected in telecom products, forest products, oil & chemicals, and food & beverages. The Baltic countries share with them a focus on forest products, food & beverages, and telecom products but have also relatively strong positions in textiles, household goods, entertainment electronics, and materials & metals. Poland's export specialization has some similarities with the Baltic countries, but does not share the overlap with the Nordic countries. Germany's export specialization looks entirely different – the national data is, however, most likely not representative for northern Germany. Finally, Russia has, based on national data, an entirely different cluster export profile.

Table 4: Cluster specialization relative to Baltic Sea Region average

	Nordic	Germany	Russia	Baltic	Poland
Higher share	Telecom	Semiconductors	Defense	Textiles	Textiles
	Forest Products	Transportation	Oil/Chemicals	Forest Products	Entertainment
	Health Care	Office	Materials&Metals	Household	Personal
	Oil/Chemicals	Personal	Multiple Business	Food&Beverages	Household
	Food&Beverages	Multiple Business	Forest Products	Entertainment	Materials&Metals
	Defense	Textiles	Personal	Telecom	Transportation
	Power	Entertainment	Food&Beverages	Materials&Metals	Power
	Household	Power	Power	Personal	Defense
	Materials&Metals	Health Care	Textiles	Power	Food&Beverages
	Multiple Business	Household	Transportation	Oil/Chemicals	Forest Products
	Entertainment	Materials&Metals	Entertainment	Office	Multiple Business
	Office	Food&Beverages	Semiconductors	Transportation	Office
	Semiconductors	Oil/Chemicals	Household	Health Care	Semiconductors
	Transportation	Forest Products	Office	Semiconductors	Oil/Chemicals
Lower Share	Textiles	Telecom	Health Care	Multiple Business	Health Care
	Personal	Defense	Telecom	Defense	Telecom

Source: WTO (2004), Institute for Strategy and Competitiveness, HBS (2004), author's analysis.

Even in clusters that are present in more than one of the Baltic Sea sub-regions, such as in telecom with positions in the Nordic and the Baltic countries, it is likely that these sub-regions will have specialized in different sub-clusters and parts of the value chain. Such specialization across the Region offers clear benefits for all locations involved, because it can leverage the different competitive advantages of sub-regions.

Overall assessment The clusters in which the Region has a significant position tend to be manufacturing related. They include clusters that differ significantly in their science intensity and have relatively little linkages between them. Overlapping patterns of cluster specialization across the Baltic Sea Region do exist but they are concentrated on individual sub-regions and pairs/groups of countries. There is little communality in cluster specialization across the entire region.

The Quality of the Microeconomic Foundations in the Baltic Sea Region

- The Baltic Sea Region leads its European peer regions on the World Economic Forum's overall Business Competitiveness Index. Its business competitiveness could, however, support a higher level of prosperity than currently achieved. The imbalance between a stronger overall business environment versus a weaker average company sophistication could be one of the reasons
- Company sophistication in the Baltic Sea Region is ranked particularly high in dimensions related to modern management structures and innovation; the Region registers its lowest rank in the extent of marketing
- The Region's business environment benefits from strong physical infrastructure, a skilled labor force, low levels of corruption, strong clusters, demanding regulations, and companies competing on innovation and uniqueness. Key weaknesses are low levels of local rivalry, high taxes, especially on labor, a high level of distortive subsidies, bureaucracy, and emerging weaknesses in education systems
- The Region is generally ranked high on elements of the innovation system; it is much stronger, however, on the inputs for science-based research than on the competitive incentives to turn scientific discovery into economic value
- The Region exhibits significant heterogeneity in the patterns of business environment quality, company sophistication, and innovation system strength, even between countries of similar overall competitiveness

The level of productivity, and thus the level of sustainable prosperity, that companies can reach at a given location is driven by conditions both at the macro- and microeconomic level. [4] The macroeconomic, political, legal, and social context creates the potential for competitiveness, but is in itself not sufficient to generate prosperity. Competitiveness and prosperity ultimately depend on the sophistication of companies and the quality of the business environment they face. Innovation is particularly affected by a subset of these factors, measure by what is sometimes referred to as the strength of the innovation system. We assess all three areas in turn

Overall competitive position The Baltic Sea Region scores well on the aggregate measure of business competitiveness that is used to rank countries in the Global Competitiveness Report.[5] The Region ranks highest among the four selected European regions, outperforming Central Europe and the Iberian Peninsula by a significant margin. Such regional scores should, however, be treated with caution: The business environment relevant for companies is set on the sub-national and national level, and average conditions across the region are not a relevant description of the environment companies face in their specific location. This is particularly important in the Baltic Sea Region, where differences across sub-regions and countries are significant.

Table 5: GCR Business Competitiveness ranking, selected European countries and regions

Baltic Sea Region		British Isles		Central Europe		Iberian Peninsula	
TOTAL RANK	*6*	*TOTAL RANK*	*9*	*TOTAL RANK*	*21*	*TOTAL RANK*	*27*
Finland	1	United Kingdom	6	Germany	5	Spain	25
Sweden	3	Ireland	21	Austria	17	Portugal	36
Denmark	4			Slovenia	30		
Germany	5			Czech Republic	35		
Norway	22			Hungary	38		
Estonia	28			Slovak Republic	42		
Latvia	29			Poland	46		
Lithuania	40						
Poland	46						
Russian Federation	63						

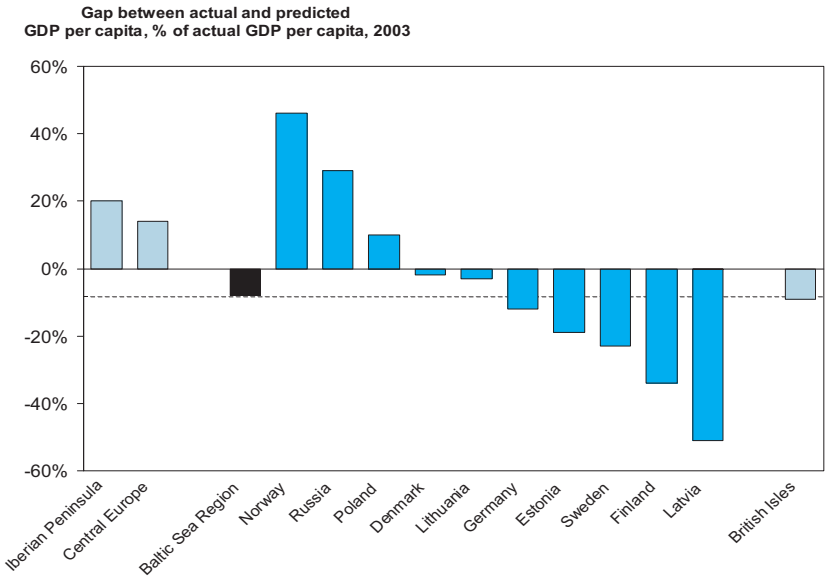
Source: Global Competitiveness Report (2003), author's analysis.

4 See Michael E. Porter, "The Competitive Advantage of Nations," The Free Press (1990), and "Building the Mi-croeconomic Foundations of Competitiveness," in: The Global Competitiveness Report 2003-04, World Economic Forum (2003) available at www.isch.hbs.edu.

5 The score for each region is calculated based on the GDP-weighted average of responses from all countries in the region.

Both the British Isles and the Baltic Sea Region record an overall business competitiveness that could support a higher level of prosperity than currently achieved; in both cases the predicted potential for prosperity improvements is close to 10% of current prosperity. Central Europe (14% above the expected level) and the Iberian Peninsula (20% above) conversely enjoy a level of current prosperity that seems unsustainable given their microeconomic fundamentals.

Figure 8: Sustainability of current prosperity, selected European countries and regions



Source: GCR (2004), Institute for Strategy and Competitiveness, author's analysis.

The result for the Baltic Sea Region is driven by Finland, Sweden, Germany and the Baltic countries. Finland, Sweden, and Germany most likely perform below their potential because other structural factors not included in the model hold back prosperity, for example taxation and labor market regulations. In the Baltic countries companies might not yet have taken full advantage of recent improvements in business environments. Norway and Russia with higher prosperity than expected are outliers in the other direction, reflecting their ability to rely on inherited natural resources. Poland, like other central European countries, registers a level of current prosperity unsustainable given its microeconomic fundamentals.

The Baltic Sea Region registers an average business environment quality that ranks above its overall company sophistication. Germany, and to a lesser degree Sweden, Poland, and Latvia, however show the opposite pattern. The British Isles and the Iberian Peninsula are more balanced, while in the Central European Region company sophistication is clearly ahead of business environment quality. Both these areas interact and significant imbalances have a cost in terms of lower overall prosperity. They also tend to affect changes over time; business environments that continuously lag company sophistication for example tend to push companies either to relocate or ultimately fall behind on their performance.

Company sophistication Companies in the Baltic Sea Region score high on practically all dimensions of company sophistication, ranking mostly between rank 7 and 12. Particular strengths are modern management structures and innovation. Somewhat surprisingly the ranking on the nature of competitive advantage, a measure of overall strategic positioning based on either low input costs or superior products and services, does not register particularly high. The Region registers the lowest rank in the extent of marketing. With three of the world's most valuable brands (Nokia, IKEA, and Nivea) it does, however, perform on par with the Central European region (three brands) and only slightly below the British Isles (five brands).

Table 6: Company sophistication, GCR rankings for Baltic Sea Region and sub-regions

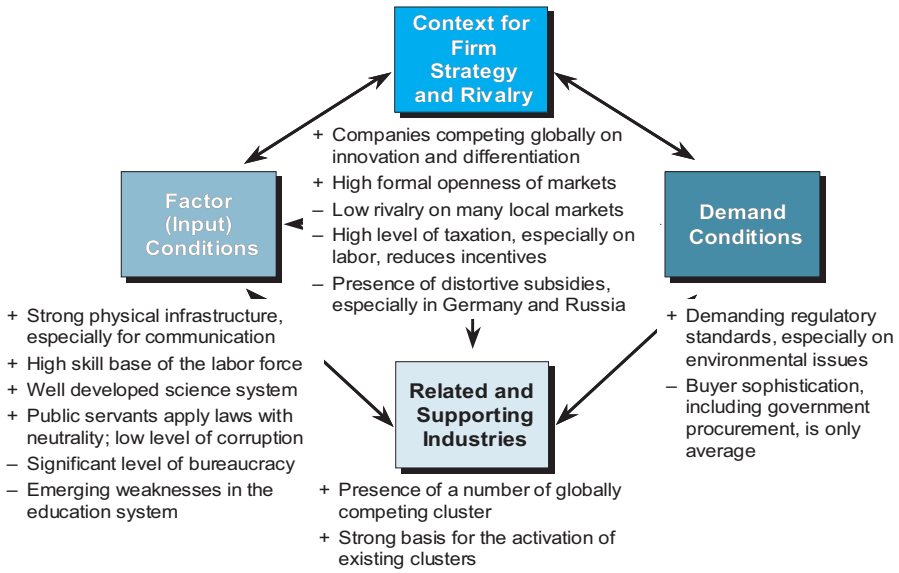
Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Willingness to Delegate Authority	4	3	4	34	50	76
Company Spending on R&D	7	8	6	36	44	66
Capacity for Innovation	8	9	3	34	40	28
Production Process Sophistication	8	7	4	36	49	62
Control of International Distribution	9	12	5	43	41	46
Extent of Staff Training	9	8	4	46	53	77
Extent of Branding	10	13	1	41	33	47
Extent of Incentive Compensation	10	13	3	42	33	59
Extent of Regional Sales	10	16	1	46	52	60
Nature of Competitive Advantage	10	9	3	48	46	74
Reliance on Professional Management	10	12	6	42	59	73
Degree of Customer Orientation	7	9	15	32	53	59
Breadth of International Markets	11	13	2	31	41	55
Value Chain Presence	11	12	3	41	35	79
Extent of Marketing	12	16	2	47	42	76

Source: Global Competitiveness Report (2003), author's analysis.

Differences in the level and profile of company sophistication across the Region are significant. German companies register high scores almost across the board. Nordic companies score well on innovation and investment but fall somewhat behind on management techniques and the control of international distribution channels. Baltic companies are relatively strong in management methods and modern manufacturing. Polish companies have their relative strengths in branding/marketing and value chain presence; possibly due to their larger home market. Russian companies finally report solid scientific potential but lack modern management techniques and a presence along the value chain.

Business environment quality The business environment is shaped by the numerous microeconomic factors that shape the ability of companies to operate with high levels of productivity and innovation. In 1990, Michael Porter introduced the "diamond" as a tool to organize this complexity and represent the key factors important for a specific country or region.[6] Different aspects of this overall profile are discussed below, moving from relative strengths to relative weaknesses of the Baltic Sea Region.

Figure 9: The Baltic Sea Region "diamond"



Source: Global Competitiveness Report (2003), author's analysis.

6 To calculate regional averages, we usually weight indicators by GDP. When the raw data can be aggregated, for example R&D spending levels, we calculate the actual sum for each region.

A key strength of the Baltic Sea Region is its well-developed *physical infrastructure*. Electricity supply, a basic but still important precondition for economic activity, is ranked 6th in the world. The transportation infrastructure is generally rated high as well, especially the ports that have a critical role for intra-regional trade. Slightly lower scores are given for air transport infrastructure.

Another strength reflected in the data is the strong telecommunication infrastructure. The telephone/fax infrastructure in the Region ranks overall 7th among all nations in the Global Competitiveness Report and the countries in the Region rank high in assessments of IT connectedness. While this area continues to be a strength for the Region, others are clearly catching up. In mobile phone penetration, for example, all four selected European regions now register very similar rates, with the Baltic Sea Region narrowly behind the British Isles and the Iberian Peninsula and slightly ahead of Central Europe.

Table 7: Physical infrastructure, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Quality of Electricity Supply	6	10	3	47	44	66
Telephone/Fax Infrastructure Quality	7	8	5	44	41	53
Railroad Infrastructure Quality	9	12	18	50	35	26
Port Infrastructure Quality	9	13	4	33	39	17
Overall Infrastructure Quality	12	9	13	56	63	80
Air Transport Infrastructure Quality	12	14	19	44	51	59

Source: Global Competitiveness Report (2003), author's analysis

The Baltic Sea Region's second main advantage is its high level of *skills and education*. The Region leads its European peers in terms of public spending on education (both level and growth) and lags only Central Europe in terms of the share of 20-24 year olds with at least secondary education. More than 10% of university graduates in the Region major in science or engineering, behind the British Isles but ahead of the Iberian Peninsula and, by some margin, the Central European Region.

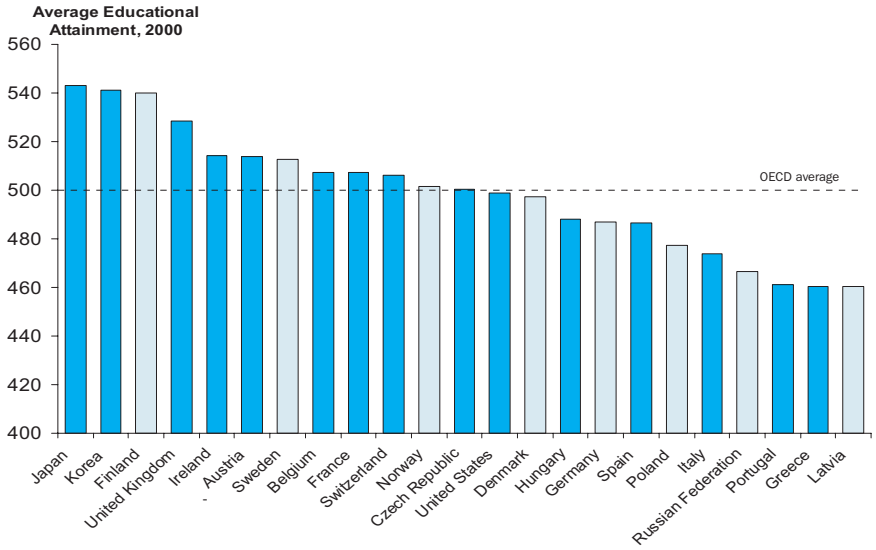
Table 8: Skills and Education, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Availability of Scientists and Engineers	9	10	6	40	52	42
Quality of Management Schools	13	7	29	24	41	60
Quality of Public Schools	15	10	36	29	38	41
Quality of Educational System	16	10	44	29	43	38
Quality of Math and Science Education	27	31	51	26	37	18

Note: GDP weighted for the Region
Source: Global Competitiveness Report (2003), author's analysis.

While the overall quality of the school system is rated high, there are concerns about the quality of education, at least in specific areas. Managers single out math and science education as an area of concern. The performance of students from Baltic Sea Region countries in the OECD's PISA study was very heterogeneous with an average level not much different from peer regions. Given the higher spending on education in the Region these results are below what can be expected.

Figure 10: Educational attainment, Selected OECD countries



Source: OECD PISA Study (2003), author's calculation

A third area often considered a strength of the region is its *legal system* and the *efficiency of the public sector*. This view is generally supported by the data, although there clearly remains a challenge in extending these qualities to the eastern shore of the Baltic Sea. Corruption is generally low, and on retreat in the countries that still struggle with the problem, in particular Russia and Latvia. A key challenge that remains across the Baltic Sea Region, however, is bureaucracy.

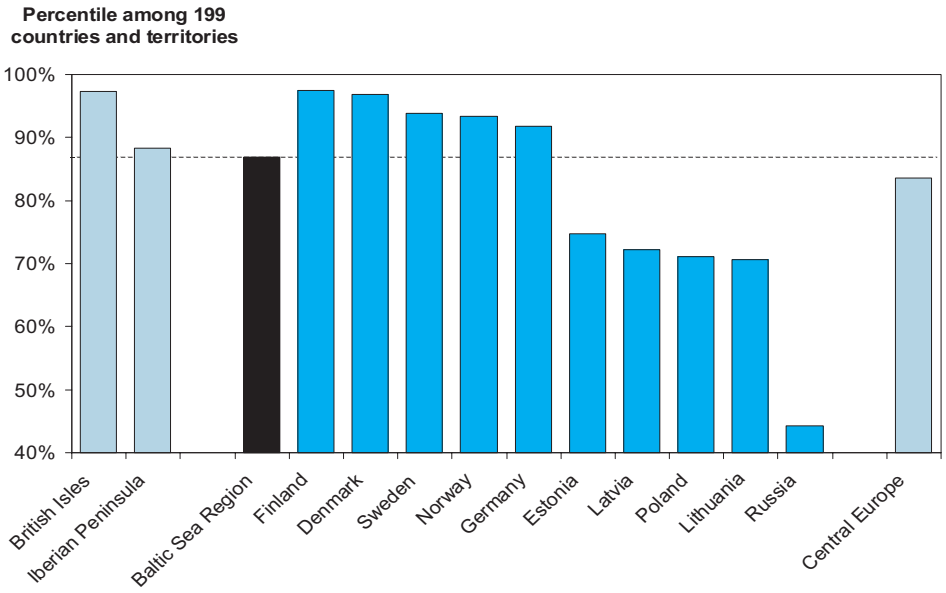
Table 9: Justice and public sector, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Legal System						
Judicial Independence	9	9	8	52	48	74
Police Protection of Businesses	11	6	41	18	48	72
Adequacy of Public Sector Legal Recourse	15	12	7	55	59	78
Government efficiency						
Business Costs of Corruption	7	6	15	40	50	53
Favoritism of Government Officials	7	5	8	30	62	74
Extent of Bureaucratic Red Tape	14	31	25	70	63	89

Source: Global Competitiveness Report (2003), author's analysis.

While the Baltic Sea Region scores high in terms of its legal system and public sector efficiency, it does not outperform its leading competitors. On public sector efficiency, for example, the British Isles are very close to the level reached by the Nordic countries.

Figure 11: Public sector efficiency, selected European countries and regions



Source: World Bank (2003)

Another area in which the Baltic Sea Region performs well is the presence of related and supporting industries and *cluster* development. Overall the region scores better on the presence of cluster elements, i.e. specialized suppliers, providers, research institutions etc., than on cluster development, i.e. organized efforts to mobilize these elements for joint action. A closer look, however, reveals that the situation in the Nordic countries is exactly opposite: While they score weaker on cluster ingredients, most likely because smaller home markets have traditionally made it harder to support sufficiently specialized companies, they are stronger on cluster development.

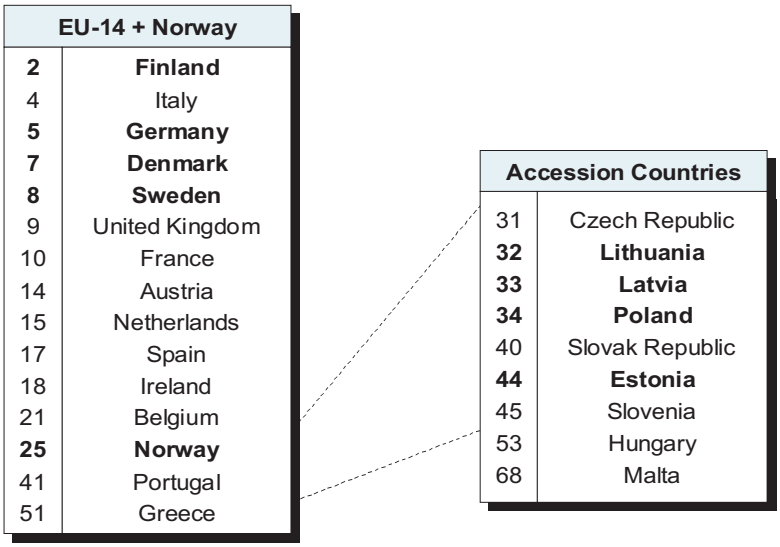
Table 10: Cluster strength, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Extent of Product and Process Collaboration	7	8	6	43	32	39
Local Availability of Process Machinery	8	13	4	40	31	18
Local Availability of Components and Parts	8	15	3	41	24	18
Local Supplier Quality	8	15	2	39	50	68
Local Supplier Quantity	9	21	2	41	52	51
Local Availability of Specialized Research and Training Services	10	15	5	40	28	33
State of Cluster Development	10	10	16	54	47	52

Source: Global Competitiveness Report (2003), author's analysis.

On an aggregate measure of cluster strength, taking account of both cluster ingredients and cluster development efforts, countries from the Baltic Sea Region tend to score well. Finland with its cluster-driven policy ranks second globally, while Norway stands out as lagging the other western shore countries. Russia, not included in the list below, ranks 35th on overall cluster strength, much higher than on business environment quality overall. This might, however, be driven by the remnants of the plan economy that created domestic self-sufficiency on almost everything without creating strong clusters.

Figure 12: Overall cluster strength, GCR rankings for Norway and EU member countries



Source: Global Competitiveness Report 2003/04

Finally, the Baltic Sea Regions is sometimes viewed as a frontrunner in adopting new technologies and setting new consumer trends more broadly. Such sophisticated demand is critical for companies that compete on innovation and on setting new standards for their respective markets.

Table 11: Demand conditions, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Stringency of Environmental Regulations	6	5	1	43	44	70
Presence of Demanding Regulatory Standards	7	11	1	44	40	50
Laws Relating to Information Technology	11	10	14	31	45	71
Consumer Adoption of Latest Products	12	9	26	38	48	57
Government Procurement of Advanced Technology Products	14	17	13	34	55	69
Buyer Sophistication	16	19	11	46	44	68

Source: Global Competitiveness Report (2003), author's analysis.

Our data suggests that the countries at the western shore of the Baltic Sea Region indeed score relatively high on measures of demand sophistication. But rankings differ quite significantly across sub-regions and countries, even on the western shore. Our data does not allow to test whether the current level of regulation only burdens companies with higher costs or actually helps them by forcing innovation in ways that global competitors ultimately will have to follow.

Turning to relative weaknesses, the level of internal *competitive pressure* is traditionally an area in which the Baltic Sea Region is seen as falling behind peer regions. The data confirms that challenges exist in this area: Overall, the Region is clearly not as strong on competitive intensity on home markets as it is on the other factors discussed above. Formal openness of markets, including anti-trust legislation and hidden trade barriers, tends to be sufficient although the low rank on tariff liberalization is disturbing. Problematic is the actual intensity of competition, especially in the Nordic countries, the degree of distortions introduced through subsidies, especially in Germany, and administrative burdens for start-ups, a challenge throughout the Region.

Table 12: Competitive pressure, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Effectiveness of Anti-Trust Policy	10	11	5	43	45	73
Hidden Trade Barrier Liberalization	11	10	13	41	52	79
Foreign Ownership of Companies	12	16	11	52	47	93
Intensity of Local Competition	18	22	13	39	51	83
Tariff Liberalization	20	24	15	38	45	76
Administrative Burden for Start-Ups	22	21	34	34	52	84
Extent of Locally Based Competitors	23	37	4	46	46	48
Extent of Distortive Subsidies	29	17	93	26	78	70

Source: Global Competitiveness Report (2003), author's analysis.

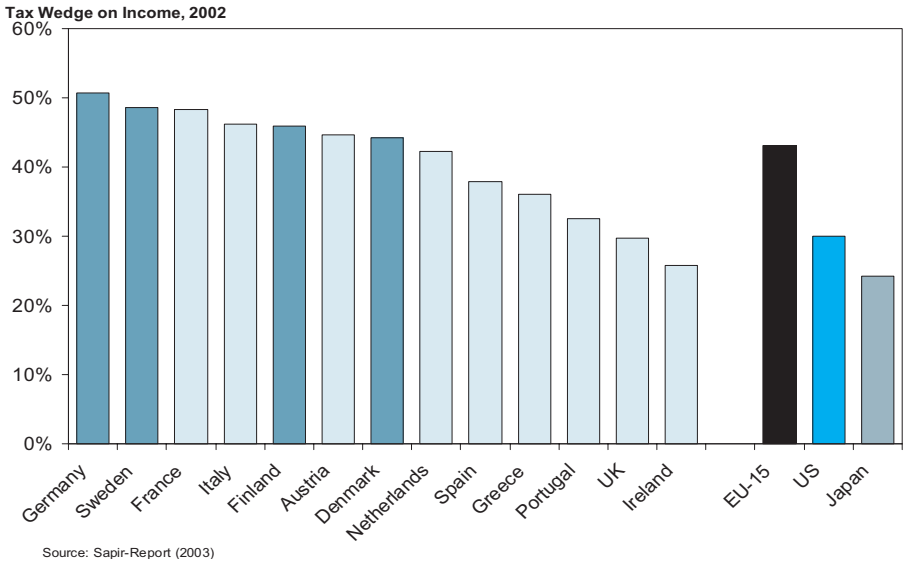
A second area widely discussed as a weakness of the Region is the level and structure of *taxation*. Governments across the Baltic Sea Region (excluding Russia) report total tax revenues equivalent to 46% of regional GDP; significantly above Central Europe (41%), the Iberian Peninsula (36%), and the British Isles (31%). Tax burdens in the Region are higher on both consumption and on production than in European peer regions.

A particular problem is the disincentives to work (or work more) that are being created by the high tax wedge (including social security payments) on labor that exists in Germany and the Nordic countries. With an otherwise generous social security system, a high tax wedge on labor easily leads to high unemployment. Even when the social security system is more effective to motivate the transition out of unemployment, the tax wedge can have a negative effect on the willingness to put in more effort.

The taxation of businesses has become a heated topic in the context of EU accession. While many western shore countries have reduced their tax rates for company profits in recent years, they do not (want to) match the zero tax rate in Estonia for retained profits. But the pressure to act is obvious: Austria, for example, has now reduced its tax rates given the 19% flat tax rate available for investors in neighboring Slovakia.

The Region needs to consider both the level and the structure of taxes that are consistent with its ambitions. In the last decade the focus has been on capital taxation, driven by the realization that capital is globally highly mobile. More recently, however, the cost of shifting the tax burden on employment in terms of incentives to work and the attractiveness of a location for highly skilled employees has come into focus. The tax regime is clearly a complicated political choice that also has to be seen in the context of how the government revenues are being used. Nevertheless, it is clear that the huge differences in current tax regimes across the Baltic Sea Region complicate the definition of a common economic strategy.

Figure 13: Tax wedge on labor income, Selected countries



Source: Sapir-Report (2003)

Connected to the taxation of labor is the wider *regulation of the labor market*. The Baltic Sea Region has on average somewhat less flexible labor markets than most peer regions, except the Iberian Peninsula. But the differences across Baltic Sea sub-regions are significant, and flexibility is higher in some parts of the labor market than in others. In addition, the Nordic countries benefit from generally effective cooperation between companies and labor unions. Germany scores significantly lower on this measure. Poland is the negative outlier, scoring much worse than the Baltic countries and Russia.

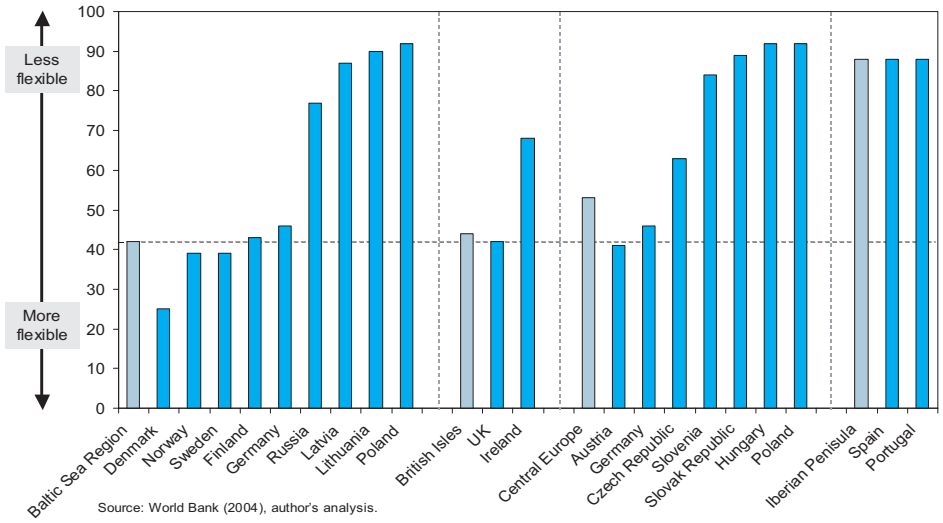
Table 13: Labor-employees relations, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region	Nordic	Germany	Baltic	Poland	Russia
Cooperation in Labor-Employer Relations 14	9	30	40	88	41

Source: Global Competitiveness Report (2003), author's analysis.

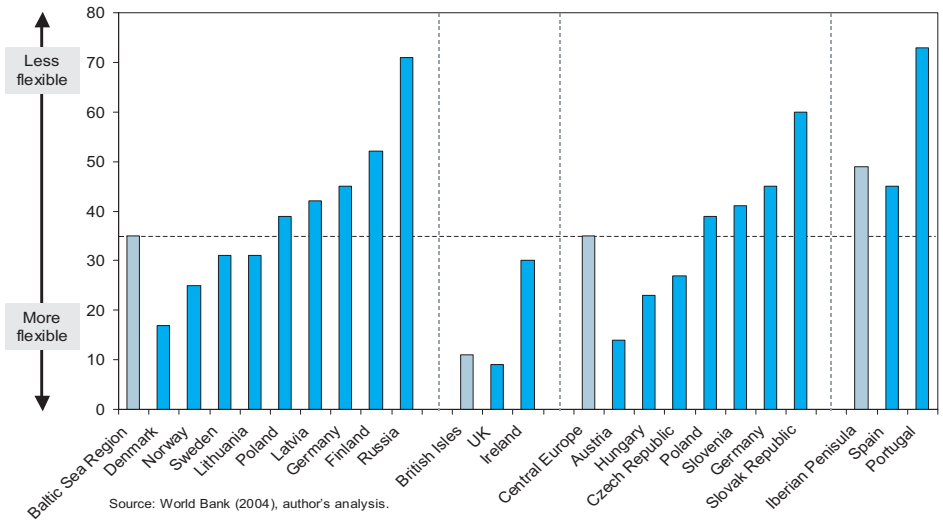
The Region overall is ranked as relatively inflexible in terms of the conditions that apply when hiring a new employee, using comparative data generated by the World Bank. Denmark, however, ranks as very flexible, while Sweden, Germany, Norway, and Finland as well as Latvia and Lithuania rank as less flexible than the Baltic Sea average and even than all central European countries. The regulation of working conditions, an area that is seen as critical for the productivity that companies can achieve, is, however, rated very differently. Here the Region overall scores most flexible among its peers, and the Nordic countries score especially well.

Figure 14: Regulation of working conditions, selected European countries and regions



While the regulation of working conditions is seen as critical for productivity, regulations for hiring and, even more, firing strongly affect labor utilization and employment levels. It turns out that on firing flexibility the differences in regulation across the Baltic Sea Region are very significant. Interestingly, more flexible regulations in these areas are broadly associated with lower unemployment rates. Denmark, Norway, and Sweden had the lowest unemployment in 2002 and rank as most flexible in terms of regulations for the termination of employment.

Figure 15: Regulation of employment termination, selected European countries and regions



Finally, the Baltic Sea Region provides *financial markets* that are neither a strong advantage nor disadvantage compared to most other regions. Many of the Regions' leading companies anyway have ample access to capital from international markets. The situation is clearly different for small companies that face quite different financial systems and regulatory environments across the Baltic Sea Region.

Table 14: Financial markets, GCR rankings for Baltic Sea Region and sub-regions

Baltic Sea Region		Nordic	Germany	Baltic	Poland	Russia
Regulation of Securities Exchanges	8	12	6	51	47	86
Existence of Bankruptcy Law	9	6	6	47	53	82
Efficacy of Corporate Boards	10	11	10	30	54	64
Protection of Minority Shareholders	10	7	6	76	63	94
Prevalence of mergers and acquisitions	11	12	24	27	25	30
Ease of Access to Loans	11	15	2	57	62	57
Venture Capital Availability	12	12	4	41	71	58
Financial Market Sophistication	14	13	12	41	56	84
Local Equity Market Access	29	42	7	47	61	70

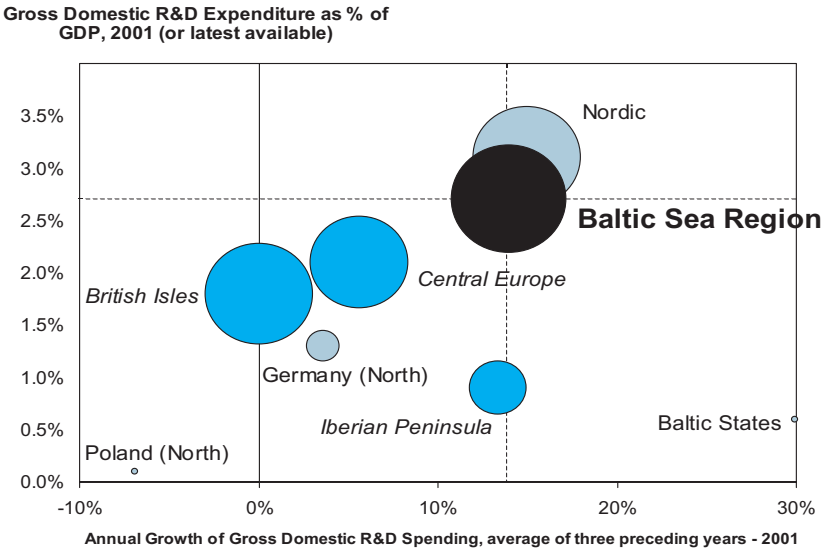
Source: Global Competitiveness Report (2003), author's analysis.

The financial markets in the Nordic countries and the Baltic countries have in the meantime reached a high level of integration. Nordic banks have now had ownership of the leading Baltic banks for some time. The stock exchanges of these two sub-regions have recently also increased their links to provide a more integrated financial market.

Quality of the innovation system The level of productivity and innovation that companies can reach at a given location are driven by an overlapping but not identical group of factors. The differences between these groups are more pronounced for "push"-factors, i.e. the factor conditions and the investments that enable companies to compete on innovation. They are almost indistinguishable for the "pull"-factors, i.e. competitive pressure and incentives that give companies reason to do so. Overall, the Baltic Sea Region has clear advantages in the push-factors but is far less ahead in the pull-factors.

The Baltic Sea Region spends more, both in absolute and relative terms to total GDP, on research and development than the other three European peer regions. And the gap has been increasing over recent years. This strong performance can, however, be almost entirely attributed to the Nordic countries. Northern Germany is investing much less in R&D than the Region on average, and the Baltic countries are, despite strong recent growth, still at a much lower level. The Region's strong position on R&D spending finds its parallel in a high share of researchers in the labor force. On this measure the Baltic Sea Region outperforms its European peers as well, again driven by the high figures for the Nordic countries; Finland and Sweden in particular.

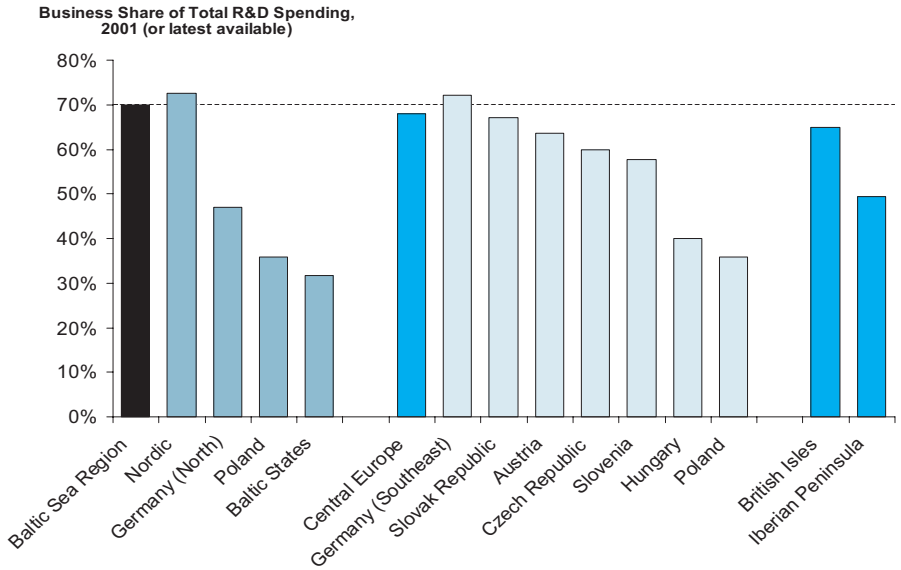
Figure 16: R&D spending, selected European regions and sub-regions



Source: EU Innovation Scoreboard 2003, author's calculation

Looking at the pattern of R&D activity, it turns out that these two countries, Finland and Sweden - leading the Region in terms of investing capital and human resources in R&D - follow a pattern that sets them apart from most other European countries: *Businesses* dominate R&D spending and employ most researchers, not government. This is, of course, fully consistent with the list of leading patentors from the Baltic Sea Region reported above. It is also reflected in international rankings of companies' R&D budgets.

Figure 17: Share of R&D spending by businesses, selected European regions and countries



Source: EU Innovation Scoreboard 2003, author's calculation

While the Baltic Sea Region, especially the Nordic countries subregion, tops the rankings in terms of R&D spending and share of researchers in the labor force, it is only average among the leading countries as far as the linkages between universities and companies, the quality of scientific research institutions, and IP protection are concerned.

Table 15: Context for Innovation, GCR rankings for Baltic Sea Region sub-regions

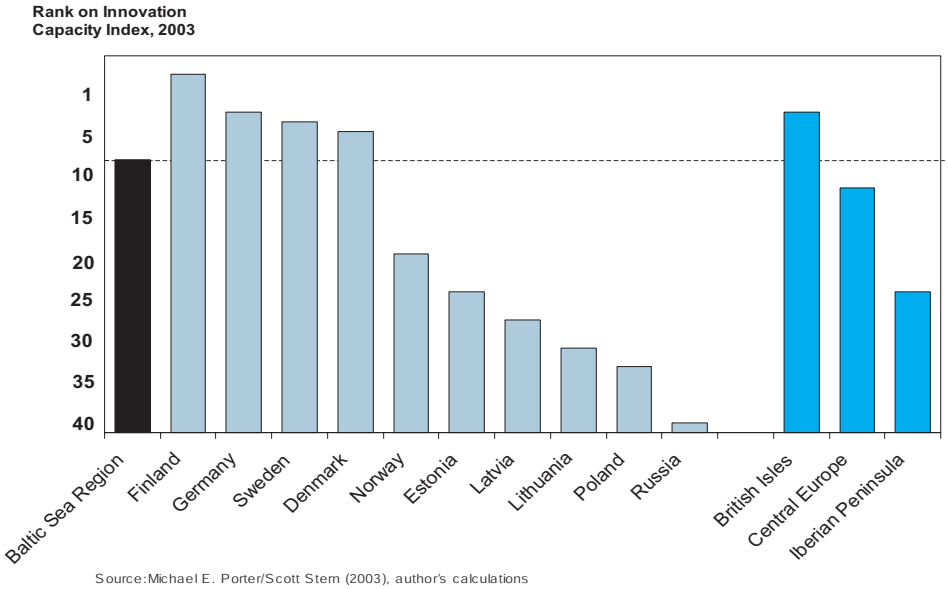
	Nordic	Germany	Baltic	Poland	Russia
University/Industry Research Collaboration	12	10	51	65	70
Quality of Scientific Research Institutions	10	12	41	51	25
Intellectual Property Protection	11	4	45	51	85

Note: GDP weighted for the Region
Source: Global Competitiveness Report (2003), author's analysis.

To assess a country's overall *innovative capacity* Michael E. Porter and Scott Stern[7] have developed a methodology to rank countries based on five areas, covering both push- and pull-factors. The areas are the Proportion of Scientists and Engineers (Share of scientists and engineers in the labor force), Innovation Linkages (Availability of specialized research and training institutions, availability of venture capital), Company Operations and Strategy (Degree to which companies compete on innovation, sophistication of marketing, and prevalence of incentive pay), Cluster Innovation Environment (Sophistication of domestic customers, extent of locally based competition, and extent of product and process collaboration), and Innovation Policy (Effectiveness of IP protection, size and availability of R&D tax credits and subsidies, and level of tariff restrictions).

7 Michael E. Porter, Scott Stern: National Innovative Capacity, Global Competitiveness Report 2002-03, World Economic Forum: 2003.

Figure 18: Innovative capacity ranking, Selected European regions and sub-regions

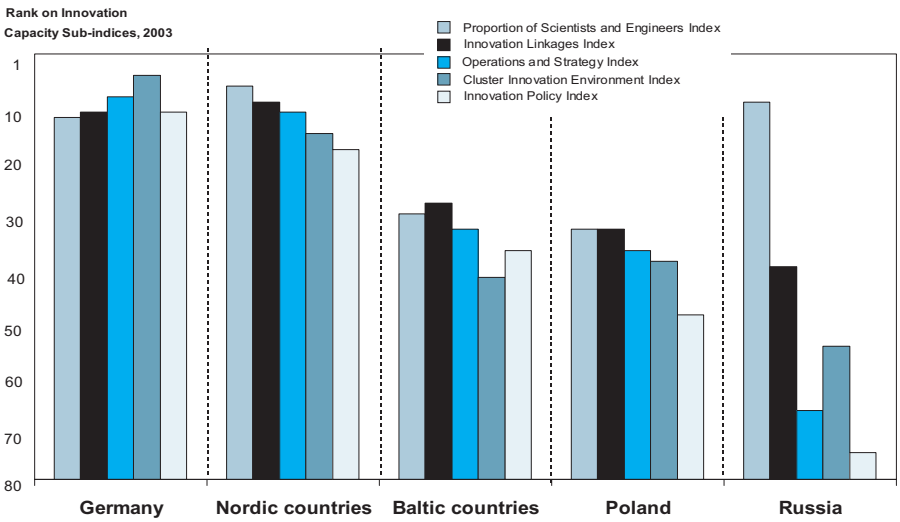


Source: Michael E. Porter/Scott Stern (2003), author's calculations

The Baltic Sea Region scores well on this index, with four countries from the Region among the top ten. Overall, however, it does not stand out among its European peer regions, falling behind the British Isles but ranking before Central Europe and, by some margin, the Iberian Peninsula.

Within the Baltic Sea Region, significant differences emerge not only in the overall level of innovative capacity, but also in the positions of sub-regions across the components of the index. Germany ranks highest among the sub-regions of the Baltic Sea, with particular strengths in companies' strategies and in clusters; it ranks among the top ten in all categories. Specific data on northern Germany was not available for this Report but the data on R&D spending in German states suggests a much more sobering profile than for Germany as a whole. The Nordic countries, dragged down by Norway's weaker position, rank high on push-factors, the availability of scientists and the access to research institutions and venture capital, but are ranked lower on innovation policy and clusters. The Baltic countries and Poland score quite similar, with the Baltic countries reaching overall somewhat better grades but suffering from weak clusters. Russia stands out with an extreme imbalance between the availability of scientists on the one hand and the sophistication of companies and of innovation policy on the other.

Figure 19: Innovative capacity subindex ranking, selected European regions and sub-regions



Source: Michael E. Porter/Scott Stern (2003), author's calculations

Overall assessment The assessment of the Baltic Sea Region's business environment provides the foundation to better understand why the Region supports a high level of economic activity at high levels of productivity. A well-developed infrastructure, a skilled labor force, a strong science system, generally efficient government services, demanding local needs, and strong cluster environments are key pillars on which the Region 's economic performance rests. These characteristics could also provide the outline of the profile the Region can communicate to international investors.

The assessment also indicates areas of weakness across the Region. The level of rivalry on domestic markets will need to be improved if the Region wants to be a global leader in competitiveness. It will require changes in the regulatory environment on the markets for individual goods and services, but also a review of labor markets, financial markets, and, critically important, taxation to make progress on this agenda. Such changes would have ripple on effects that would also enable the Region to better utilize the significant scientific potential it has in its innovation systems.

Finally, the assessment of the business environments across the Region emphasizes the limitations of cross-national regional aggregates. The relevant context for companies is set in a much more limited geographic space, the nation or even the sub-national region. In the Baltic Sea Region, we find that differences are not only significant between countries at the western and eastern shore of the Baltic Sea. Differences are also significant within these groups, and providing aggregations has limited value for companies or public policy. These differences are visible in all the analyzed categories – company sophistication, business environment quality, and strength of the innovation system.

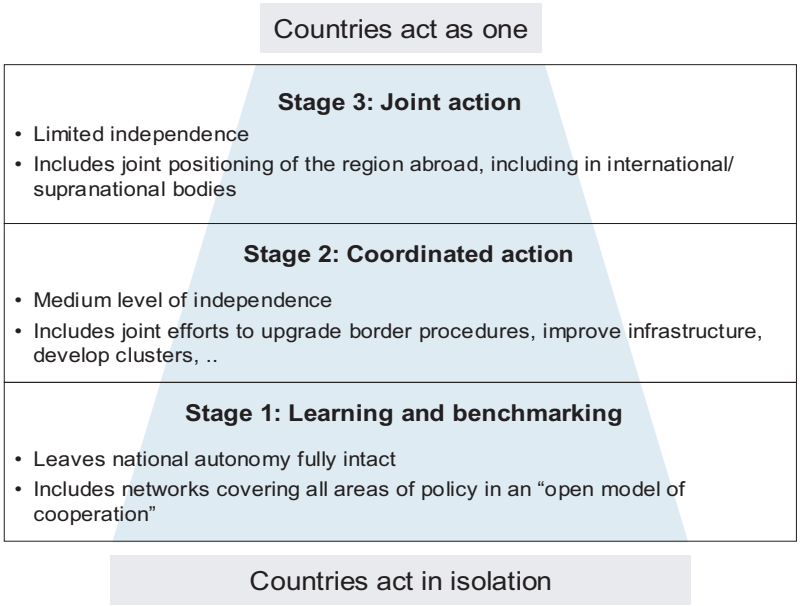
Implications for Regional Cooperation

- Neighborhood matters - regional cooperation can provide significant benefits for competitiveness through its impact on national policies and through region-wide initiatives
- Regional cooperation becomes more beneficial but also more challenging the more heterogeneous the participating countries are; especially when the ambition is to move towards a joint economic strategy and profile for the Region. Regional cooperation always requires a choice for action; it is never an automatic process.
- For the Baltic Sea Region, this report outlines opportunities for regional cooperation and identifies key elements for the agenda that the Region has to pursue in order to improve competitiveness.
    - The Region can still benefit from the loose combination of networks and bilateral/regional contacts to inform policy choices that remain entirely national or sub-national. This Report provides data that can inform individual countries about priority areas in which they could profit from cooperation
    - The Region needs to continue to coordinate and strengthen activities in areas with positive spillovers across national borders, such as cluster development, physical infrastructure, border control, environment, etc. The Report provides data that can help to identify such opportunities for specific subregions.
    - The Region has opportunities to engage in more efforts to mobilize its potential with an integrated strategy to achieve common goals such as FDI attraction, policy initiatives within the EU, etc. The data in this report indicates, however, that this will require an open discussion of the characteristics that the entire Region shares: innovative capacity is the prime candidate but will need a specific focus to be meaningful

Regional cooperation and competitiveness Recent research on competitiveness has shown, that the ability of companies to reach high levels of productivity and innovation at a specific location is affected by conditions set at all geographic levels. Regulations set on the international level, for example the WTO, matter. Decisions made at the level of larger groups of countries, for example the European Union, matter. And national policies, long considered the primary driver of competitiveness, clearly matter. But choices made at the level of the sub-national and local level matter as well. To affect competitiveness, it is important to determine which factors should be addressed in which geographic arena. Regional cooperation is no substitute for sound national policy choices, but it can increase their quality and strengthen their impact.

This line of research has put new emphasis on the role of neighboring countries. Empirically, we find that the prosperity of neighboring countries has a significant impact on a nation's own economic potential, even accounting for business environment quality. This indicates that working together to improve the state of the Region is in the interest of all participants. In the past, such cooperation has often been focused on free trade zones. But the breadth of regional cooperation efforts has increased significantly over recent years. Now a much larger list of policies is being considered in regional cooperation initiatives, and many of them affect the microeconomic foundations of competitiveness that are a key concern of this Report.

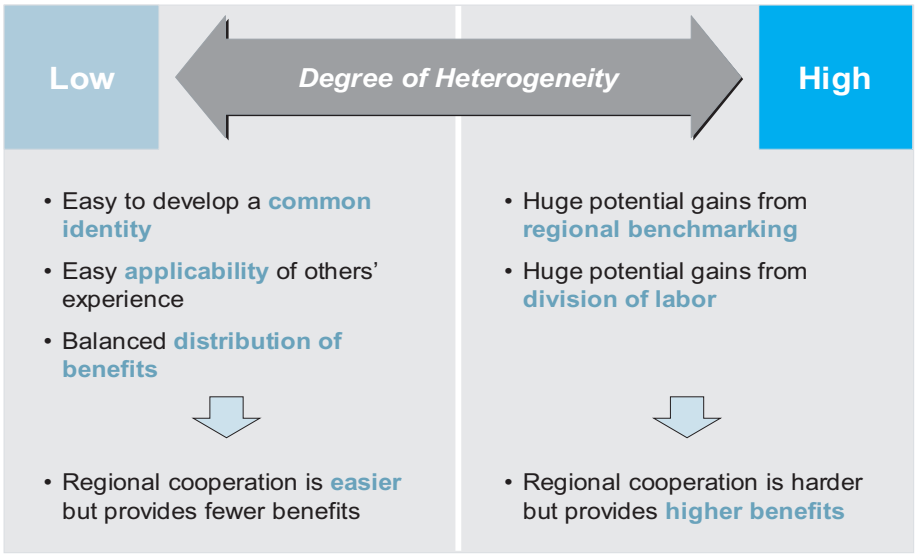
Figure 20: Levels of regional cooperation



To better understand the role regional cooperation can play, it is useful to distinguish activities by the level of integration they require. On the *lowest level*, regional networks can be used to get informed about the experience other countries in the region have made with specific policy choices. Geographic (and often also cultural) proximity can make it much easier to learn from such examples. Such cooperation can cover almost all policy areas and can occur in all combinations of actors from parts or the entire region. There is in principal no need for joint decisions and harmonization, although such joint decisions can be useful to enable reforms on the national level as the EU experience has shown. On the *medium level*, countries can work together in areas where cross-border spillovers exist. Infrastructure investments, rules that affect regional trade, migration, capital, and knowledge flows as well as cluster development are typical examples. Such efforts require joint decisions and commitment from all parties. The countries or sub-regions included, however, can vary from project to project. On the most *ambitious level*, countries can relinquish part of their sovereignty to pursue joint policies in areas such as FDI attraction or in affecting the policies of supranational/international bodies they are part of.

The role of regional heterogeneity One factor that is critical for the actual level of regional cooperation is the heterogeneity among countries. This is an issue particularly relevant for the Baltic Sea Region, given the significant differences in economic performance and business environment quality.

Figure 21: The effect of country heterogeneity on regional cooperation



Higher levels of heterogeneity, it turns out, increase the benefits from regional cooperation but makes them harder to achieve. There is more to gain from the division of labor, for example within a cluster such as telecom equipment that can combine the research excellence in Finland and Sweden with capable but less costly production sites in the Baltic countries. And there is more potential to upgrade the less developed parts of the Region by transferring tried and tested policies and structures from the more advanced parts. This has been a key motivator for the extensive efforts to support the Baltic countries and Poland ahead of EU accession. Against these benefits, however, stand significant challenges: The region will find it much harder to achieve a common identity and profile. In the Baltic Sea Region it will, for example, be much easier to agree on innovativeness as a key part of the regional strategy than on a joint tax or labor market policy. The applicability of learnings in one country for another might be limited, and transferring policies can actually be dysfunctional. In our view there is, for example, a danger in copying innovation policies that have worked in the context of the Nordic countries to Baltic countries at a very different stage of economic development. And finally the distribution of benefits from cooperation might be so uneven, that parts of the Region opt out. The discussion on labor mobility in the wake of EU accession have highlighted the danger that governments in the western countries, under pressure from their electorates to face off competition from lower wage countries in the east, feel forced to curtail regional integration.

One factor with a direct impact on the level of regional heterogeneity is the geographic definition of the Region that is used. This definition is a matter of choice; there is no economic data that can decide whether Iceland or Berlin should be included in the definition of the Baltic Sea Region. There is a tendency to think that a larger region will automatically be a stronger region. But because of more heterogeneity the opposite might be true, especially if regional cooperation is driven to a higher level that requires a common identity and willingness to accept joint decisions.

Implications of the 2004 State of the Region Report The Baltic Sea Region is already now home to a wide variety of institutions and initiatives that include different sets of participants and cover different aspects of the economic reality in the Region. A few examples are listed below. Our ambition for this first year of the Report was to provide the structure and data necessary to enable a more informed debate about how these efforts can be integrated to achieve more impact. Our aim was not to present the answers to the challenges identified; these answers can only come from the participants in the Region themselves.

Figure 22: Examples of current Baltic Sea Region institutions and efforts

Private Sector

- Companies: BCCA (http://www.bcca.ws/cm3a/default.asp)
- Not-for-profit
  - Baltic Development Forum (http://www.bdforum.org/sideindhold.asp)
  - Baltic Sea Forum (http://www.baltic-sea-forum.org/en/)
- Academic: Baltic University Program (http://www.balticuniv.uu.se/)

Public Sector

- Supranational level: EU INTERREG III B (http://www.spatial.baltic.net)
- Regional level: CBSS (http://www.cbss.st/)
  - Private sector advisory: BAC (http://www.chamber.se/bac/)
  - Sustainable development action agenda (http://www.baltic21.org/index.php)
  - Spatial planning (http://www.vasab.org.pl/)
- Sub-regional level: Nordic Council (www.norden.org)
  - Nordregio (http://www.nordregio.se/)
  - Nordic Innovation center (http://www.nordicinnovation.net/)
- Sub-national regions level: BSSSC (http://www.bsssc.com/pages/index.html)
- City level: Union of Baltic Cities (http://www.ubc.net/)

Cluster-specific

- Life Sciences: ScanBalt (http://www.scanbalt.org/)
- Tourism: Baltic Sea Tourism Commission (http://www.balticsea.com/)

While the next year will enable us to provide a more complete and in-depth assessment, some clear implications emerge already from this year's Report:

First, regional cooperation in the Baltic Sea Region is a matter of *choice*, not an automatic process. The many differences this Report has documented in terms of performance, performance drivers, company practices, and business environments across the Region indicate that political and business leaders need to take active decisions to mobilize the potential from regional cooperation. If these decisions fail to materialize, the challenges that heterogeneity pose for regional cooperation might just be too high, and efforts on sub-regional and bilateral level the better choice. Companies currently located in the Region might downgrade their involvement in efforts to strengthen the Region relative to their activities to gain a strong foothold in other parts of the world.

Second, there are clear *benefits* from sustained regional cooperation in the Baltic Sea Region. This Report has shown that given the huge heterogeneity in business environments, not only between the east and west, of the Region there are still many areas in which cooperation can improve policy choices made on the national level. This Report has also identified the common challenge the Region is facing in increasing the dynamism of its markets. It has also started to shed light on the further potential for joint cluster development and other policy coordination in areas affecting regional integration. We will focus more on this next year. Finally, this report has started to suggest the potential for mobilizing the Region by building a clear profile based on the Region's shared strengths that can be used to attract international investors and influence EU policy making.

Third, the Baltic Sea Region needs a *strategy* to unlock the benefits of regional cooperation. This strategy needs to set specific and realistic goals for what regional cooperation aims to achieve in the new era of development the Baltic Sea Region is now entering. Regional cooperation is no "golden bullet," but it can play a very useful role. And this strategy needs to be founded in an institutional architecture that clearly assigns responsibility for specific policy areas to the appropriate institution or network. We probably don't need more regional institutions and initiatives but we do need more coordination between them.

For next year, we plan to include, for example, a deeper analysis of the current level of integration in the Region (flows of trade, capital, people, and ideas) and an assessment of the many activities that already exist to upgrade competitiveness and innovation across the Region. We will, in discussions with our partners across the Region, also work to identify the options the Region has in positioning itself in the global economy and prepare data relevant to make informed decisions about action priorities to get there. Like this year, the goal will be to focus on only those areas in which better information is critical to make the right policy choices for the Region.

Figures

Tables

Key Sources

Doing Business, World Bank, Washington DC: 2004

Global Competitiveness Report, World Economic Forum, Geneva: 2003

Governance & Anti-Corruption, World Bank, Washington DC: 2004

Innovation Scoreboard, European Commission, Brussels: 2004

Institute for Strategy and Competitiveness, Harvard Business School, Boston: 2004

International Trade Statistics, WTO, Geneva: 2003

OECD, Science, Technology and Industry Scoreboard, Paris: 2003

Sapir-Report, European Commission, Brussels: 2003

Structural Indicators, Eurostat, Brussels: 2004

Total Economy Database, Groningen Growth and Development, Groningen: 2004

World Investment Report, Unctad, Geneva: 2003

About the authors

Dr. Christian Ketels is a member of the faculty at Harvard Business School and Principal Associate at Professor Michael E. Porter's Institute for Strategy and Competitiveness. He holds a PhD (Econ) from the London School of Economics and further degrees in economics from the Kiel Institute for World Economics (IfW) and the University of Cologne. Since January 2004, he is also a Senior Research Fellow at the Institute of International Business (IIB) at the Stockholm School of Economics. Dr. Ketels currently serves as the Executive Director of the foundation Clusters and Competitiveness, a not-for-profit organization located in Barcelona, Spain. He has led many initiatives and research projects on regional and national competitiveness issues, has written widely on economic policy issues, and has been a speaker at events in Europe, the United States, and Asia on country competitiveness and company strategy.

Dr. Örjan Sölvell is Professor of International Business at the Stockholm School of Economics, Institute of International Business (IIB), and Dean of the Stockholm School of Economics' MBA Program. He is also a Senior Institute Associate at the Institute of Strategy and Competitiveness at Harvard Business School. Dr Sölvell has published extensively in the areas of Clusters, Competitiveness and Multinational corporations. The concept of clusters and the diamond model was launched in Sweden in 1991 through Advantage Sweden (Norstedts) written together with Michael E. Porter and Ivo Zander. Recent publications include "Microcompetitiveness of Wireless Valley," published with Michael E Porter and Ivo Zander (Invest in Sweden Agency, ISA, 2000), and "kluster.se" (SNS 2001). In 1987, Dr Sölvell co-founded the consulting group Ivory Tower. Together with Christian Ketels and Göran Lindqvist, Professor Sölvell last year published the "Cluster Initiative Greenbook", the first empirical assessment of cluster initiatives around the world (http://www.ivorytower.se/greenbook/iscgrbk.html.)

Baltic Development Forum
The leading high-level network
for decision-makers from business,
politics, academia and media
in the Baltic Sea region

Valkendorfsgade 13
P.O. Box 1127
DK - 1009 Copenhagen K
Denmark
Telephone: + 45 33 70 71 30
Fax: + 45 33 14 13 94
www.bdforum.org

Baltic Development Forum
is a non-profit organisation.
Its mission is to advance
the growth potential of the
Baltic Sea region through
the forging of new partnerships
between leaders from
business, national
and local government,
academia and media.

This report can be downloaded
at www.bdforum.org

Baltic Development Forum