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The economic state of the Baltic Sea region

Edited by Kari Liuhto

CENTRUM BALTICUM

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Foreword: The Baltic Sea connecting people

Kari Liuhto

Around 60 million people live in the Baltic Sea Region, depending on its geographical definition. The Baltic Sea provides access to the two most populous countries of Europe – Germany and Russia – that are home to more than 200 million people. One of the largest European metropolises is located on the shores of the Baltic Sea: St Petersburg. The capital cities of many Baltic Sea states are located on its shores. These capitals and other coastal cities comprise an urban string of pearls in the Baltic Sea Region, linking both cities and nations.

The two largest economies of Europe, as measured in terms of purchasing power parity, have coastlines on the Baltic Sea: Germany and Russia. Germany accounts for about one-fifth of the European Union's GDP while Russia is the world's wealthiest nation in terms of natural resources. Although neither of these countries could be considered a solely Baltic Sea state, it is important to note that the sea provides access to the massive markets of these two countries and eight smaller ones.

The Baltic Sea is a natural transport route that has been used by Vikings, Hanseatic traders and today's salespeople. Although trade has made the Baltic Sea states quite dependent on each other, one should not forget that these countries are also globally significant. For instance, Germany is the world's third-largest trading nation after the United States and China, and Russia is the world's largest exporter of energy. All in all, the Baltic Sea Region accounts for almost five per cent of global trade.

The economies of Germany and Russia are linked by the Nord Stream 1 gas pipeline that runs on the bed of the Baltic Sea. This gas pipeline is like a steel umbilical cord that connects the industrial machinery of Central Europe with the gas resources of Western Siberia. When Nord Stream 2 goes into operation at the end of this decade, Russia will be able to supply almost all of its gas exports to the European Union through these Baltic Sea pipelines. Upon the completion of Nord Stream 2, Russia will no longer be dependent on natural gas transit through Ukraine and Belarus. It remains to be seen how the change in natural gas transit will affect Russia's relationship with Ukraine and Belarus. It would not be a great geopolitical surprise if Russia's relationship to these western Slavic neighbours were to become even more complicated and tense when gas transit ends.

In addition to Nord Stream, the Baltic Sea states will be linked by the Balticconnector gas pipeline, which in this decade will connect Finland to Estonia and thereby the gas networks of the other Baltic countries. When Balticconnector goes on stream, Lithuania's LNG terminal, which was opened almost three years ago, will also improve Finland's security of energy supply. In addition to Balticconnector, it would be important to build the GIPL gas pipeline between Lithuania and Poland, which would finally end the isolation of Finland and the Baltic countries from the European gas network.

Power cables also increase the energy linkages between the Baltic Sea states. Examples of submarine power cables that are significant to Finland include Fenno-Scan between Finland and Sweden as well as Estlink between Finland and Estonia. Several such power cables link countries in the Baltic Sea Region. The integration of electricity markets in the Baltic Sea Region is a positive development. On the other hand, growing dependence on electricity imports forces Baltic Sea states to ensure backup arrangements in case

these inter-country power cables were to break for some reason. It is not unheard of for power cables – and marine cables especially – to break.

The Baltic Sea has become perhaps the most significant route for the transport of oil from Russia to the west. In 1995, 20 million tonnes of Russian oil were transported via ports in the Gulf of Finland. Twenty years later, the oil transport volume has grown eightfold. It is important for Baltic Sea states and tanker companies operating on the sea to do their utmost to prevent oil spills, as such an accident would have a high environmental, economic and political cost.

Above all, the Baltic Sea unites the countries around it. On the other hand, the cooling of the political atmosphere might transform the Baltic Sea Region into a confrontational sphere of influence for East and West, as during the Cold War. If relations between the East and West continue to cool, Kaliningrad, an exclave with about one million inhabitants that is separate from Russian mainland, will once again become the military vanguard of Russia in the West. In addition to the deployment of Iskander missiles, restrictions on the free movement of people strengthens the impression of Kaliningrad as the western vanguard of Russia. The ending of visa-free travel between Kaliningrad and its neighbouring Polish areas in autumn 2016 strengthens the vicious cycle of military buildup and may increase the dissatisfaction among ordinary people as travel is now more difficult.

The future will show how long the smouldering Ukrainian crisis will blow the winds of Cold War into the Baltic Sea Region and how the European Union and the Eurasian Economic Union will eventually coexist in the Baltic Sea Region. Other factors that add to uncertainty about the future of the Baltic Sea Region are the looming Brexit, mounting nationalism both inside and outside Europe, the threat of protectionism caused by Trumpism, and the growing influence of China. The greater economic clout of China is now clearly evident in the Baltic Sea Region as well – particularly in the imports of the Baltic Sea countries. It is not only Chinese products that make the country known in the Baltic Sea Region: Chinese capital and tourists have followed in the wake of these products.

The Centrum Balticum Foundation is celebrating its 10th anniversary this year. The Foundation has compiled articles from most of the Baltic Sea countries on the economic development of these countries and other themes uniting the region. We have included several compact keynote articles at the beginning of the book from Corina Crețu, the European Commissioner for Regional Policy, Mika Lintilä, the Finnish Minister of Economic Affairs, Jyri Häkämies, CEO of the Confederation of Finnish Industries, Minna Arve, CEO of the Turku Chamber of Commerce, and Markus Granlund, Dean of the Turku School of Economics.

I would like to warmly thank all the authors for their valuable contributions to increasing dialogue and knowledge of the Baltic Sea Region. I hope that this book, published in connection with the Baltic Sea Region Forum held in Finland, will take you on a useful journey through the economies of the Baltic Sea Region.

Turku, 30 May 2017

Kari Liuhto
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Cohesion policy in the Baltic region: added-value for growth and stability

Corina Creţu

Every region and country in the European Union benefits from Cohesion Policy, not only for their economic development but also for convergence, solidarity and unity between Member States. Let's take a look at what Cohesion Policy has achieved in the Baltic region.

The 8 Member States around the Baltic Sea region (Lithuania, Latvia, Estonia, Finland, Sweden, Denmark, Germany and Poland) have different histories and economic backgrounds. Once divided by the iron curtain, they are now part of the EU family. Cohesion Policy has helped each and every one of them improve the living standards of their inhabitants and boost growth and job creations.

In Estonia, for example, the implementation of the funds has made an important contribution to socio-economic development, with Cohesion Policy investments representing almost 40% of government capital investment between 2007 and 2013. The funds were used to alleviate the negative impact of the economic crisis and helped stimulate recovery, with more than 9,000 jobs created. In Latvia, from 2007 until 2013, Cohesion Policy has supported 1,184 start-up projects through business incubators and almost 150 000 people gained access to broadband. And nearby in Lithuania 1.580 projects were implemented with European funding in the field of research and technological development in the period 2007-2013.

For the current 2014-2020 financial period we are witnessing again the good use of allocated funding. In Poland alone by the end of 2023 the funds are expected to reach nearly one third of Polish SMEs responsible for nearly 34% of overall jobs. In Sweden 22,000 companies should receive support from the funds at the end of the programming period.

Even though the Cohesion Policy envelopes of Finland, Sweden and Denmark are rather modest, that support is crucial for the sectors or areas where the money is invested. For example, in Denmark, more than half of the regionally-based business support is financed by the EU.

Furthermore, in order to understand the magnitude of the impact of Cohesion Policy investments, we need to see beyond national borders. Though direct Cohesion Policy investments bring direct benefits to any specific region or Member State, we also need to take into account the indirect benefits of such investments. For instance, studies show that Cohesion Policy investments in the 4 Visegrad countries (the Czech Republic, Hungary, Poland and Slovakia) in the 2007-2013 programming period may have triggered additional exports from Sweden and Denmark of EUR 1.5 billion and from Finland of more than EUR 600 million. These figures reflect the amounts that flow from Cohesion Policy investments in the Visegrad countries to the three Nordic Member States.

Calculations based on economic models also indicate that Cohesion Policy investments in all convergence countries will result in an increase of GDP in other Member States – an increase that would not have materialized without the investments.

But Cohesion Policy means more than economic benefits. It enables collaboration at a scale unseen before. It means, for example, the German Länder of Schleswig-Holstein taking the lead in partnership with Poland to develop cultural projects in the framework of the European Strategy for the Baltic Sea Region. Another concrete example is the city of Hamburg coordinating the project 'Co2olBricks - Climate Change, Cultural Heritage & Energy Efficient Monuments'- a project aiming to reduce the energy consumption of historical buildings without putting in danger their cultural values, gathering 18 partners from 9 countries: Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Poland, Belarus and Germany.

My colleague Frans Timmermans, the First Vice-President of the European Commission emphasized in a recent speech that Europe is a union of unlikely allies, of countries that founded the most successful peace project in human history. For me, the Baltic Sea States illustrate that Cohesion Policy stands at the core of this project. Cohesion Policy forges a stronger economy, gives a boost to reforms and enables collaboration between States, regions, localities. Cohesion Policy investments and the bonds they have created in the 8 countries around the Baltic Sea contribute to an ever closer Union.

Smart & clean Baltic Sea

Mika Lintilä

Nearly 700 hundred years ago the Hanseatic League and its Hansa towns and cities dominated trade in the Baltic Sea region. The League's aim was to intensify cooperation and remove trade restrictions between Hansa members. Today, the region still serves as an example of the benefits of cross-border cooperation and the pursuit of mutual economic interests. The countries around the Baltic Sea have long historical ties that bring people and businesses together.

The Baltic Sea region is home to 85 million people. It covers the Nordic and Baltic countries, Northern Germany, Northern Poland and parts of Russia's Northwestern Federal District. Although the Baltic Sea is on the geographical periphery of mainland Europe, it is a very significant and internationally competitive economic area. In fact, the Baltic Sea region is the fifth largest economic area in the world, and many of the countries in the region top the global competitiveness and welfare rankings.

Traditionally, the Nordic countries have played a crucial role in the cooperation undertaken within the Baltic Sea region, but today the EU has also become an important strategic partner for the countries involved. This is a much-welcomed development. We need both the single market and the EU's cohesion policy to further strengthen our competitiveness and to tackle development disparities.

The Baltic Sea region continues to be an integral part of the global economy. The region boasts a long and distinguished history in shipbuilding and maritime logistics. Nowadays, it is an important exporter in many sectors, from metal and engineering to biopharmaceuticals and forest products.

On average, the Nordic countries import 7.9 tonnes of goods per capita by sea each year. This is very similar to the figure for Japan, at 7.5 tonnes, which indicates that, just like an island nation, the Nordic countries are very much reliant on seaborne trade. In Finland about 90% of our exports and 80% of our imports are transported by sea. The high proportion of foreign trade and sea cargo makes it essential that sea routes function well and are reliable, safe and environmentally friendly. Good maritime connections are vital for the competitiveness of businesses and the economy at large.

The Baltic Sea is highly vulnerable to environmental disturbances. The concentrations of nitrates and phosphates, largely originating from fertilizers used in farming or sewage, are too high. The Baltic Sea is also threatened by the increasing amount of shipping, which generates emissions and increases the risk of oil and chemical spills. Worsening water quality may lead to economic losses if coastal areas become less desirable choices for tourism and recreational activities. Thus, the countries bordering the Baltic Sea have intensified their joint efforts to bring eutrophication under control and to improve the state of the sea.

An environmentally sustainable economy is a common objective for the countries of the Baltic Sea region. The Finnish Government places a strong emphasis on environmental values and supports the growth of cleantech technologies. Clean technologies and smart solutions are environmentally friendly and use energy sources effectively. They increase productivity and profitability while at the same time cutting down waste

and pollution. The use of cleantech solutions has already decreased phosphorous and nitrogen discharges in the Baltic Sea significantly.

Smart and clean industries will be the main driver in facilitating sustainable growth in the Baltic Sea region. In order for such industries to flourish we need more holistic policy thinking where EU actions on regulation and standards are coupled with investments in the most promising ecosystems and platforms. Agile practices and piloting should be made possible at all stages of research and innovation.

Steps have already been taken in this direction. The Balticconnector gas pipeline, for instance, will play a major role in the energy strategies of both Finland and the EU. The pipeline connects the Finnish and Baltic gas markets and integrates them with the EU's common energy market. The project will improve energy security by diversifying gas distribution channels and will promote security of supply in the whole Baltic Sea region. It will also enable the use of alternative sources, such as liquid natural gas (LNG) and biogas. Another good example is C-Lion, a submarine data cable between Germany and Finland that provides a high-capacity network connection for Europe and will later improve connections to Asia, too.

Another important element for creating new business ecosystems is the continued adoption and development of digital technologies and digitalization and harvesting of the benefits arising from these. This is also a key priority for the Finnish Government. In fact, digitalization has a key role in the development of the Finnish maritime cluster. The aim is to produce the world's first unmanned maritime products and services and a vivid ecosystem by 2025.

A Smart & Clean Baltic Sea is our common goal. All possible means for developing deeper collaboration should be employed in order to reach this goal. The circular economy is creating a brand new way of doing business, where cooperation between governments, researchers and the private sector is a precondition for long lasting results. Let us work together to keep the Baltic Sea at the forefront of sustainable economic growth and development.

The significance of the Baltic Sea region for Finnish industries

Jyri Häkämies

History shows that the Baltic Sea Region has been of crucial importance for development of modern Finnish manufacturing and service industries. The geographical closeness to suppliers of raw materials and end-users has enabled development of various profitable businesses since the early days of Finland´s 100 years of independence.

In 1917 Finland was a poor agrarian country with a gross domestic product per capita less than half of that of the United Kingdom, one of world leaders at the time in this respect. Today Finland is a country of high-level manufacturing and service industries with per capita GDP approximately the same as that of the United Kingdom.

Especially since the 1950s Finland´s relatively small domestic market has increasingly forced Finnish companies to look for new markets across the border. In most cases this has meant starting to look for new customers in the countries around the Baltic Sea.

The proximity to a great number of potential customers and their demand for high quality products and services has challenged Finnish industries to continuous development and diversification of their products. This has been extremely important for all companies but especially for SMEs in their early stage of internationalization. Success in the Baltic Sea Region has meant a solid stepping stone to the world market as well.

Equally important role has played the constantly growing number of foreign direct investment from other Baltic Sea countries to Finland and vice versa. Strong commitment to open market economic policy and the rules of EU internal market has enabled easy opening of new businesses and workplaces based on regional value chains.

In recent years the significance of the region has somewhat changed in the globalized world, but the Baltic Sea countries have kept their position as a priority region for a majority of Finnish internationalized companies. Describing the Baltic Sea Region as enlarged home market does not raise eyebrows in Finland.

The share of the Baltic Sea countries has remained high for Finnish foreign trade despite of the recent sharp decrease of cross-border trade with Russia. In 2016 Finnish exports to Sweden, Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Norway and Iceland was well over 40% of the Finnish exports in total. In imports the corresponding figure was approximately 50%.

The export and import figures reveal mainly the importance of the region for manufacturing industries. For tourism, retail and other service industries the significance of the Baltic Sea countries is even higher. The number of tourists visiting Finland from Asia, other continents as well as Central and Southern Europe is growing fast and digitalization has minimized the significance of distances in all areas of service industries. This has, however, not diminished the importance of the region for Finnish service providers.

Despite of the new lower normal level of growth the Baltic Sea region is not only one of Europe´s most prosperous macro-regions but globally as well. Latest economic growth forecasts support the assumption that the importance of the region for Finnish companies should remain on the current level or even slightly increase.

Securing the significance

GDP of all Baltic Sea countries including Russia is estimated to grow in 2017 and the slow erosion of the world export market share of the Baltic Sea region could come to an end. This requires, however, continuous improvement of the operational business environment and measures to abolish weaknesses that hinder growth of domestic and inward foreign direct investment in the region.

Securing competitiveness has always been a great challenge. The 1996 Stockholm Declaration on Growth and Development in the Baltic Sea Region signed by the that time leading industrialists of the region starts with the following: "There are, in the Baltic Sea Region, no alternatives to a well-functioning market economic system. But the market economy can only flourish when participants feel confident that there will be peaceful relations between countries and people in the region and that there will not be any destructive changes or threats to life, liberty or property."

The 23-page declaration lists measures to be taken to secure rule of law, cut bureaucracy and develop public administration, foster free trade, integrate Europe, take care of stable monetary systems and prudent economic policies, add flexibility to labor market, dismantle privileges and monopolies, improve infrastructure, make development sustainable and guarantee high-level education. Since 1996 a lot of positive development has taken place in all listed measures and prosperity of all Baltic Sea countries has increased significantly.

However, other regions have not been on idle run as well. Determined efforts are required to keep the Baltic Sea Region not only one of Europe´s most prosperous macro-regions but globally as well. The growing protectionism, BREXIT, geopolitical tensions and other uncertainties do not make it easy.

Global competitiveness requires continuous restructuring and fine tuning everywhere and the Baltic Sea countries do not make an exception. A lot can be learned from the past. The titles of the 1996 Declaration are topical even in 2017 thought the proposed measures require a thorough update especially due to digitalization and progress made in the European integration.

The final words of the Declaration are: "There is no time to lose - if the Baltic Sea Region is to become a more dynamic region in the world, action should be taken immediately! There is now a window of opportunity - given the right conditions, business and governments can work together to make the Baltic Sea Region a hot-be for opportunity in the 21st century. Let us make it happen!"

Up to now it has been made happen, but innovative determined measures are needed now and in the future as well. With this in mind the Baltic Sea Region can be for the Finnish industries the next 100 years as significant as it has been during the first 100 years of Finland´s independence.

Turku as a frontrunner boosting co-operation and sustainability in the Baltic Sea region

Minna Arve

Urbanization goes forward

Our future is set to be urban. Urbanization is one of the most powerful trends effecting to dynamics between urban and rural areas. According to the UN, by 2050 two thirds of the world's population will live in cities. The outcome of the future depends on how well cities are able to solve questions related to infrastructure, job creation, climate and environment. Smart cities alone will succeed and they will compete with other smart cities. This is the level where Turku as a city needs to set goals.

Cities are the engine of economic growth. They add value for both citizens and companies by bringing people, education, jobs, business and culture together. Turku area has succeed doing this by using so called triple helix collaboration meaning collaboration between city, business and academia. The outcome is more innovations, more cooperation and better business environment.

Easy mobility is a key question within cities, and at the same time logistic chains and rapid connections between cities are essential. That is why Finland as a country should invest into good infrastructure between biggest city regions and the most urgent need is a high-speed train between Turku and Helsinki. Not only physical infrastructure is important but also developing and enabling digital mobile services is essential for the future success.

Northern Growth Zone creates success

The Northern Growth Zone is a zone that stretches from Stockholm to St. Petersburg via Turku and Helsinki. The Growth Zone brings together an economic area of 330 billion euros and more than 13 million people. It is an outstanding concentration of people, business, labor, education and research, and represents a major logistic route.

Map 1. The Northern Growth Zone goes through Stockholm, Turku, Helsinki and St. Petersburg

The Northern Growth Zone is the chain of cities which forms a new kind of platform for innovations and international activity. It is a globally competitive market area and as well as an attractive business environment and a logistical corridor in northern Baltic area. Good infrastructure between cities ensures easy mobility and increase productivity. That is why governments in each country need to be involved in developing this growth zone area. This zone as a logistic corridor is a part of European Commission's Ten-T infrastructure network.

In addition to urbanization, the need for good collaboration between cities is even more important. As Turku has long traditions with both Stockholm and St. Petersburg, it is natural that Turku is active and is encouraging cities which are part of the zone, to collaborate. It would be a great competitive advantage to each city while they can learn from each other, benchmark and set common goals. For example climate and environmental issues are a good examples where we can achieve more together than alone. Like Turku, Stockholm has ambitions goals becoming a society with no net greenhouse gas emissions by the year 2050.

Smart cities are sustainable

The future is dependent on cities and how they develop. Sustainability is in the core of smart cities and circular economies which entail effective use of materials. Turku has decided to be a carbon neutral by 2040. On a global comparison the goal has reached sixth place and Turku has the opportunity to become a model city in cleantech. The goal can be achieved by developing transport, energy and industrial flows towards a more sustainable direction. Turku is a member of the Climate Leadership Council and has been invited to the United Nation Paris Climate Change city program.

In 2016 Turku started to use electric busses and aims to electrify others means of transport, such as ferries. Renewable energy will surpass fossil fuels in 2017, when a new incinerator will start producing energy by burning woodchips. Turku has already made massive investments of water cleaning and has reduced its phosphorus emissions to the Baltic Sea. Biogas is produced in several facilities from sludge and bio-waste. Solar, wind and waterpower is increasingly applied. There are several ongoing projects related to circular economy. Recycling of glass, metal, cardboard and plastic is already at a high level. In additions e.g. textile waste is collected and new ways of utilizing cotton and wool are developed.

Not only industries, but citizens have been invited to reduce their emissions and use materials more effectively. Sharing economy is promoted and for example office furniture, cars and office space are shared. Since 2000 Turku has reduced its greenhouse gas emissions by 20% and per capita almost 25%. This is the highest number in the whole of Finland and proves that Turku is taking sustainability seriously.

How to develop high quality research and education to support responsible economic development of the BSR

Markus Granlund

According to its strategy, the University of Turku aims to be a catalyst for social well-being and economy, in addition to being a world-class research and education institution, where students and personnel are taken good care of. These objectives are further labelled by the Entrepreneurship University initiative. University students are the future leaders and decision-makers of our society. Therefore, we need to carefully consider what and how we teach them. The financial crisis that started in 2008 put business schools into the spotlight in this respect, first especially in the US. Around that time the question was raised: to what extent students are taught to become responsible and future-oriented decision-makers instead of becoming short-sighted profit maximizers? After those discussions, universities and their business schools have globally taken the issue seriously and incorporated responsibility more or less into their curricula, not least because international business school accreditation bodies are also driving this development.

Indeed, in the core of discussions and debates regarding the role of universities in producing qualified graduates for the business and public sectors are business schools. In general, the role of business schools could be presented along the following lines (adapted from the agenda of the US-based Association to Advance Collegiate Schools of Business):

- Co-creators of knowledge: high quality research (also) through partnering in knowledge formation at the intersections of academia, industry, and the public sector
- Catalysts for innovation: networking to foster new solutions
- Leaders on leadership: advancing research into understanding leadership and creating environments that train responsible leaders
- Enablers of global prosperity: helping to address societal goals, including creating ethical and sustainable organizations
- Hubs of lifelong learning: offering education from Bachelor level to executive training.

This is a different view, even surprising to some, on what has traditionally been thought about business schools. What I personally would like to emphasize here is enabling students and new graduates to think differently and innovatively, to make a difference in the world. We can seldom give direct, 'correct' answers to complex managerial problems, but facilitate students to learn to ask the right questions. This is why we should put special effort in renewing curricula as we strive for responsible management and a sustainable society. Also the ideas of networking to foster new solutions and co-creation of knowledge should be taken seriously.

Business schools around the Baltic Sea should have a look at the mirror to reflect how they foster research based education of the future professionals and leaders regarding sustainability. It is more and more important to incorporate business ethics and other themes related to responsible business to the curricula. Furthermore, this should not only mean giving single courses on the topic, but incorporation of this thematic through the curriculum in a systematic way, possibly around inter-disciplinary, thematic programs. All disciplines, from

accounting and finance to law, marketing, management, and economics, should take this initiative seriously and collaborate. Such development would eventually turn into a competitive advantage as well: the Baltic Sea region could be made a forerunner in responsible management and consequently a leader in societal and environmental health. This requires carrying on and deepening research collaboration with the business life and public bodies in order to find cures to the wicked problems surrounding us. We can also feed to the idea of life-long learning, and incorporate future orientation and sustainability into our adult education, especially executive education.

The prevailing, financially oriented thinking patterns do not typically balance short and long term, quantitative and qualitative, and internal and external aspects of management. There is a true need for balanced strategic thinking and management that goes hand in hand with sustainable development. By admitting the complexity involved and giving all stakeholders a voice, even if a quiet one, facilitates learning in a totally different manner than 'pipe brained' approaches. Indeed, strategic renewal and emerging, bottom-up strategies necessitate listening to the weak signals. This applies not only to companies, but also to public sector organizations, including universities.

The societies and their decision makers, both political and other, should recognize that university level research and education based on most recent, fact-based knowledge is a cornerstone of societal but also economic development, in the long run. It seems that many times there is a problem with the time perspective in related discussions: too many people tend to expect short term benefits whereas others recognize that such an idea goes more or less against the fundamental purpose and role of universities in the society. According to recent statistics, those European countries have been able to develop the quality of science most where the relative share of basic funding is the highest in relation to external, competitive funding. This testifies to the fact that the quarter to analyze performance and results of universities is not 3 months but 5-10, if not 25 years.

The Finnish economy

Vesa Vihriälä

1. Introduction

The performance of the Finnish economy has been weak by most measures since the onset of the global financial crisis. In 2016 GDP remained some 4.5% below the level reached in 2008. The unemployment rate was 8.8% when it was 6.4% in 2008, and public debt as a percentage of GDP had doubled to 64% of GDP between 2008 and 2016.

Finland has done quite a bit worse than the other Northern European countries it has often been compared with: the other Nordics, Germany, the Netherlands, and the UK. The decline in GDP has been greater than even in the euro area as a whole. This outcome is a paradox, given that, prior to the crisis, Finland was considered one of the most competitive, dynamic knowledge-based economies in the world. The puzzle becomes even greater when one notes that Finland has not suffered a financial crisis of its own since 2008, like Iceland, Ireland, Spain or even Denmark did.

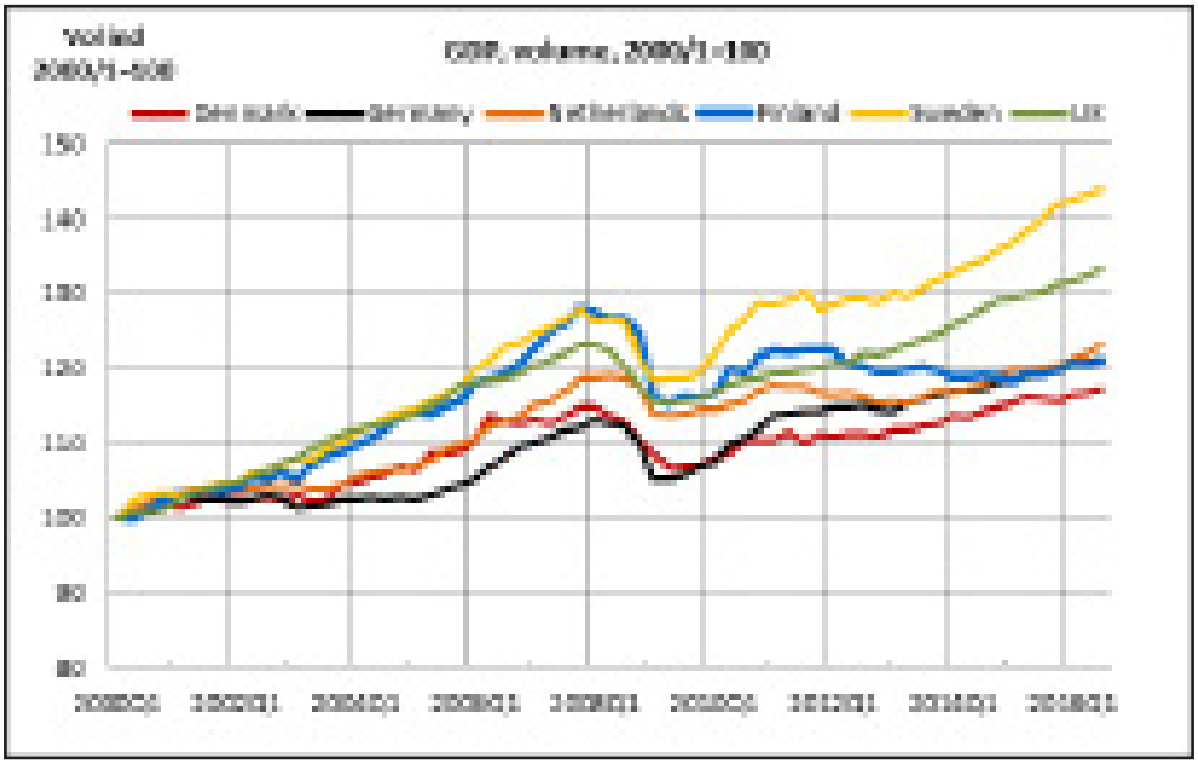
Three types of explanations have been offered for the disappointing outcome. First, Finland has been hit by exceptional shocks beyond the control of the policy makers. Second, macroeconomic policy has failed in mitigating the shocks. Third, the economy has lacked flexibility or resilience in the face of the shocks. In what follows, I will argue that the first and third explanations are plausible while the macroeconomic one is simply false.

In addition, I will discuss the outlook of economy. In this regard I will claim that the economy has turned around resuming growth thanks in part to an improved external environment (including fading away of the impacts of the shocks) and in part to sensible policies supported by some underlying strengths. Nevertheless, unless reform policies are continued, medium-term growth will remain modest and pressures on the public finances will not ease.

2. The epicentres of the crisis: exports and productivity

Compared to her peers, Finland has done dismally indeed since 2008. GDP declined initially by more than 8% and more importantly a recovery in 2010 and 2011 stalled leading to a decline of GDP three years in a row in 2012–2014. In 2015 GDP was essentially unchanged (Diagram 1).

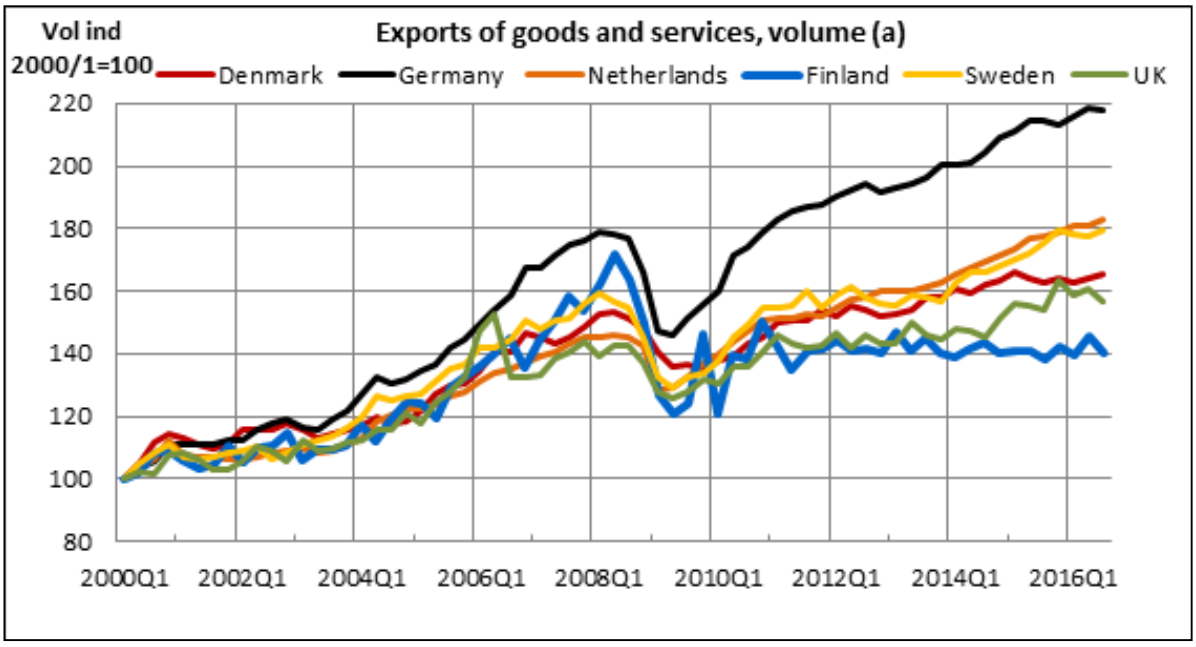
Diagram 1. Star performer's GDP has stagnated

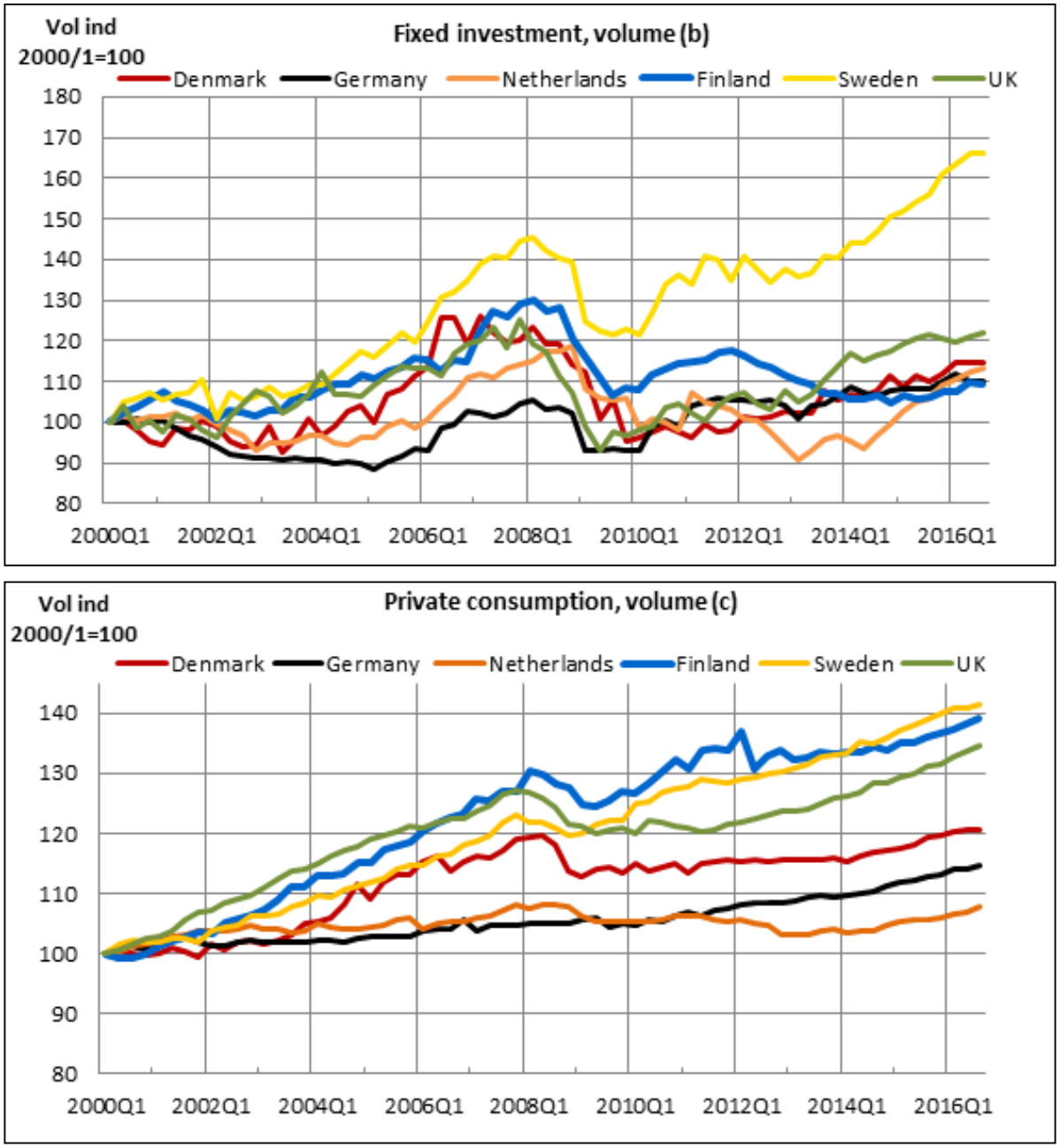


Source: Eurostat.

Looked from the demand side the weak growth performance stems from exports which first plummeted and never recovered. Understandably, investment in productive capacity suffered as a consequence. Private consumption has held up quite well, though, whether compared to other countries or to other main demand components (Diagram 2, panels a, b, c).

Diagram 2. Evolution of the main demand components (a, b, c)

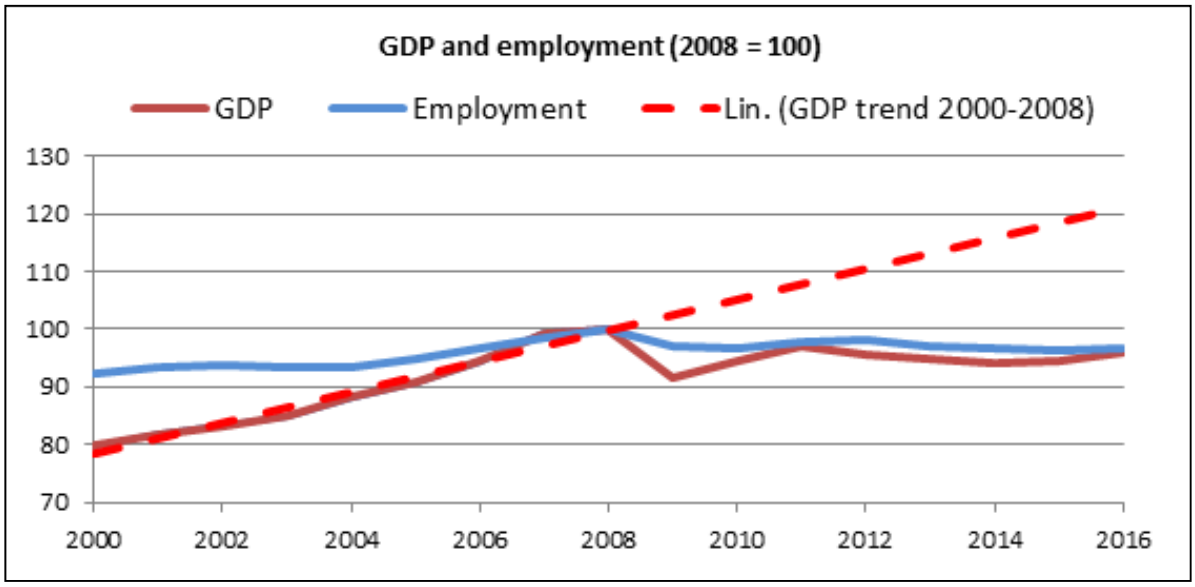




Source: Eurostat.

On the production side, most of the growth weakness is due to a collapse and later stagnation of productivity. In 2016 GDP was some 20% lower than the pre-crisis trend would have suggested. Of this about 4/5 is due to weaker productivity and 1/5 due to lower employment (Diagram 3).

Diagram 3. GDP and employment vs. trend

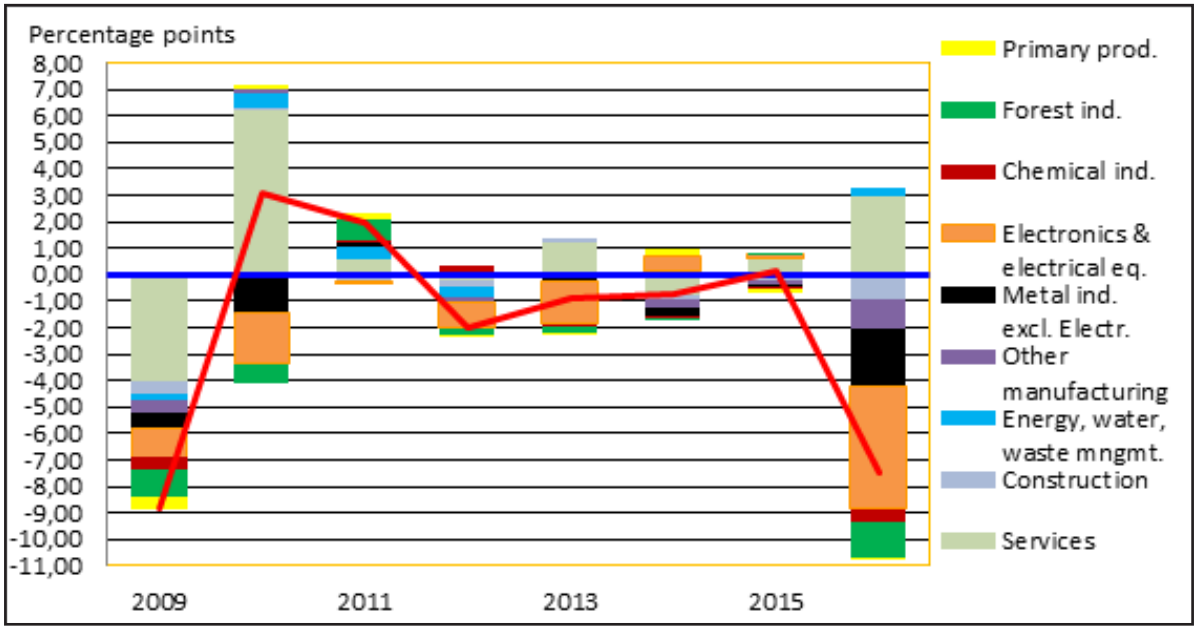


Source: Statistics Finland, Etla's calculations.

3. A series of shocks created a slow-moving crisis

A closer look at the evolution of production in different branches reveals that cumulatively the most important negative contribution to GDP has come from the ICT sector. In addition, other parts of the technology industry and also forest industry have contributed clearly to the decline (Diagram 4).

Diagram 4. The branch contributions to GDP

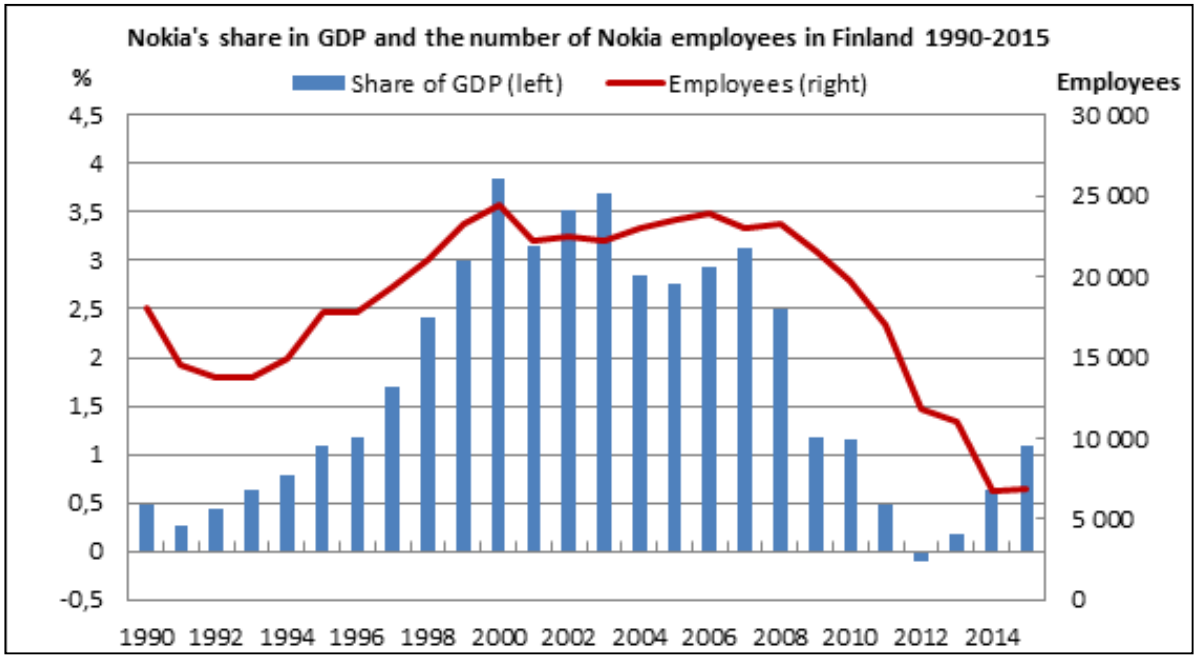


Sources: Statistics Finland; Etla's calculations.

It is quite clear that in addition to the general, symmetric negative demand shock produced by the global financial crisis around the world in late 2008 and through 2009, the Finnish economy has been hit by several asymmetric shocks affecting only Finland or much more Finland than its Norther European peers. The most obvious one is Nokia's loss of market shares in the cell phone production. The deepest decline in Nokia's value added in Finland coincided with the general demand shock in 2009. But Nokia continued to reduce

production (and employment) in Finland in the following years (Diagram 5). The decline on Nokia affected also smaller ICT companies in Finland.

Diagram 5. Nokia's share in GDP and Nokia employment in Finland



Sources: Nokia; Etla's calculations.

Another asymmetric shock was on paper industry. One of the many implications of digitalisation has been a secular reduction in the demand for print paper. This trend has impacted Finnish forest industry quite a bit, as the industry had specialised precisely in this type of paper production. Given the overall importance of the forest industry, also this shock was big enough to show up in the GDP numbers. Furthermore, as most of the forest industry's inputs are from domestic sources, the second round effects from this decline were significant.

A third asymmetric shock stems from the specialisation of the non-ICT part of the Finnish technology industry in investment or intermediate goods used by other businesses. A consequence of the global financial crisis has been a decline of investment activity relative to GDP. Therefore the Finnish industry suffered probably more from demand weakness than industries in countries which specialised more in producing consumer goods.

Finally, in 2014 and 2015 the significant weakening of the Russian economy affected the Finnish economy disproportionally. The decline of oil prices and the associated weakening of the Ruble reduced not only Russian demand for Finnish manufactures but also Russian tourism in Finland. Also the Russian counter-sanctions in response to the sanctions imposed on Russia, due to its actions in Ukraine, have contributed to the weakening Russian demand, but that effect has been marginal and affected mainly the export of agricultural products. Taken together, exports to Russia halved from about 9% of all exports to less than 5%.

The first three of these shocks impacted mainly on production with higher-than-average labour productivity. This goes a long way to explain why productivity declined originally so much and has been slow to recover. The picture is very different from the crisis of the early 1990s in Finland. The Finnish financial and economic crisis of that period resembled very much what we have recently seen in Ireland and Spain: a bursting of a financial bubble leading to a collapse of domestic demand with large impacts on low productivity activities such as construction and personal services. On top of this financial boom-bust sequence Finland was then

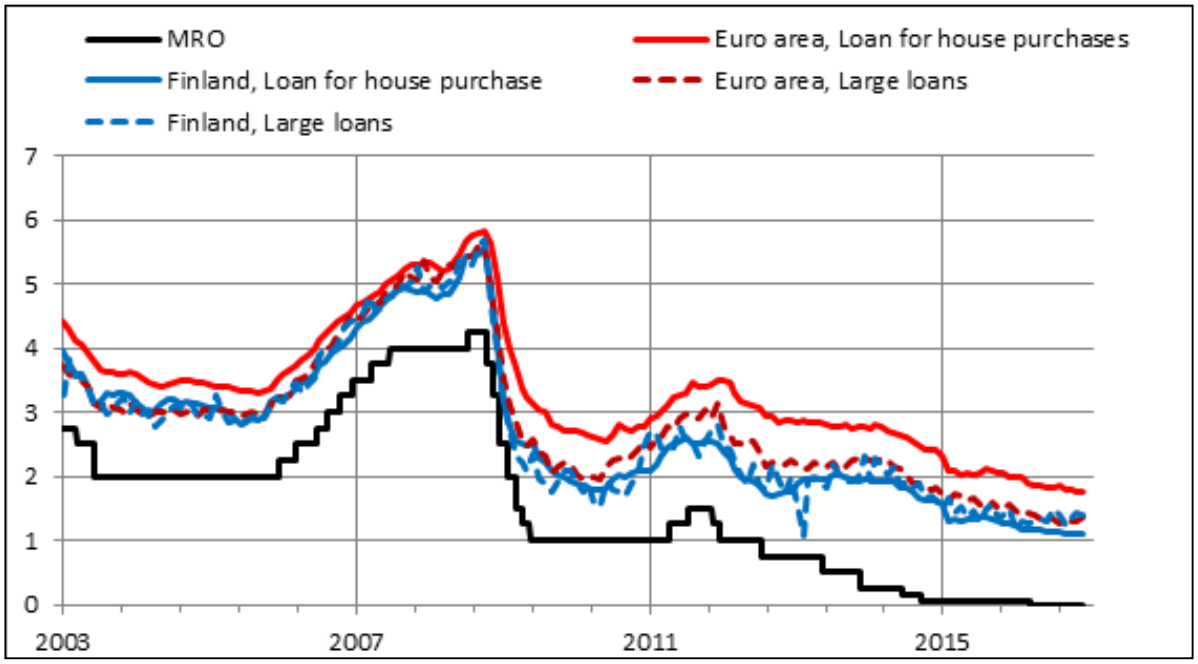
also hit by a complete collapse of the exports to the disintegrating Soviet Union. In that crisis employment declined by some 20% while aggregate productivity growth in fact accelerated slightly.

4. Monetary and fiscal policies have mitigated rather than exacerbated the impacts

The observation that private consumption has performed rather well after 2008 despite weak growth performance already suggests that macroeconomic policies hardly can have been very contractionary. That turns out to be the case.

First, as a member of the euro zone Finland has benefitted from the easing of ECB monetary policy. While this easing was not quite as fast as in the US and involved a temporary increase of policy rates in 2011, Finland has been one of the countries where monetary easing has been fully transmitted through the financial system to the non-financial sectors, i.e. businesses and households. Particularly housing loans have become very cheap in Finland (Diagram 6). The interest rates faced by SME's and households have been among the lowest in the euro area. Similarly in the lending surveys by the ECB, Finnish enterprises have reported relatively speaking very few problems of credit availability.

Diagram 6. Policy rate (MRO) and household and corporate borrowing rates



Source: ECB.

This outcome is in line with the soundness of the financial sector, as well as that of most businesses and households. The experience of severe debt service problems in the 1990s crisis incentivised both households and enterprises to reduce debt levels. The rapid income growth between 1995 and 2007 allowed them to strengthen the balance sheets substantially. Banks on the other hand had rationalised their activities drastically in the midst and after the financial crisis; employment was cut by some 50% in a few years. They bolstered their capital positions quite strongly and took a very prudent if not cautious approach to risk-taking in their lending and investment activities prior to the global crisis. As a result, there was no need to curtail lending drastically when the global crisis hit.

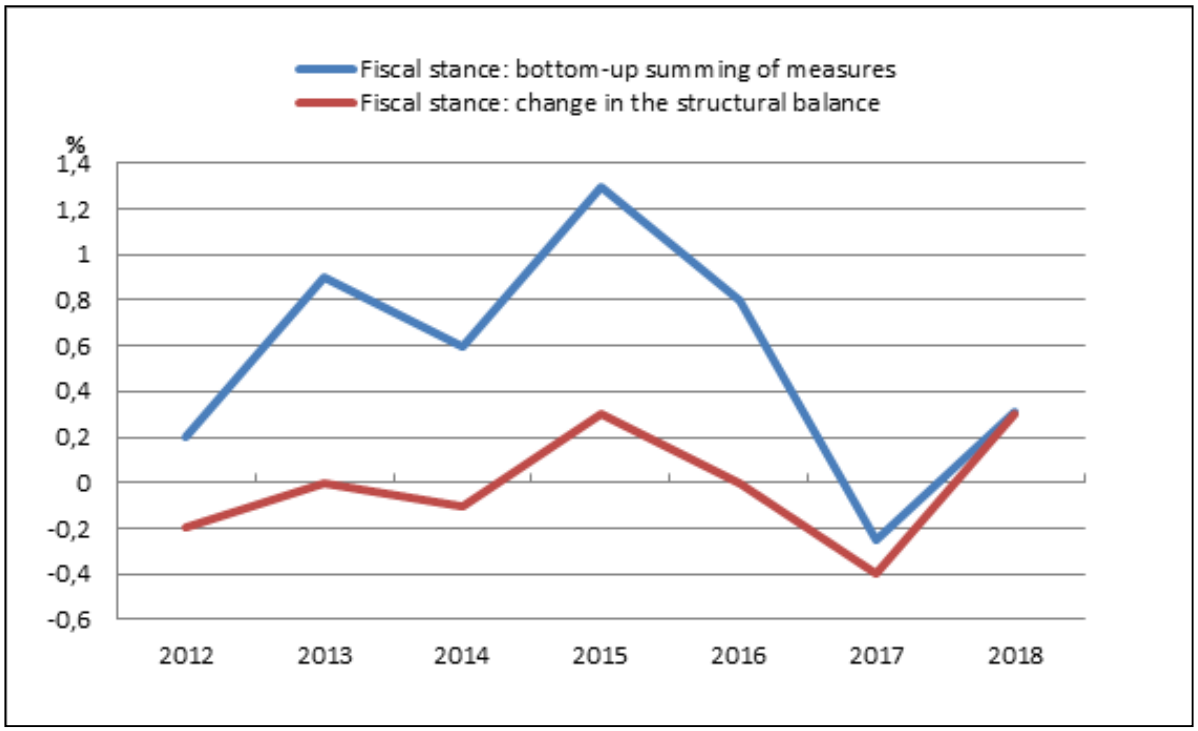
Second, fiscal policy has also been expansionary or at least not contractionary since 2008. Finland joined the co-ordinated fiscal stimulus programme decided by the EU countries in the autumn 2008. This produced significant discretionary easing in 2009 and 2010.

When public debt started to increase rapidly and all calculations suggested that Finland had a long-term sustainability gap due to rapidly ageing population, fiscal consolidation started in 2011. Bottom-up calculations suggest that the government in power in 2011-2015 took consolidation measures to the tune of some 3% of GDP and the current government has continued consolidation so that by 2019 there will be an additional fiscal effort of 2% of GDP.

Paradoxically these consolidation measures do not really show up in standard top-down indicators of fiscal policy stance for the public sector as a whole, such as the change of the cyclically adjusted budget balance or the so-called structural balance that excludes one-off measures. The main explanation is that because of rapid demographic change, the earnings-related partially funded public pension system has produced an expansionary impact of roughly the magnitude that corresponds to the discretionary consolidation measures. This is so, because the increase of pensions paid out has been much larger than the increase of contributions paid by the slightly diminishing working age cohorts.

While the pension-system-related expansionary effect is not due to discretionary decisions of the contemporaneous governments, it is neither cyclical. Therefore it shows up as a discretionary expansion in the top-down fiscal measures. Thus, while summing up consolidation measures "Bottom-up" would suggest a tight fiscal stance, the "top down" calculation of a cyclically adjusted or structural balance suggests a more or less neutral stance (Diagram 7).

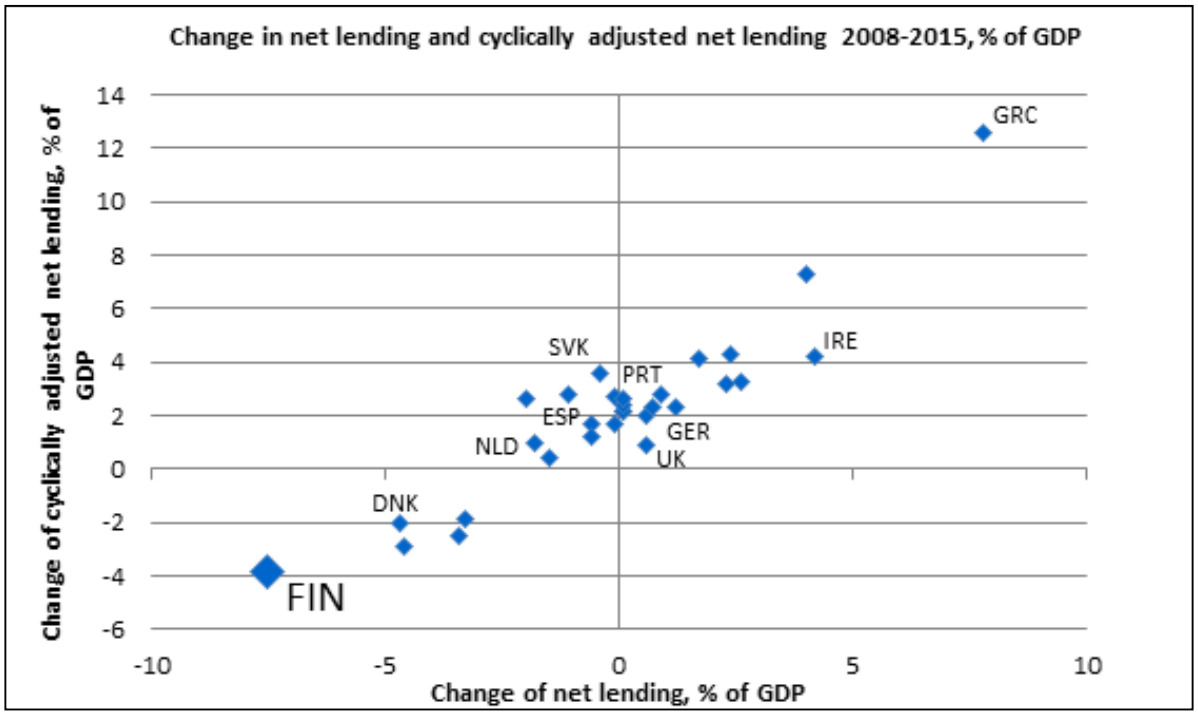
Diagram 7. Fiscal stance bottom-up and top-down



Source: Ministry of Finance.

According to the top-down measures Finland had cumulatively the most expansionary fiscal stance between 2008 and 2015, and one of the least contractionary stance since 2010 in the whole EU. Given that also automatic stabilisers are strong in a high-tax country like Finland, the contribution of public finances to the support of demand was also the strongest in the EU area (Diagram 8).

Diagram 8. Finland's fiscal policy in an EU perspective



Source: Ameco.

5. Wage flexibility is not in line with the euro requirements

The shocks that have hit the Finnish economy have not only been large but they have also been for the most part permanent rather than temporary. It is quite obvious that Nokia's very profitable cell phone production has been lost for good. The market has been taken over by other producers. This implies that not only the production of the cell phones was discontinued in Finland but that also the value added that accrued to the head quarter functions in Finland was slashed. Nokia's research and development activity has diminished substantially.

By the same token, demand for print paper is unlikely to recover. Even global investment activity as a share of GDP is likely to remain lower than it used to be for quite some time. The estimates of potential growth have been slashed since the global crisis, even if there is no consensus on the precise reasons for what has become to be called secular stagnation. Of the four shocks, only Russian demand might be more transitory than permanent. But even here it is difficult to see a strong recovery in the medium term, given the many weaknesses of the Russian economy.

While expansionary macroeconomic policies can mitigate the impact of negative demand shocks, the only way to avoid longer term loss of activity is through adjustment. In the medium term the key issue is cost competitiveness. As Finland is a small open economy, it should be in good position restore a high employment level relatively quickly if the labour market would respond fast to the shock in the demand for labour. Furthermore, the fact that there was no financial crisis in Finland and household indebtedness was not

a major problem, even a strong wage adjustment to improve cost competitiveness would probably not have led to debt service problems that could have weakened domestic demand exceptionally. Unfortunately wage adjustment has been very slow.

The onset of the crisis was in fact associated with acceleration rather than deceleration of labour costs. Also in the following years there was hardly any downward adjustment of labour costs relative to its main competitors. As the relative productivity weakened in the first years of the crisis, relative unit labour costs increased rather than declined.

When Finland was considering joining the EMU in the 1990s, the potential problem of asymmetric shocks was discussed quite extensively, given the difference in the production structure vis-á-vis the euro area average. It was recognised that much more nominal wage flexibility than before would be needed to avoid demand shocks leading to severe employment losses.[1] Those who supported the membership trusted that the labour market would internalise the requirement. In fact, a small buffer fund was set up by the labour market partners to be used to temporarily lower indirect labour costs in the case of severe shocks. It was also expected that the economy would develop less asymmetric relative to the euro area, thus making the likelihood and severity of shocks less important.

Unfortunately, the experience since 2008 has proved that not only Finland remains vulnerable to asymmetric shocks but its labour market has been slow to adjust to mitigate such shocks. It is obviously difficult to say how much of the some 4% of the employment loss since 2008 could have been realistically avoided through a more flexible wage formation. In all countries nominal wages tend to be rigid downwards. Furthermore, as the start of the asymmetric shocks coincided with the global liquidity shocks in 2008 and 2009, it was unclear as to how much of the loss of demand was due to temporary global shocks and how much was it idiosyncratic to Finland requiring adjustment.

A simulation exercise suggests nevertheless that not-too-demanding wage moderation could have resulted in substantially better employment outcome. It does not seem unreasonable to expect that by 2011 the actors in the labour market could have recognised the need for wage adjustment. Let us thus assume the contract wages agreed by the labour market partners had been frozen at the 2010 level since 2011. A simulation of the Etla macro model indicates that by 2016, GDP had been some 3-4% higher and employment almost 2% higher than in the benchmark case. Thus almost half of the employment loss could have been eliminated by a wage freeze starting some two years after the start of the global crisis.

6. But has there been a problem of real competitiveness as well?

While greater wage flexibility would have speeded up employment recovery, it probably would have had little if any positive impact on productivity growth, which, as discussed, accounts for most of the loss of GDP relative to the pre-crisis trend. Part of the explanation for the weak productivity growth obviously is the global trend. Productivity growth has been much slower in all high productivity countries for more than a decade, for reasons not fully understood yet[2]. As the Finnish manufacturing was close to or in some branches even at the productivity frontier prior to the crisis, it hardly could have avoided the impact of the global productivity slowdown.

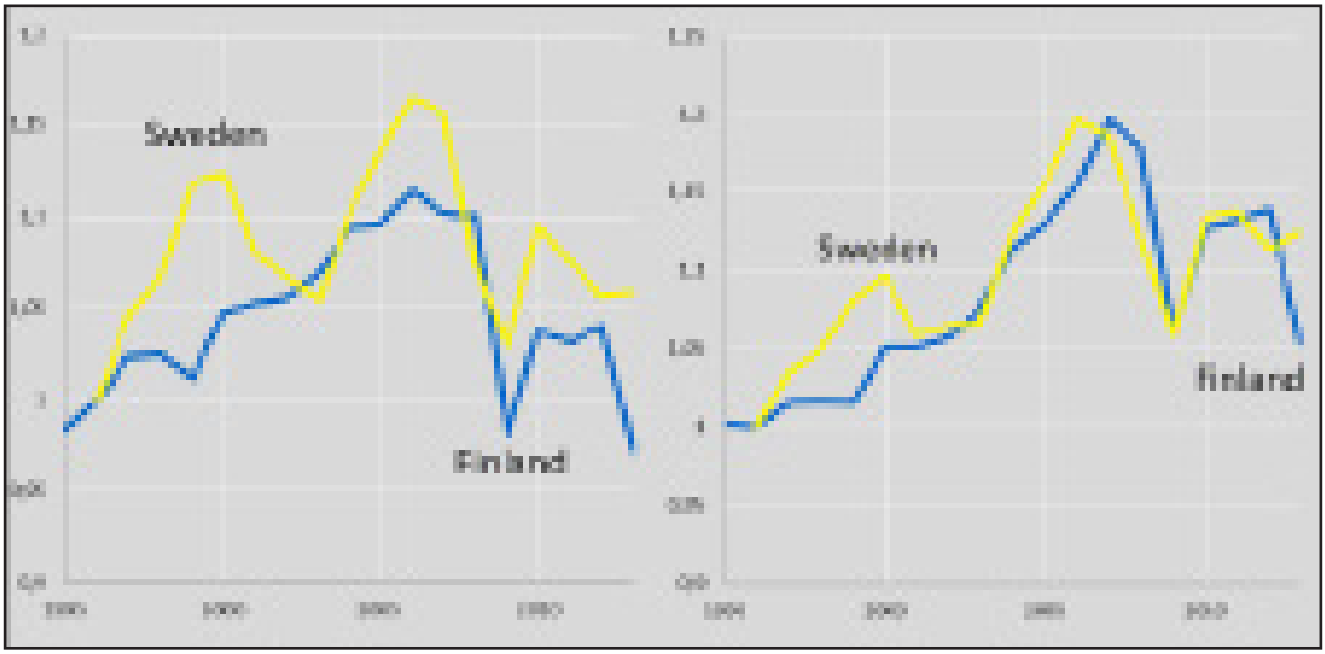
1 The challenges created for labour cost adjustment by asymmetruic shocks were discussed in several expert reports prior to the decision to join the EMU. These included an expeort group appointed by the prime minister.
2 For a recent discussion of the potential reasons for the productivity slowdown, see Haldane (2017).

However, aggregate productivity growth has been weak even compared to some of Finland's European peers, such as Sweden and Germany. Part of even this weakness can be explained by the prolonged series of shocks to the high-productivity sectors of the economy. Some calculations suggest that at least compared to Sweden almost all of the recent differences in the business sector productivity growth is due to differences in production structure (Diagram 9).

Diagram 9. Productivity in Finland and Sweden

Business sector productivity

Business sector productivity, normalised branch structure



Sources: EUKlems; Etla's calculations.

Still, one can ask whether the introduction of new high-value added products could have been faster or whether companies with various location options could have chosen Finland more frequently as their place of value creation. These are legitimate questions given Finland's strong showing in various comparisons of factors that are supposed to facilitate innovation and support the competitiveness of the country as a location of economic activity: level of human capital, quality of the innovation system, quality of political and economic institutions, prowess in key technologies, openness to trade and human interaction.

Table 1 presents a selection of comparisons of Finland with its Northern European peers. The number after the country name refers to the global ranking. While the summary indexes of this type are always somewhat arbitrary with regard to both the components and their weights, they probably still reflect something relevant.

The overall impression is that Finland should indeed be well placed to adjust and grow fast. First, in all indexes shown the six countries are at or close to the global top. Secondly, Finland is assessed to be at least as good as its peers in indexes that are intended to measure the quality of human capital and education, quality of economic and political institutions and the access to mobile connectivity. Denmark, the Netherlands and Sweden rank, however, just ahead of Finland with regard to the overall digitalisation of the economy, proficiency in English and degree of globalisation.

Table 1. Northern European countries in selected competitiveness comparisons. The number after the country refers to the global rank in the comparison

HUMAN CAPITAL	EDUCATION	INNOVATION	QUALITY OF INSTITUTIONS
FIN (1)	FIN (1)	FIN (3)	FIN (1)
SWE (2)	DEN (3)	GER (5)	DEN (2)
DEN (7)	GER (7)	SWE (6)	SWE (3)
NLD (8)	SWE (11)	NLD (7)	NLD (4)
GER (11)	NLD (16)	DEN (8)	GER (6)
UK (19)	UK (25)	UK (13)	UK (7)
WEF Human Capital Report 2016	*OECD Better Life Index*	*World Bank WGI Index*	*WEF Global Competitiveness Report*
NETWORK READINESS	**DIGITALIZATION**	**PROFICIENCY OF ENGLISH**	**GLOBALIZATION**
FIN (2)	DEN (1)	NLD (1)	NLD (1)
SWE (3)	FIN (2)	DEN (2)	DEN (7)
NLD (6)	SWE (3)	SWE (3)	SWE (8)
UK (8)	NLD (4)	FIN (5)	FIN (11)
DEN (11)	UK (7)	GER (9)	UK (20)
GER (15)	GER (11)		GER (27)
"WEF Global Competitiveness Report"	*"EU Digital Economy and Society Index"*	*Education First (EF)*	*KOF Index of Globalization*

These observations definitely support the idea of underperformance relative to fundamentals. At the same time, they may also give some hints about the potential weaknesses. The export success of Finland between 1995 and 2008 centred on products, in which the technical excellence of the products, on the one hand, and the efficiency of the manufacturing and logistical processes, on the other hand, were essential. Engineering prowess and process competences were the key competitive assets, and in these Finland excelled.

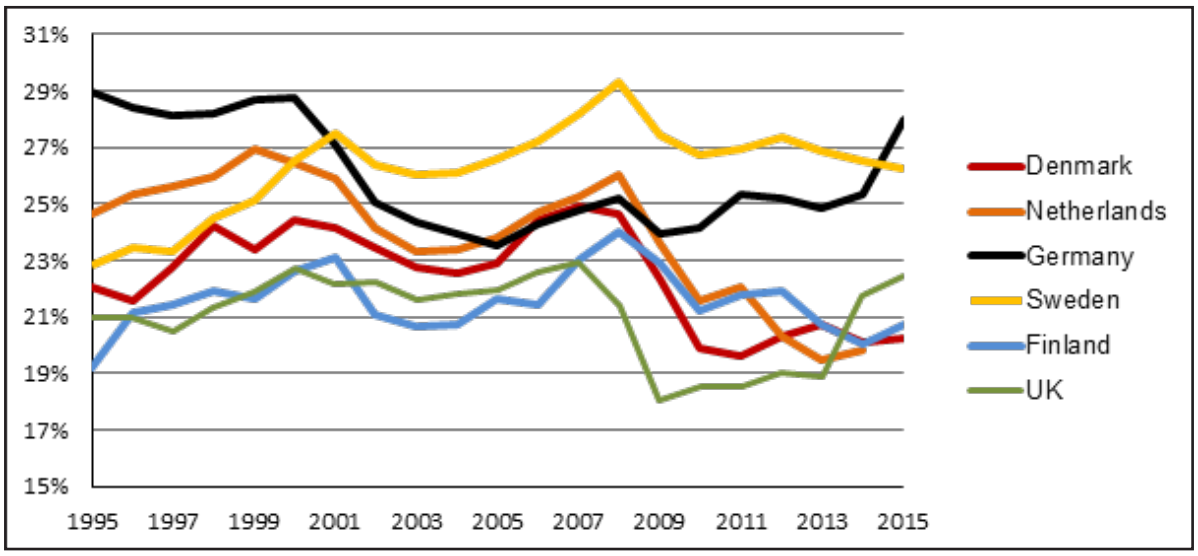
When Nokia phones started to fall out of fashio n, paper demand declined and businesses reduced investments in machines and equipment, these strengths were not any more sufficient. The new growth has been more in services than manufacturing. High-value added production has required continuously more tailoring to the needs of individual customers. Digital platforms have benefitted those willing to take risks in launching new products and services, and capable of rapid scaling-up of successes. Often winner takes, if not precisely all, at least most of it. In the new environment understanding customer needs and consumer behaviour in different parts of the world has gained in importance relative to technical excellence. Similarly, radical innovations have become relatively more important than incremental improvements.

It may not be farfetched to claim that Finland has been at least somewhat behind its peers with regard to the competences and capabilities that have become more important. Finland has been more an engineering and business-to-business country than, say, Sweden, Denmark or the Netherlands. Finland has also been less internationalised, with a weaker tradition of external trade and by far the lowest share of foreign-born population. The home market has also been smaller than in the peer countries, save Denmark, and geographically Finland has been more isolated from large markets as well. The venture capital market has also been smaller and less developed than in the peer countries.

These handicaps could quite well have slowed down the necessary adjustment towards the type of production that has chances of success in the new environment. The importance of these factors is nevertheless difficult to ascertain. It is definitely true that the Finnish business sector has been less keen on renewing and expanding their productive capacity than businesses in the peer countries. But this applies to the whole period since

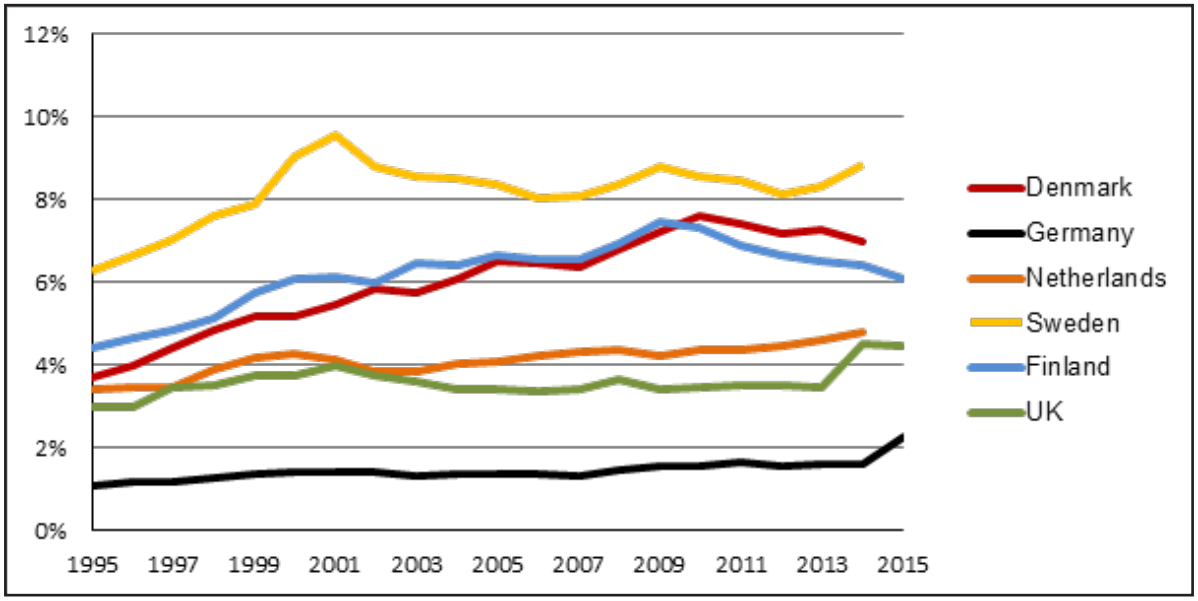
the 1990s crisis, including the years of exceptionally fast growth. Furthermore, with regard to investments in intangibles, which probably are more relevant for business renewal in current circumstances than brick and mortar, Finland has done better in relative terms (Diagram 10, panels (a) and (b)).[3]

Diagram 10. Business investment, % of value added (a)



Note: A narrow business sector, excluding primary production, education, health and social services, entertainment, household and public sector activities.
Source: Eurostat, Etla's calculations.

Diagram 10. Business investment in intangibles, % of value added (b)



Note: A narrow business sector, excluding primary production, education, health and social services, entertainment, household and public sector activities.
Source: Eurostat, Etla's calculations.

3 Ali-Yrkkö, Kuusi and Maliranta (2017) discuss the recent level of investment activity in Finland and to what extent it might be too small, and if so, for what reasons.

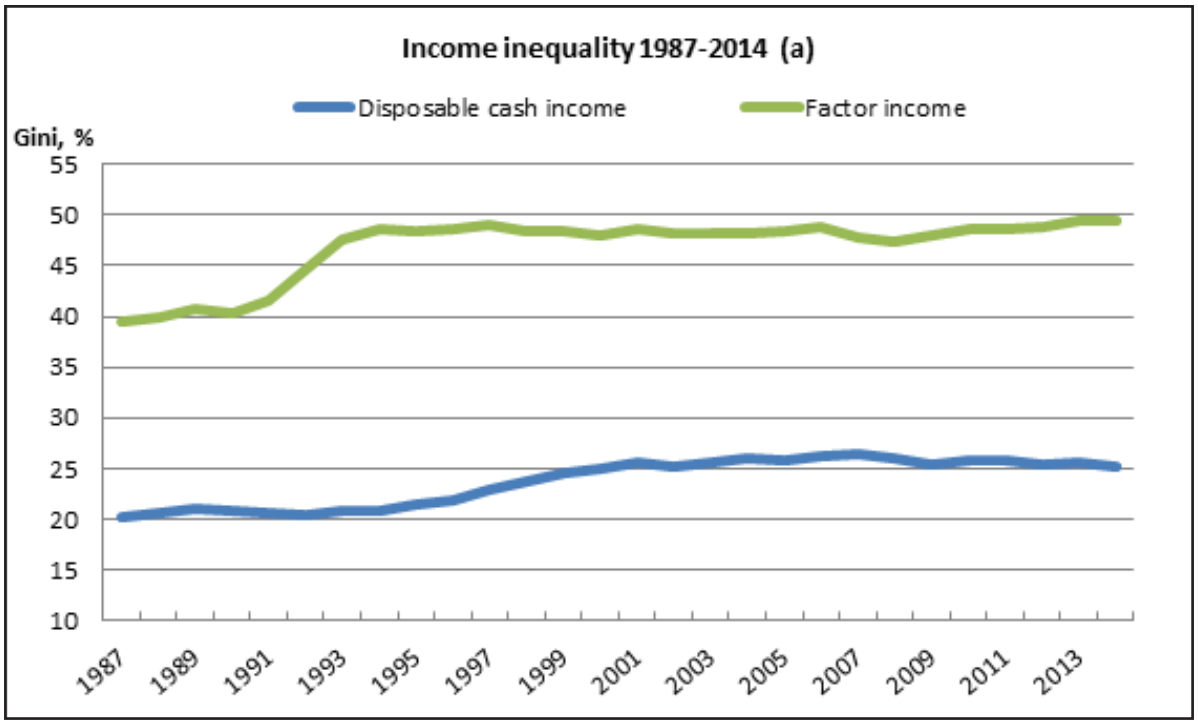
7. Social cohesion has held up rather well

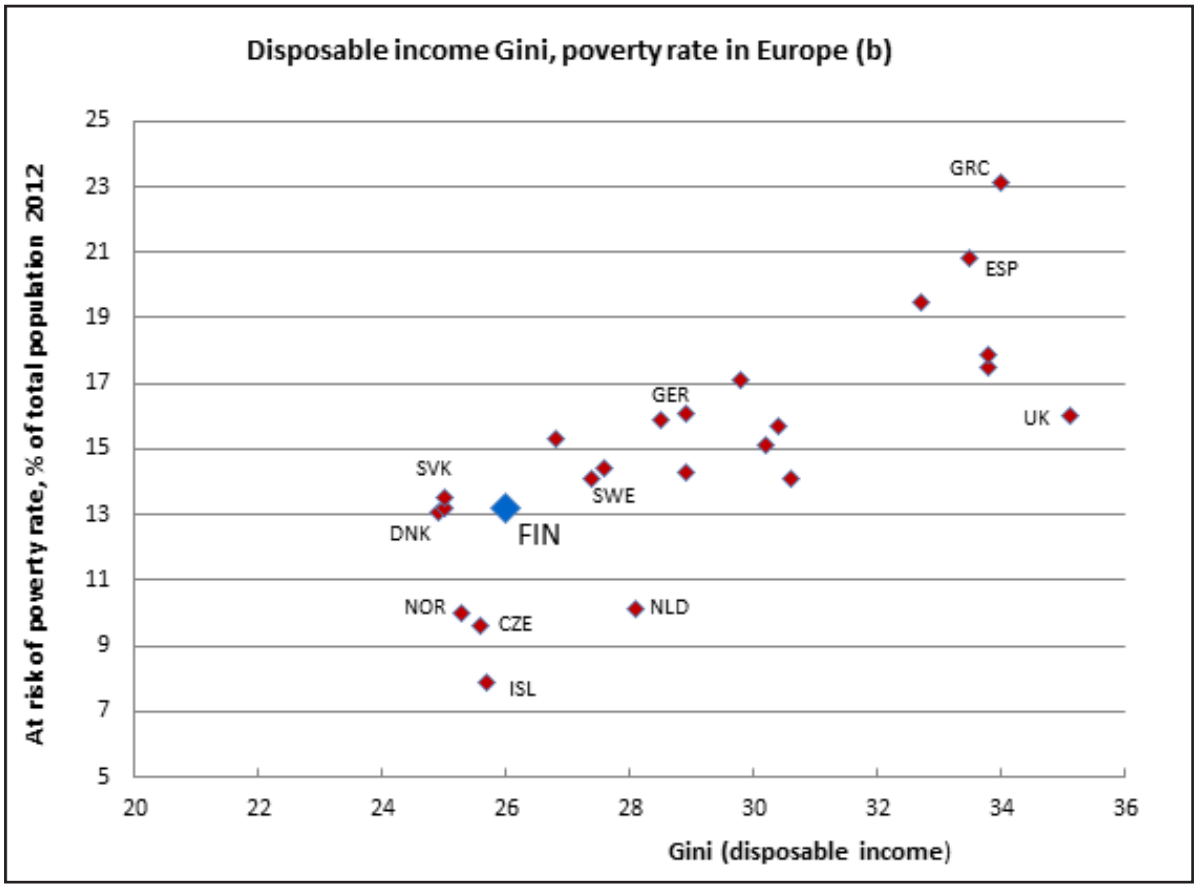
The global economic crisis and the slow recovery have brought income disparities, social exclusion and the loss of traditional decently paying jobs to the forefront of political debate. A very popular explanation of the recent political backlashes to globalisation, such as the outcome of the Brexit referendum in the UK, and the election of Donald Trump as the president in the US has been the widening of the income disparities and in particular the relative decline of the "middle classes".

Against this backdrop, it is interesting that income disparities have not increased at all in Finland over the last 15 years. This holds both for the overall income disparity measures such as the Gini-coefficient and for the share of the poor. While this has been the case, Finland has not been spared from hollowing out of the labour market, at least some degree, in the sense that the relative share of jobs in the middle of skill-requirement range has declined. How can one explain these facts?

One reason is that the decline on the high-productivity branches such as the ICT and paper industry, following the global crisis, impacted first and foremost capital incomes and labour incomes at the above-average wage levels, and that the second round effects on employment have not been particularly strong. Therefore, disparities of market incomes did not widen early on in the crisis. Secondly, while there has been some widening of market income differences in recent years, the redistribution has increased owing to several adjustments in transfer schemes and some tightening of capital income taxation and higher progressiveness of taxation of earned incomes (Diagram 11, panels a, b).

Diagram 11. Inequality in Finland and EU countries (a, b)





Source: Statistics Finland, OECD.

Nevertheless, there are at least two worrisome aspects which could lead to steeper problems of inequality over time. The first one is a stubborn increase of long-term unemployment. The share and in fact also the absolute number of long-term unemployed have continued to climb. At the same time, the share of prime-age males outside the labour force has continued to increase and remains above that of the OECD average, even that the OECD average has climbed until recently, too. Without a steady improvement of the labour market conditions and effective targeted measures, these trends are likely to lead a large number of people being effectively excluded from the labour market and also to increasing poverty among these people.

The second problem is the weak attachment to the labour market of those young people who do not engage in or drop out of secondary education and are not immediately be employed. The fraction of these NEET's (not in employment, education or training) in the age group 15 to 29 years of age has increased to the OECD average, which is well above that of Finland's Nordic peers.

8. Policies have responded, eventually

The global financial crisis that started in the autumn of 2008 was widely perceived in Finland as a purely external demand shock that did not require any country-specific response but common action to uphold global and European demand. Consistently with this view Finland not only allowed the rather strong automatic stabilisers to function but also participated in the discretionary fiscal easing implemented by the EU countries in 2009 and 2010. As discussed earlier, these discretionary measures in combination with the underlying expansionary shift in the net financing of the pension system resulted in the most expansionary fiscal stance in the whole EU. Finland also participated in the concerted actions to provide the banking sector

with extensive guarantees, but it was well understood that these measures would not really matter given the underlying strength of the domestic banking system and its limited risk exposures.

In the first years after the initial shock the economic challenge was mainly seen in terms of a further pressure on the long-term sustainability of public finances. Already before the crisis there was quite a bit debate about the need to have a major new pension reform (on top of the one that took force in 2005) to put the pension system on a sustainable basis. The automatic and discretionary fiscal easing of 2009 and 2010 weakened obviously the starting point further. This led the new government to start fiscal consolidation in 2011 and put pressure on the labour market partners to agree on a pension reform that would reduce future pension expenditure.

However, it took a very long time for the decision makers to realize that there were serious asymmetric elements in the weak external demand conditions Finland faced. The Minister of Finance of the time, Jutta Urpilainen, publically stated in 2014 that the government really realized only in the spring of 2013 that the Finnish economy has severe structural problems of its own, and did not face just a temporary demand shortage stemming from the global financial crisis and the euro crisis.

Policy measures to address Finland's competiveness problems and more persistent structural challenges were slow to materialize because of the late recognition of the problem and political inertia. While the government started to speak about the importance of wage moderation, it did not manage to influence wage formation very much. Hardly any reforms were taken that could have affected the functioning of the labour market in the short or medium term.

On the other hand, the pension reform decided in the autumn 2014 was a significant step to improve the sustainability of public finances and also to increase labour supply. However, its effects are going to materialize very slowly, as the reform started to be faced in at the beginning of 2017 and the key elements that spur labour supply have long transition periods.

The current government has a much more ambitious reform agenda in principle. It has aimed at a rapid improvement of cost competiveness through a "social contract". The original idea was to combine fiscal devaluation type of measures (reduction of indirect labour costs) with legislated lengthening of working hours to achieve 5% decline in the unit labour costs. This was to be followed by a period of extreme wage moderation to produce an additional improvement of the relative unit labour costs by 5% in a few years' time. However, the one-off cost reduction plan could not be implemented because of a strong resistance by the labour unions and also some legal problems.

As a substitute, the government negotiated a "competitiveness pact" with the labour market partners. The pact involves a reduction of employer contributions, partly financed by higher employee contributions, and an increase of annual working time implemented through revisions of wage agreements. The estimated impact on unit labour costs is around 3.5%, and the measures took force mainly as of the beginning of 2017. There is also an agreement to freeze contract wages for 2017 and to negotiate about a new "Finnish model" of wage formation, in which the contract wages in the whole economy would be determined by competitiveness considerations of the industries faced with foreign competition. The outcome of these negotiations is unclear yet.

A second pillar of the government's policy has been to reform the framework conditions in the labour market to make the markets more flexible, to reduce disincentives to hiring and to spur labour supply. The reforms implemented include a shortening of the benefit duration of the earnings-related unemployment compensation by 100 days to 300 (in some cases 400) days, a shortening of the time during which employers have to offer re-employment to employees who have been laid off if the employer increases employment, and lengthening of the testing period in new work contracts.

The government had also an ambitious plan to widen the scope of local negotiations on work conditions. Steps towards this objective were taken in conjunction with the competitiveness pact. However, these changes apply only to organised employers and concern mainly exceptional situations when the company is in grave difficulties. The vast majority of small employers who do not belong to the employer organisations, and those who have to apply the agreements by extension, do not benefit from the added flexibility at all. It also seems that further reforms to improve chances for local negotiations are unlikely, as the government committed in the competitiveness pact to refrain from revisions of labour laws unless agreed with the labour market partners.

The third major effort of the government is to reform social and health care services. The aim is to reduce long-term expenditure pressures and to ensure better availability of such services. This implies that even a successful reform is unlikely to impact on the economy's performance in the short or medium term. Given that the reform involves extensive new opportunities for private producers, the reform may nevertheless encourage innovations and productivity in health care provision. The reform is in any case very complex and it is next to impossible to assess its effects at this point.

Liberalisation of many regulations is also high on the government agenda. Shops' opening hours were completely freed as of the beginning 2016. The government has also proposed to discontinue setting limits to the number of licences to drive taxi and to liberalise constraints on selling alcoholic beverages.

While many of these reforms can be considered good for growth, the government's approach to developing the education, research and innovation system raises many more questions. There are plans to make much more use of modern digital technology in the schools, to simplify the entrance criteria to different educational establishments, to make both the secondary and the tertiary education more efficient through specialisation and consolidation.

However, at the same time the government has made substantial cuts in the spending for secondary and tertiary education, basic research funding and also funding directed to R&D activity in the private sector. According to many experts the degree of the expenditure cuts not only makes it impossible to reach the objectives of improving educational standards and to strengthen innovation activity, but in fact weaken the capacity and attractiveness of Finland as a place of research and innovation.

9. Growth has resumed, but policy objectives are unlikely to be achieved

The short-term outlook of the Finnish economy has brightened considerably since early 2016. With a GDP growth of some 1.5%, 2016 turned out to be the first year of positive growth since 2011. Also employment has started to increase.

The improvement of growth has so far come from domestic demand. Private consumption and construction activity have increased while export growth has not accelerated yet. The drivers of this demand growth can be assessed to be low interest rates, somewhat more expansionary fiscal policy (including temporary increase in infrastructure spending) and accumulated investment needs.

While faster inflation and some elements of the competiveness pact weaken the purchasing power of the households in 2017, employment growth partially compensates for that. Consumer confidence has in fact improved significantly. Furthermore, surveys suggest that business investment is likely to accelerate and also the export outlook is becoming somewhat more positive. Market growth is set to continue in 2017 and 2018, and the gradual improvement of cost competitiveness is expected to contribute to a better export performance.

Nevertheless, projected growth remains too weak to achieve the government's employment objective by 2019, which is the last year of the current parliamentary period. The objective is an employment rate of 72%, which would require an increase of jobs by a bit over 100 000 from the level of 2015. The official forecast by the Ministry of Finance projects, in line with many other forecasts, roughly half of the required increase[4].

The projected GDP and employment patterns imply that the achievement of another key objective for the government, i.e. getting the ratio of public debt to GDP onto a declining path, also remains uncertain. While the headline deficit is likely to remain under 3%, the so-called structural balance is unlikely to decline to the medium term objective (MTO) of -0.5%. Whether or not Finland would violate the "preventive arm" of the Stability and Growth pact would depend on various flexibility clauses.

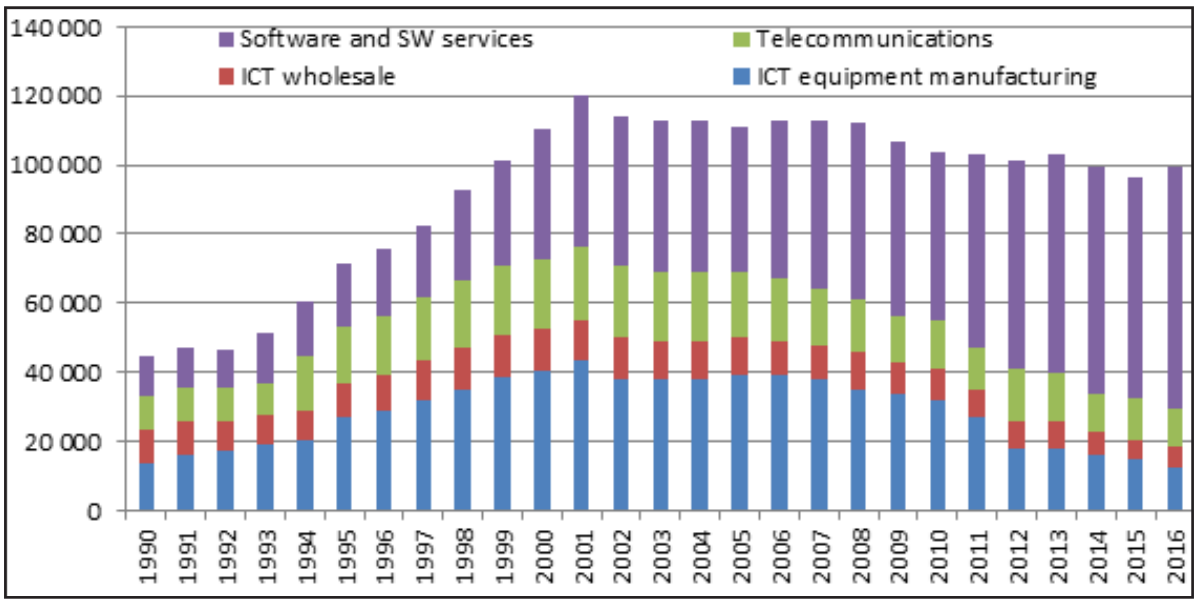
10. Medium-term prospects are improving as well, but much remains to be done

Apart from a better short-term outlook, some factors point to brighter medium-term prospects as well. First, it seems quite possible that the level of cost competitiveness is going to remain significantly better at least until the early 2020s. Even if the negotiations on the "Finnish model" of wage setting are not proceeding as planned, there seems to be a reasonably wide consensus that wage developments must be much more supportive of competitiveness than has been the case until recently. Second, while the labour market reforms so far enacted fall short of what many economists consider important for labour supply and efficient reallocation of labour, they nevertheless are likely to increase labour supply and make hiring and firing easier for companies than it used to be.

Third, there has been substantial restructuring in the business sector. In the ICT the lost jobs related to the production of ICT equipment and also telecom business have largely been replaced by new jobs in software development and services (Diagram 12).

4 Etla's most recent macroeconomic forecast (Etla 2017) projects an increase of employment by 50 000 between 2015 and 2019.

Diagram 12. ICT sector employment



Source: Statistics Finland.

In forest industry, production of print paper has been reduced, while production of packaging material has increased. Perhaps more importantly a concept of bio-refinery seem to be taking hold in that different parts of wood are being used more efficiently for different purposes. All major forest companies are investing in the new technologies and processes that make better use of different elements of the raw material.

Also in the technology industry outside the ICT restructuring has taken place. Ship building, which was under a threat of disappearance, has started to grow again thanks to the acquisition of a major ship yard by a strong European ship builder. The assembly of high-end autos has been expanding and the companies in the energy technology have diversified from equipment building increasingly towards providing services.

Fourth, start-up activity has been booming for years. SLUSH has developed into one of the most important annual start-up events in Europe with some 15 000 participants. Venture capital activity has increased and clearly more investments are made in Finland relative to the size of the economy than in Europe on average.

Nevertheless, there is no evidence of an acceleration of productivity growth so far. Similarly there is a long way to go to lift the employment rate to the level reached in the other Nordics and Germany. Finally, ageing proceeds relentlessly and is putting substantial pressure on labour supply and the demand for health and old age care services. All these suggest that continuing reforms across the board is necessary to ensure that the observed improvement of the outlook is the beginning of a return to the high-performing economy that Finland was just a decade ago rather than a temporary flip.

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Lessons in stabilization and prospects for growth: Russia's economic policy in 2016[1]

Vladimir Mau

1. Introduction

Economic growth is a primary challenge of the political agenda of leading countries, including Russia. This study discusses existing hypotheses that are related to "secular stagnation" and the "productivity paradox", which include the demand side of the problem (cyclical factors), special features of technological innovations (technological factors), anti-crisis policy that prevents "creative destruction" (political factors), and the irrelevance of the GDP measurement (statistical problems). Limits to growth contribute to a new global policy trend and the emerging of populism; this study discusses the prospects of the transformation from political populism to economic populism. Global challenges provide the basis for a more extensive analysis of Russian economic development and, particularly, the results of the 2015–2016 anti-crisis policy, which helped the Russian economy to adapt to the new economic realities of the post-crisis world.

The world is searching for a new socioeconomic development paradigm, which is occasionally referred to as the "new reality." When considering prior structural crises (in the 1930s and 1970s), this search has lasted approximately a decade and has been characterized by volatile economic trends, political crises and social instability. Prior experience should by no means be bluntly applied to the future, and the duration of the "turbulent decade" can only be determined by future economic historians. However, it is evident that a primary issue on political and intellectual agendas is a new economic growth model and its potential rates and sources.

2. Discussing the prospects for economic growth

The prospects for economic growth present a significant challenge that will define the development of other vital structural processes during the 21st century, i.e., the trend towards globalization (or de-globalization), new industrialization (structural modernization), and the development of human capital.

We have witnessed the deceleration of economic growth rates since the beginning of the global crisis (i.e., roughly since 2008). Although this trend appeared to be temporary at first and was expected to dissipate in the foreseeable future, after approximately ten years, it became clear that the situation was far more complicated than expected. Economists predict an approaching long secular stagnation and politicians have begun adapting to the new reality, which results in a sharp and explosive rise in populist sentiment. In fact, these were the two primary aspects of 2016: low (and decelerating) economic growth rates and rising political populism. Clearly, these two issues are related; economic hardships encourage politicians to adopt populist slogans, if not populist actions.

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The ongoing economic deceleration had multiple causes and economists are focused on analyzing them. Modern growth is certain to be a highlight of future discussions regarding economics, political science, and political economy. One reason for this decelerating global development is lower growth rates in China and India, which they are, quite naturally, experiencing as they achieve economic maturity and a more stable condition similar to developed countries. The deceleration in global development could have been counterbalanced by emerging new opportunities for an accelerated technology transfer to other countries and regions of the world (e.g., to Africa), but this is more of a political and institutional matter than an economic issue thus far.

The deceleration may be partly attributable to cyclical factors, i.e., the low investment activity that is reflected in the excess of savings over investment that is characteristic of most developed countries. This is period of decreased investment is seemingly associated with a high level of uncertainty, which is natural during technology upgrades and anticipated structural reforms.[2]

However, the problem of economic growth does not only refer to decelerating global trends or the specifics of the modern business cycle. In the traditional economic development model that includes recessions and recoveries, the primary question following a crisis is concerned with the actual level at which the recession will stop and economic growth will commence. The events after 2008 clearly demonstrated that a downturn may be followed by stagnation or low growth rates; recovery is not automatic. This results in a need to change the substance of anti-crisis policies, which should no longer be limited to fighting recession, but propose measures to ensure acceptable growth rates (or accelerating potential growth). The need for a change in anti-crisis policies is the greatest challenge of the current global crisis and the essence of what is referred to as the "new economic reality".

Lengthy stagnation in a developed country is not a new problem and has been occurring in Japan for a quarter of a century. It has been demonstrated that a developed economy may stagnate over a long period of time while maintaining a high level of well-being and avoiding grave social problems. In the past, it appeared that this phenomenon was specific only for Japan. However, it is now evident that we are facing a new phenomenon that results in a need for research and adequate policy. The European Union has been in a similar situation for approximately five years. Russia is also faced with risk of long-term stagnation, for which "reaching the bottom" (which was discussed vigorously in 2015 and 2016) does not imply returning to sustainable growth. This problem may be regarded as an intellectual challenge of sorts, similar to the Keynesian revolution. During Keynes' time, however, certain automatic anti-crisis regulators were activated (to mitigate the consequences of the crises); however, the present situation indicates that a dedicated policy should be developed to ensure growth.

Several cyclical, technological, political, and statistical hypotheses have emerged in an attempt to explain this phenomenon. Four possible explanations of the growth situation have been proposed. Despite their differences, absolute alternatives are not provided and the current situation is the result of a certain combination of these alternatives.

Cyclical factors: this perspective attributes deceleration to insufficient aggregate demand, which is reflected in a negative gap between investments and savings. The historically insufficient demand stagnates growth in

2 R. Shiller, Nobel Prize winner in economic sciences (2013), attributes this deceleration to a "loss of economic confidence" (an expected business activity by companies and households' income and employment) and "economic policy uncertainty" (regulations, taxes, etc.) (Shiller, 2016).

the GDP and productivity, even near-zero interest rates will not stimulate economic growth (Summers, 2014)[3]. Inequality appears to contribute to the problem, because the majority of the population has not experienced income growth and the excessive concentration of income in the hands of a few results in an increase in savings that is detrimental to demand, thereby creating additional incentives for deceleration.

Technological features: an alternate approach attributes the deceleration to limited supply, and most importantly, a limited supply of innovation (Cowen, 2011; Gordon, 2016; see also Gordon, 2013). The potential deceleration of technical progress has a lesser impact on productivity by technical innovation, particularly when compared with the technical revolution at the turn of the 20th century. This approach focuses on the exhaustion of modern economic growth as we have known it since the mid-18th century, which has become a significant mystery for economic science (particularly, economic history).

However, certain advocates of attributing the deceleration to technological factors maintain an optimistic interpretation of the problem; technological deceleration is a temporary phenomenon because of lags between the introduction of advanced technology and the spread of its effects to other industries and, accordingly, to growth in the GDP and productivity (Mokyr, 2014). This perspective relies on recent economic experience. For example, in 1987, R. Solow noted that the "computer era is visible everywhere except for productivity statistics," (Solow, 1987, p. 36). Approximately 15 years later, this effect was reflected in statistics and did not require additional proof. However, prior to that, business models had to be significantly transformed beyond the comprehensive implementation of computer technology in industrial processes (Brynjolfsson & Hitt, 2000; Brynjolfsson & McAfee, 2011). Therefore, we presume that over time, the effects of innovations are reflected in economic growth statistics, particularly because new models of governance and business forms emerge[4].

Political factors: the third explanation for the deceleration is related to specific features of political processes and their influence on the economy, which include the priority of short-term political goals over long-term structural objectives. To prevent grave social and political implications from the crisis (and considering the Great Depression of the 1930s), governments of developed countries have taken unprecedented steps to rescue existing companies and banks, thereby destroying the opportunity for Schumpeter's "creative destruction." (The Japanese government acted in a similar manner during the 1990s, which resulted in zombie banks and companies). A soft monetary policy (extremely low or negative interest rates) does not stimulate economic activity as much as it alleviates the debt burden on the state and corporations by improving the position of debtors relative to creditor interests (Wolf, 2016)[5]. Through these processes, this policy prevents a potential increase in bankruptcies.

In a more severe interpretation, central banks have assumed functions that are similar to those performed by Soviet-type central planning agencies that were tasked with preventing crises and bankruptcies. The actions

3 "The global savings glut and low inflation result in weak aggregate demand in high-income regions. This syndrome is consistent with zero or negative interest rates in Europe and Japan." (Nordhaus, 2016).

4 Z. Qureshi referred to advocates of approaches that estimate the impact of innovations on growth "techno-pessimists" and "techno-optimists": "In the debate between "pessimists" and "optimists" regarding the future of productivity, the issue may be less about who is right and more about how the challenges of the future which have been noted by the "pessimists" could be addressed to capture the opportunities envisaged by the "optimists." The future could be one of contingent optimism, if technological possibilities are supported by complementary policy and institutional change." (Qureshi, 2016).

5 According to C. Reinhart, this policy actually results in taxing creditors: "As in the past, during and after financial crises and wars, central banks increasingly resort to a form of 'taxation' that helps liquidate the huge public- and private-debt overhang and eases the burden of servicing that debt. Today, this means consistent negative real interest rates – equivalent to an opaque tax on bondholders and on savers more generally." (Reinhart, 2016).

of these central banks "arrested falling asset prices, thereby saving enormous fortunes. However, this also prevented a great number of young businessmen and investors from taking risks on new ventures," (Sinn, 2016). This process hinders recovery from the crisis for years, if not for decades. Without creative destruction and the related political and social problems, we cannot escape the stagnation trap.

Political interests are beginning to dominate economic interests, i.e., ensuring current political and social stability and securing the results of the next elections has become more important than improving efficiency and productivity. An emphasis on narrowly interpreted political goals and group interests slows institutional and structural modernization and consequently, decelerates growth. The desire to prevent a surge in unemployment, which is understandable from a political perspective, may cause losses in efficiency and competitiveness. This process implies the domination of short-term interests over long-term interests, which is typical of numerous developed and developing countries in recent decades[6]. Furthermore, most often, policies that result in rapid positive shifts in economic trends become inefficient and even harmful in the medium term.

The aforementioned implies that monetary policy measures can halt the crisis and prevent its continuation, but alone, cannot lead to sustainable growth. Sustainable growth requires structural and institutional reforms, particularly when the technological framework of the national economy is undergoing a qualitative upgrade.

Aspects of statistical measurements: discussions regarding economic growth focus on the issue of adequately assessing growth. Certain researchers note that GDP statistics understate the actual level of production and well-being. The GDP indicator was implemented during the 1930s and 1940s and was later referred to as "one of the greatest inventions of the 20th century" (BEA, 2000; Masood, 2016). However, the fundamental technology shifts in recent years and the emergence of new governance models that reflect this new technological reality are creating an entirely new situation in the economy that eludes traditional statistics. The measurement of real GDP, which should include all goods and services that are produced (sold), does not consider a significant portion of the value (of the product, not necessarily tangible) that has been produced, but cannot be measured using existing methods. The issue here is the penetration of information and communication technology (ICT) into all areas of social life, which transforms the very concept of well-being and accordingly, the ability to measure it. Radical improvements in business and staff efficiency satisfy emerging needs and improve well-being by utilizing far lower amounts of labor and material resources.

This can be illustrated by a number of examples. First, there is an unprecedented increase in the number of free goods and services associated with information technology, let alone the rapid decreases in prices (at rates surpassing inflation rates) of new products that enter the market. Benefits are gained from social networks for the economy and consumers. People spend a significant amount of time communicating with IT systems and this improves their well-being (including business development). However, this is only reflected in the growth statistics, at best, as advertising income (DeLong, 2016). Second, certain advanced technologies (e.g., 3D printing) can make products substantially cheaper. Third, new products (goods) emerge and combine various functions at a much lower price than several devices performing the same functions (the iPhone is

6 Examples of the dominance of short-term interests over long-term interests can be found in the practices of numerous developed and developing countries. Examples include the USSR between 1986 and 1990, when the government preferred to accelerate growth and caused a decade-long recession. Another example is China in recent years, growth rates are maintained by injecting budget funds into the economy. In our opinion, the dominance of short-term business interests (current capitalization) over long-term interests (increasing productivity) is one of the primary causes of the current global crisis (Mau, 2016a, p. 174).

the most evident example). Fourth, certain goods and services have been converted into digital form, such as e-books, which are much less expensive and provide the same service as traditional books. Fifth, brand-new, IT-based business models are emerging, as embodied (and exemplified) by Uber (The Economist, 2016). Uber is reducing the demand for cars, while considerably increasing their utilization when compared to taxi services, let alone personal cars and subsequently reduces demand for the production of related goods and services. Therefore, these new business models improve well-being (and increase consumption) and the above technological, industrial, and management innovations may result in the decline of traditional GDP indicators.

Discussions regarding the problems of economic trends are far from over. These themes will remain at the forefront of economic discourse and political struggles for the foreseeable future and will attract theorists of political science and practitioners of economic policy.

Practical recommendations suggested during the past year clearly tended towards revising the correlations between monetary and fiscal stimulation. In 2016, a thesis that recommended scaling back monetary stimulus and enhancing fiscal stimulation gained increasing popularity[7]. This theory is based on several issues:

> *first*, although the policy of extremely low or negative interest rates hindered the crisis, it was unable to ensure a recovery to normal growth;
> *second*, an understanding has spread that resuming growth does not require macroeconomic manipulation, but rather structural reforms that foremost require dedicated fiscal policy measures;
> *third*, the debt burden on government budgets has slightly reduced and a number of developed countries gained more opportunities to borrow financial resources for large-scale projects, thereby using public demand to support growth in both the private and public sectors;
> *fourth*, the new US administration clearly established a priority for fiscal stimulation, which may be an attempt to repeat the success of R. Reagan, who combined fiscal stimulation with the rigorous monetary policy of P. Volker.

Raising the FRS interest rates in December, 2016 was a step towards fiscal stimulation. The next step should be made by the new administration under D. Trump.

In 2016, economists were almost unanimous in formulating the structural priorities for developed countries. The first priority was the development of infrastructure (particularly in the US) and the education system (particularly in Europe). Other priorities include the development of green energy, healthcare, and everything related to human capital in a broad sense. High-priority structural measures include reducing taxes (fiscal measures) and deregulation[8].

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7 Not everyone supports the idea of shifting the focus towards fiscal policy. Numerous economists strongly argued against reducing monetary stimulation, particularly in the Eurozone. M. Wolf recommended an active combination of different growth sources, without countermanding monetary stimulation with fiscal measures: "The best policies would be a combination of raising potential supply and sustaining aggregate demand. Important elements would be structural reforms and aggressive monetary and fiscal expansion. The US has been more successful in delivering a more balanced set of policies than the Eurozone." (Wolf, 2016).

8 "Trump has established infrastructure investment, tax reform, and deregulation as central components of his strategy to boost the US economy's actual and potential growth. As a result, markets seem convinced that the US will gradually exit its prolonged period of excessive reliance on unconventional monetary policy, replacing it with a mix of looser fiscal policy and pro-growth structural reforms – an approach much like that pursued by former US President Ronald Reagan. Germany, China, and Japan have good reasons to embrace such an approach. They are not getting enough out of monetary expansion at this point; the risk of collateral damage and unintended consequences is rising; and pro-growth structural reforms are overdue." (El-Erian, 2016).

Concurrently, the priorities of structural and institutional reforms differ significantly between countries, particularly when comparing developed and leading developing countries. While the majority of developed countries are focusing on developing human capital, including easier access to the labor market for large social groups, China plans to enhance their physical infrastructure to boost domestic demand (considering the enormous domestic market) and technological exports to developing countries. Solving these types of problems is the focus of China's policy to build a Silk Road, presumably aimed at developing markets for Chinese products. This is the most important difference between the structural priorities of developed countries and China.

China currently (and in the near future) acts primarily as a producer of goods and has become the "world's factory" during the 21st century. Conversely, developed countries, even with the latest trends in re-industrialization, produce and consume mostly high-tech products and related services and the quality of human capital is critical for retaining leadership in the production and utilization of high technology.

These processes require the stimulation of demand (i.e., a partial return to the Keynesian model), which requires a serious revision subject to 21st-century realities. With respect to most developed countries, no definite conclusion can currently be drawn in favor of either a 'demand economy' or a 'supply economy.' Demand factors should be adequate for technology-driven supply, which in turn should be maintained through adequate institutional measures (including deregulation or tax reduction). Only this balance between demand-side interests and supply side interests will help overcome the deepening polarization between the beneficiaries of globalization and its victims (however conventional these terms may be)[9].

In terms of global processes, much will depend on whether the leading countries (the US, China, Germany, the UK, Japan, the EU) manage to coordinate their economic policies, considering their specific structural reforms. The inability to ensure this coordination will lead to increased protectionism and populism and, accordingly, an overall deceleration and the simultaneous intensification of uneven development between certain countries.

The prior discussion directly implicates a second characteristic of the past year and, seemingly, the foreseeable future, i.e., populism[10]. This term generally refers to political activity that uses slogans that are popular in the general public but, as a rule, have no real (material or economic) grounds for practical implementation (see Acemoglu, et al., 2013). The actual goals of populist politicians (primarily the struggle for power) are disguised as socially attractive ideas.

Populism is directly associated with the aforementioned conflict between short-term and long-term economic objectives. At best, populist measures yield the promised positive shifts for a short period of time, causing a decrease in long-term stability with a significant price to be paid for its recovery. In the political domain, populism often leads to the destruction of democratic institutions: populists retain power on the wave of short-term achievements, but afterwards, if the situation worsens, they abandon democratic procedures (directly or through manipulation) while promising prosperity after defeating internal and external enemies.

9 "Macroeconomic management must ensure that demand always grows as strongly as the supply potential created by technology and globalization. This is the fundamental Keynesian insight that was temporarily rejected in the heyday of monetarism during the early 1980s, successfully reinstated in the 1990s (at least in the US and Britain), but then forgotten again in the deficit panic after 2009." (Kaletsky, 2016).

10 In this article, we will use the following political definition of populism: "The presence of a charismatic mode of linkage between voters and politicians, and a democratic discourse that relies on the idea of a popular will and a struggle between 'the people' and 'the elite'" (Hawkins, 2003).

Populism became widely common during the 20th century and became either a source of degradation for many countries (Argentina) or a roadblock along the path of economic progress (see Mudde & Kaltwasser, 2011). Two varieties of populism clearly emerged during that time: political and economic (fiscal). The former could exist without the latter, but the latter was always associated with the former. Political populism is a tool in the struggle for power, but its economic implications are ambiguous. A party that rises on a wave of populist slogans and retains power can pursue any economic policy, whether populist or responsible. In certain cases throughout the 20th century, political populism was accompanied by economic populism, i.e., irresponsible fiscal and monetary policies, property manipulations, etc. This led to economic crises which took a long time to overcome. Most populist regimes in Latin America combined economic and political populism, from Juan Peron during the mid-20th century to Hugo Chavez and Nicolas Maduro in Venezuela during the early 21st century[11]. However, there have been cases where politicians rose to power backed by populist slogans and reputation but managed to pursue a responsible and well-balanced economic course (e.g., Lula da Silva in Brazil). Current discussions are primarily about political populism, which is associated with attempts to abandon what, until recently, belonged in the domain of "political correctness" or "rules of the game" and is accepted in the modern world (globalization, political equality, etc.). The influence of populist politicians is growing in Europe and America and in a number of developing countries.

The outcomes of 2016, highlight two specific features in the development of modern populism. First, both rightist and leftist populism is clearly increasing. Rightist populism is mostly related to developed countries in Europe and America, while leftist populism is apparent in poorer countries (including European countries such as Italy and Spain). However, the positions of rightist and leftist populism may coincide in certain provisions of an economic program (specifically with regards to globalization)[12]. Second, macroeconomic (fiscal) populism is a rare phenomenon, which is restricted mostly to the situation in Venezuela. This is important when evaluating the prospects of macroeconomic stability in the world's leading countries.

A populist reaction in the form of anti-globalism may manifest itself in various countries in the near future. Anti-globalism has become an altogether indispensable component of modern populism. In particular, the rise of the US dollar, which appears logical in 2017, may lead to toughening protectionist measures in the US and result in retaliatory measures in certain countries. Various sanction regimes are also a form of populist response to political and to a greater extent, economic problems. The list of examples is extensive.

The rise of populism seems to be based primarily on economic factors. Decelerating growth and protracted recessions are able to evoke a populist response to problems (although this is not a strict rule, as confirmed by the 25-year stagnation in Japan). Sustainable growth is a natural though insufficient condition for overcoming populism. However, populism thrives under the favorable conditions of no clearly present growth prospects. Social policy measures may mitigate the risks of realizing populist slogans; they primarily include assistance for those who incur losses as a result of economic progress in adapting to new conditions, particularly by

11 A classic analysis of 20th century economic populism is offered in a book that was edited by R. Dornbusch and S. Edwards, The Macroeconomics of Populism in Latin America. In this book, populism is defined as "an approach to economics that emphasizes growth and income distribution and deemphasizes the risks of inflation and deficit finance, external constraints and the reaction of economic agents to aggressive non-market policies." (Dornbusch & Edwards, 1991. p. 9; see also Dornbusch & Edwards, 1990; Sachs, 1989).

12 The results of the referendum in the UK and the US election in 2016 are of interest in terms of the correlation between rightist and leftist populism in developed countries. B. Sanders, a leftist critic of the establishment, lost the Democratic Party primaries to H. Clinton, who represents the traditional elites. However, the presidential election was won by D. Trump, who actively utilized rightist populist slogans and had much in common with B. Sanders in his anti-globalist agenda (Di Tella & Rotemberg, 2016, p. 10). Similarly, in the UK, rightist populism is associated with leaving the EU and confidently dominates the leftist populism of current Labour Party leadership (J. Corbyn).

supporting education and other social spheres, which may be more important than providing monetary assistance.

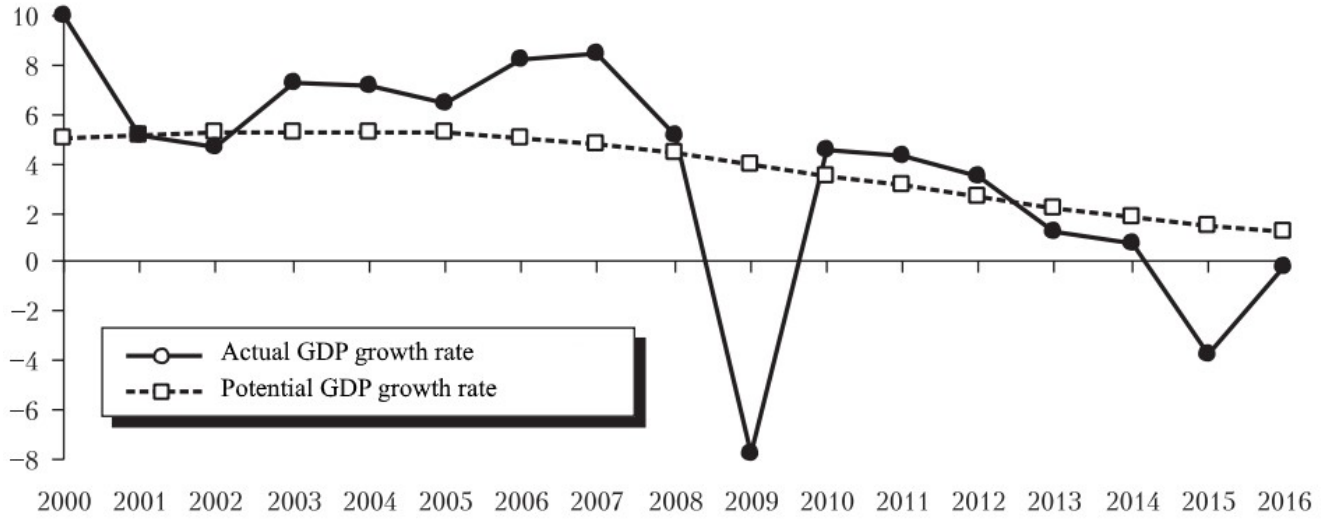
In this political dynamic, a new political polarization is more clearly taking shape and replacing the confrontation of rightist and leftist forces (to clarify, followers of free markets or socialism, liberalism or statism). Currently, it is far more important to note the confrontation between populism and traditional models of modernization. Both rightist and leftist forces that have a "traditional focus" may concentrate on both sides. It is unclear how stable or durable this new configuration is or whether it is of a temporary nature because of the specific circumstances of the current global crisis.

3. Economic crisis and adaptation to the new reality: 2015 and 2016 outcomes

Since 2008, Russia and other developed and leading developing countries have experienced a structural crisis which is gradually shaping a new economic, political, and social reality. Although these countries may have certain common characteristics, Russia has certain unique economic and political circumstances that imply a need for substantially different socioeconomic policies than other countries.

From an institutional perspective, the structural crisis in Russia was associated with two sets of circumstances. First, considering the global problems, there was a need to construct a new economic growth model in lieu of the one that was formed after the crisis in the 1970s. Second, because of specific institutional problems in Russia, where the recovery process was complete by the end of the 2000s, the economy reached similar levels to the transformational recession between the 1980s and the 1990s. These issues exhausted the opportunities of the extensive growth model based on utilizing idle production capacity and labor resources and incomes that rise faster than GDP growth and productivity. This process was reflected in lower structural growth rates (see Sinelnikov-Murylev et al., 2014; Drobyshevsky & Kazakova, 2016). To clarify, the transition to the new growth model was dictated not only by the current situation but also by Russia's specific institutional dynamics (Figure 1).

Figure 1. Actual and potential GDP growth rates in Russia (%)



Source: Rosstat; baseline scenario for the Ministry of Economic Development forecast as of 6.5.2016.

From a macroeconomic perspective, Russia has been confronted with stagflation rather than deflation, i.e., it should achieve growth recovery by suppressing inflation, rather than by stimulating it. Accordingly, monetary

and fiscal stimulation methods play a substantially limited role, notwithstanding the low national debt and significant accumulated reserves. The phenomenon of combined crises (structural, financial, and external shocks) also played a role. These crises required various and often drastically different anti-crisis measures that both stimulate (under structural crisis conditions) and consolidate (under external shocks). These crises initially resulted in highly complicated anti-crisis policies that were not always externally consistent and therefore, were susceptible to criticism.

From a political perspective, since 2014, Russia has engaged in confrontation with a number of leading countries and in addition to searching for a new economic model (and a "new normality"), is working actively towards political re-positioning on the global stage. Financial and technological sanctions act as an additional factor in the structural crisis. Falling prices for core Russian export products have formed a completely new environment for solving urgent economic problems and require stringent measures aimed at adapting the country to the new reality.

By the beginning of 2017, the economic recession had effectively ended and the material production sectors (industry and agriculture) and wholesale trade began to indicate positive trends in 2016. The anti-crisis policy period ended and the objective to ensure economic growth was brought to the forefront.

The anti-crisis policies of 2015 and 2016 deserve a separate analysis. These policies' measures and results are shaping the foundation for the country's further development and a new economic growth model. The lessons from this recent period are useful in terms of the opportunity to use this accumulated experience in the future, because periodic crises are a natural element of a market economy.

From the beginning, the government's anti-crisis policy fell under severe criticism from almost every possible direction. The government was criticized for a rigid monetary policy aimed at decisively suppressing inflation, for insufficiently utilizing the US and EU experience with their powerful monetary and fiscal stimulation measures and because of a lack of measures to support various industries or their inefficiencies. These factors were augmented by criticism against the monetary authorities for maintaining high interest rates, insufficient business loans, and tough measures to purge the banking system. These criticisms were justified to a certain extent because there can be no popular economic policy under economic crisis conditions (furthermore, it is not always consistent).

However, one cannot ignore at least two important positive features of the 2014-2016 anti-crisis policies. First, the government and the Bank of Russia avoided populist measures and standard macroeconomic and institutional mistakes that are generally made by authorities under severe economic and political conditions, although they were affected by numerous influential political and economic players. Populist measures may ensure the short-term mitigation of the situation but lead to large long-term losses. Concurrently, a conflict between short-term results (in the form of economic growth) and medium-term goals (improved efficiency) poses the greatest danger for Russia's policy. A fetish for short-term growth rates could have led to populist measures with grave socioeconomic consequences in the not-too-distant future[13]. Second, it should be noted that the actual situation has been considerably better during the past two years than was expected in late 2014. Furthermore, despite a longer recession, it was better than in 2008 and 2009 in terms of most economic indicators, although the political and foreign economic environment was far more adverse (see Appendix).

13 During the "acceleration" policy of 1986–1989, increased growth rates were achieved through macroeconomic destabilization (sharp growth in the national debt and budget deficit) and resulted in a decade-long stagnation that was followed by another decade to return the economy to pre-crisis levels (see Mau, 2014, pp. 22 –24).

Below is a list of certain vital components and outcomes from the anti-crisis policies of 2015–2016, which, in our opinion, lay the foundation for future (post-crisis) economic growth.

The country retained macroeconomic stability, which is manifested primarily in the budget deficit, national debt, and in persistently decreasing inflation. In 2016, the government returned to three-year budgeting. Despite the symbolic nature of this step, it appears to be important for securing confidence in the economic policy. The consistent implementation of a course to reducing inflation to 4% by the end of 2017 is equally important in this respect. In the budget that was adopted, an attempt was made to loosen the traditional tie between its income basis and changes in oil prices. The government recognized the futility of this connection and budgeted for a flat oil price at USD 40 per barrel. This measure effectively introduced a new budget rule that is based on invariable expenses relative to oil price fluctuations.

Holding back expenses helps to control the federal budget deficit and the extended government budget deficit, despite the substantial drop in income (even in nominal terms). The federal budget deficit was 2.4% of the GDP in 2015 and 3.5% at the end of 2016, compared with nearly 6% in 2009 or 3.5%, 4.0%, and 6.3% of the general government budget, respectively). For the ratio of the deficit to total federal budget expenses, almost 24% of expenses were covered through deficit financing sources in 2009, compared to 12.6% and 18.1% in 2015 and 2016, respectively. Concurrently, an increase in the total federal budget deficit in 2015 and 2016 coincided with a decreasing oil and gas deficit (from 10.0% to 9.4% of the GDP). Therefore, the government succeeded in controlling the deficit for both the federal budget and the overall budget system.

Russia is a country with an exceptionally low national debt at 13% of GDP, and primarily in the national currency, 9%. The regional budget situation is more complicated; over the past few years, it has been very tense, because under crisis conditions, regional entities were required to perform their social obligations. Although the debt held against regional budgets is low (below 3% of the GDP), the risk of an acute crisis remained quite real over the past few years. In 2016, the situation improved slightly in at least in three respects. First, a significant portion of commercial debt was restructured into budget debt and on more favorable terms for the regions. Second, the majority of the regional debt is now denominated in the national currency. Third, the debt owed by the regions began to decrease, although insignificantly, by 0.1% of GDP in 2016 (see Deryugin, 2016).

The government budget's dependency on the oil and gas sector is decreasing. The share of oil and gas revenues of the total federal budget revenues is gradually decreasing, from 51% in 2014 and 43% in 2015, to 36% in 2016 (estimated). Undoubtedly, these decreases were conditioned not so much by the diversification of the Russian economy's structure as by falling global oil prices, which were not fully compensated for by the fall of the ruble against the dollar. As a result, the percentage of oil and gas revenues is falling against a backdrop declining total federal budget revenues, even in nominal terms.

The Bank of Russia's transition to a policy that targeted inflation and a floating foreign exchange rate were criticized by numerous politicians, business professionals, and experts. Concurrently, the difficult decisions made in the autumn of 2014 had significant consequences for macroeconomic stability. By the end of 2016, inflation reached 5.4%, which was unprecedented for modern Russia. The government succeeded in retaining and even increasing international reserves to USD 377.7 billion (+2.5%) as of January 1, 2017.

In recent years, capital flight decreased substantially from USD 152.1 billion in 2014 to USD 57.5 billion in 2015 and then to USD 15.4 billion in 2016 (estimate by RF Central Bank). Outflows of private capital in 2015

and 2016 were to a greater extent related to the repayment of foreign debt by banks and corporation; these outflows cannot be characterized as "capital flight" to other jurisdictions. Accordingly, the country's total foreign debt was reduced. In 2015 and 2016, the foreign debt for state corporations decreased. For example, in 2015, the government's foreign debt according to the extended definition[14] decreased by 12.1% to USD 268.1 billion and the foreign debt of government authorities decreased by 26.6% to USD 30.6 billion. The latter fact, however, is not a definitely positive phenomenon in terms of growth financing, because it resulted from financial sanctions. Naturally, after the acute crisis and devaluation in 2014, current conditions improved and stability increased; the current account remained positive and the outflow of capital stabilized quickly under a floating foreign exchange rate[15].

Shaping the institutional framework for future economic growth, the Bank of Russia pursued consistent and stringent measures to revitalize the banking sector and remove lending institutions from the market that did not meet the regulator's supervisory requirements. 97 banking licenses were revoked in 2016, which is slightly more than in the previous years (93 licenses were revoked in 2015 and 86 in 2014). Lending institutions whose licenses were revoked in 2016 held RUB 1.2 trillion in total assets or 1.4% of the total assets of the banking sector at the beginning of 2016 (RUB 1.1 trillion or 1.4% in 2015 and RUB 0.4 trillion or 0.8% in 2014).

Closing these banking institutions resulted in positive shifts in banks' operations. Following a sharp reduction in profits in 2015, when the banking sector earned RUB 192 billion, profits began to recover and the banking sector earned RUB 930 billion in profits in 2016. However, the return on equity (11%) in annual terms in 2016, was significantly lower than from 2011 to 2013 (17%–19%).

Deposits by companies and households are boosting the stability of the banking system and simultaneously laying the foundation for economic growth. Bank deposits grew in 2015; this is an important indicator because it the primary source of investments for companies are their own resources. However, this trend changed in 2016 because of an increase in the exchange rate of the ruble against foreign currencies and a reduction in interest rates on deposits. From January to October 2016, the total term deposits held by companies in the banking system decreased by RUB 2.3 trillion, to RUB 11.3 trillion as of November 1, 2016. These funds remain significant despite being reduced from a 35-day cycle as of January 1, 2016, to a 28-day cycle as of November 1, 2016 (prior to 2014, term deposits did not exceed a 20-day cycle).

Similarly, in 2015 and 2016, a certain amount of growth was observed that was followed by stabilization in the savings held by households in banks. The deposit growth rate was between 11% and 12% in 2016. Ruble deposits increased by 15% over 11 months and reached 17.5 trillion (as of December 1, 2016), while foreign exchange deposits barely changed: USD 94.0 billion at the beginning of the year and USD 94.7 billion as of November 1, 2016 (a 0.8% increase). The proportion of deposits held in foreign currencies decreased from 29.8% as of January 1, to 25.7% as of November 1, 2016. The floating foreign exchange rate apparently resulted in no mass transfer of ruble deposits into foreign exchange occurred for the first time in the contemporary Russian history.

14 The foreign debt of the public sector according to the extended definition includes the foreign debt owed by administrative government agencies, the central bank, banks, and non-banking corporations in which administrative government agencies and the central bank directly or indirectly own 50% or more of the capital or control the organizations in other manners.

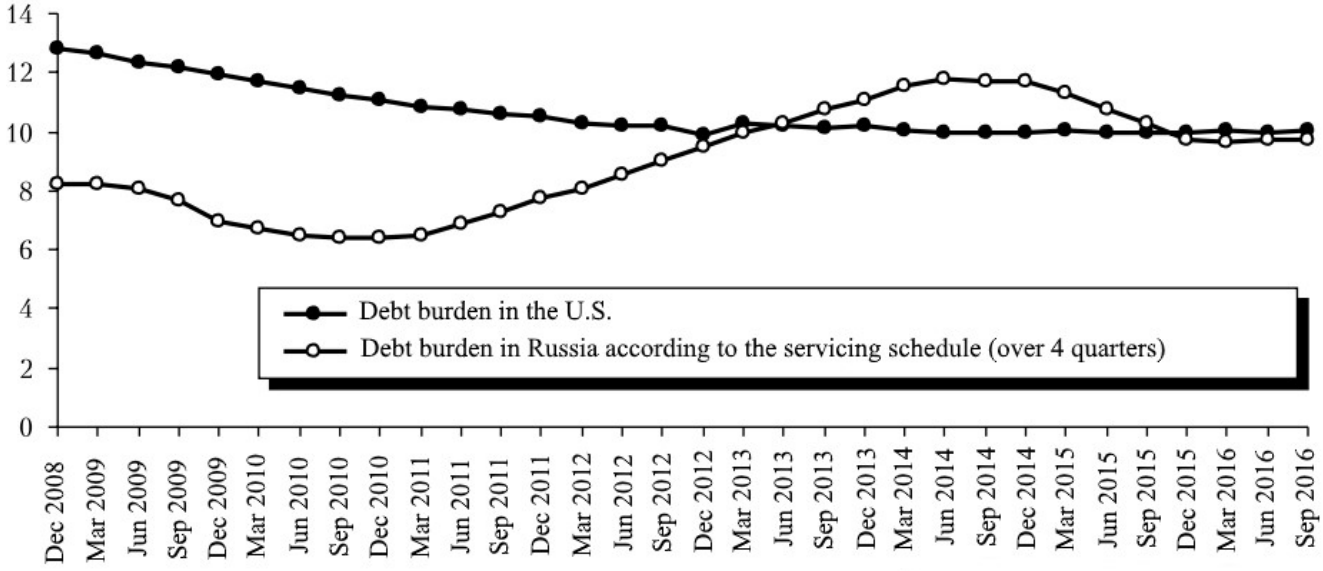
15 The mechanism for adapting the Russian economy to the decreasing real exchange rate of the ruble was reviewed in Drobyshevsky and Polbin (2016).

Mortgage loans: following the mortgage boom in 2013 and 2014, when the housing loan debt grew by 31–32% annually and the annual disbursement of new loans reached RUB 1.82 trillion, the amount of mortgage disbursements dropped sharply in 2015 (RUB 1.17 trillion); however, demand for mortgages increased by approximately 13% in 2016 (from November 1, 2015 to November 1, 2016) to RUB1.5 trillion. As a result, the total housing loan debt held by individuals reached RUB 4.4 trillion in 2016. Past due debts related to those loans remain insignificant at 1.8% of the total debt. Concurrently, the NPL share is 1.2% for ruble housing loans and over 30% for foreign currency loans, but the share of total housing loans held in foreign currencies does not exceed 2% of the total housing loans.

Retail loans: the total debt for retail loans stopped decreasing at the end of 2016. The annual increase as of the end of November 2016 became positive (+0.3%); the debt had decreased by 7.3% in 2015. An increase in housing loan debt implies a corresponding reduction in consumer loan debt. The proportion of past due debt reached its peak level in August 2016 (9.0% of all loans and 13.5% of consumer loans), after which it began to slowly decline (to 8.6% and 13.2%, respectively).

The accumulated debt of Russian households is insignificant when compared to developed market economies; it is slightly more than RUB 11 trillion (13% of GDP). However, considering the higher interest rates (the average annual cost of a performing bank loan was 16.4% in 2016) and short maturities (according to the repayment schedule, the average term on retail loans is 44 months; the actual term considering early repayments is 18 months), the servicing of bank loans in Russia accounted for 10% of disposable household income in 2016, as opposed to the US, where retail loan debt is approximately 78% of the GDP. To clarify, the debt service burden for the average Russian is the same as that for the average American, but the relative amount of debt in Russia is six times lower. It should be noted that over the past two years, the debt burden relative to income decreased; it peaked at approximately 12% of disposable income in 2014 (Figure 2).

Figure 2. Debt burden as a percent of disposable household income in Russia and the US (%)



Sources: Bank of Russia, Federal State Statistics Service; Federal Reserve; Gaidar Institute estimates.

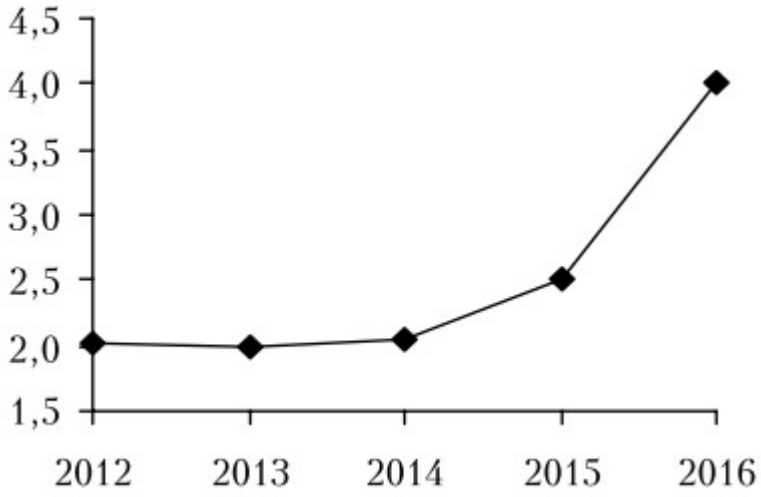
Employment: an important factor in ensuring social and political stability was the low level of unemployment which, during the past two years, was 5-6% of the working-age population. The working-age population continued to decline because workers from a sizable generation were retiring. Conversely, the specific

aspects of the Russian labor market contributed to this trend; the reduction in economic activity (crisis) was accompanied not by decreased employment, but by a reduction in working hours and payments. Both factors are interrelated because the demographic situation is forcing employers to maintain official employment instead of relying on the open labor market (see Appendix).

The greatest difficulties during falling oil prices befell industries that benefited the most from the Dutch disease, primarily services (particularly commerce) and construction. Their adaptation and recovery began only in 2016, which was reflected in the demand for consumer and mortgage loans. In these areas, there is a gradual positive trend, which is natural given the deflating consumer bubble circumstances that are characteristic of booming rental income periods.

Diversification of Russian exports: in 2015 and 2016, controversial and simultaneously important shifts occurred in the trends for Russian exports. The general trend is for declining exports at times when their structure is being diversified. This reduction is understandable given the decelerating global economy and growing geopolitical tension that results in declining demand for products and, respectively, declining prices. This process also explains the diversification of exports because the prices for fuel and energy products and metals fell significantly, even further than other product categories. As a result, beginning in 2014, the proportion of exports from fuel and energy products has decreased continuously (from 72% in 2014 to below 60% in 2016) and the share of other product categories has increased (agriculture, chemicals, light industry, textiles, machinery and equipment). The reduction in the total value of exports in non-energy industries progressed at lower rates; in some industries growth was observed compared to the same period of the previous year from January through September 2016. The volume of agricultural exports reached the volume of armament exports and even exceeded them. This resulted in the diversification of Russian exports; the export diversification coefficient doubled from 2014 to 2016 (Figure 3)[16].

Figure 3. Russian export diversification coefficient



Source: calculations based on FTS data.

The export situation reflects a problem typical for modern crises, i.e., an inconsistency between short-term and long-term economic growth objectives. The reduction in exports is undoubtedly an unpleasant phenomenon that negatively impacts current growth and budget opportunities. However, the diversification of exports is

16 Calculation by G. Idrisov (RANEPA). The degree of Russian export diversification was calculated based on the diversification index used by the World Bank (the Herfindahl-Hirschman index) (see http://wits.worldbank.org/wits/ wits/ witshelp/Content/ Utilities/e1 .trade_indicators.htm).

laying the foundation for stable economic trends and a stable budget system in the medium term. Of course, this stability implies that the government and businesses can take advantage of the evolving circumstances and ensure the increasing competitiveness of non-commodity industries, without relying exclusively on the advantages of a low foreign exchange rate (see Kadochnikov et al., 2016).

The recession in Russia finally ended around the start of 2017. The initial adaptation of the domestic economy to the new economic and political reality occurred, which may be of a long-term nature. However, the end of the recession does not equate to the end of the global crisis or the resolution of structural problems in the Russian economy. The primary negative factors that affect the socioeconomic dynamics remain. The world economy continues to be turbulent and it will pose new and challenging objectives for the governments of leading countries, including Russia. Furthermore, these negative factors are more complex than those that were solved during the previous stage of anti-crisis policy and adaptation.

The complexity of the objectives does not imply that their solution must be more socially painful. Rather, it implies that the intellectual complexity of developing measures must ensure sustainable economic growth in the medium and long term and refers to the political complexity of consolidating forces (interest groups) to implement this program.

Table 1. Changes in the breakdown of export and import products in Russia from 2014 through 2016 (% of total)

EAEU TN VED (Commodity Classification for Foreign Economic Activity) code	Product category	Exports			Imports		
		2014	2015	2016*	2014	2015	2016*
	Total	100.0	100.0	100.0	100.0	100.0	100.0
01-24	Food products and agricultural raw materials (except for textiles)	3.8	4.7	5.9	13.9	14.5	13.4
25-27	Mineral products	70.5	63.8	59.7	2.5	2.7	1.8
27	Fuel and energy products	69.5	62.9	58.6	1.4	1.6	0.9
28-40	Chemical industry products, rubber	5.9	7.4	7.5	16.2	18.6	18.7
41-43	Raw hides, furs, and derivative products	0.1	0.1	0.1	0.4	0.5	0.4
44-69	Wood and paper products	2.3	2.9	3.6	2.1	2.0	1.9
50-67	Textiles, textile products and footwear	0.2	0.2	0.3	5.7	5.9	6.2
71	Precious stones, precious metals, and derivative products	2.4	2.3	3.2	0.4	0.3	0.2
72-83	Metals and derivative products	8.2	9.6	10.3	6.7	6.4	6.3
84-90	Machinery, equipment, and vehicles	5.3	7.4	7.5	47.6	44.8	47.1
68-70							
91-97	Other products	1.4	1.6	1.9	4.4	4.2	3.9

* Data for January – October.

Sources: Russian FTS (official website, Customs Statistics for Foreign Trade section. http://www.customs.ru/index.php?option=com_content&view=article&id=13858&Itemid=2095); calculations by the Russian Academy for Foreign Trade.

In a concentrated form, the economic and political objective for the near future was formulated by President Putin at the end of 2016 in his message to the Federal Assembly. Putin outlined that his primary goal is to ensure the development of the Russian economy at a rate that exceeds the world average. This is quite a precise definition that allows a departure from measuring against absolute desirable growth rates because the Russian economy is deeply integrated into the world economy and its rate of growth cannot be independent from global growth. Russia's current level of socioeconomic development allows for focus on this rate for the foreseeable future. The task of developing this type of program was commissioned in December by the Russian government and primarily, for the Ministry of Economic Development. The outline of this program is well known.[17] However, it should be completed with a system of specific measures that go far beyond the economic domain.

It is commonly understood today, that achieving Russia's strategic development objectives is only possible if the economy, governmental administration, social policy, and law enforcement activity are comprehensively modernized.

The government specified priority projects around which it began to build a policy to stimulate growth. These projects include healthcare, education, mortgage and rental housing, international cooperation and exports, labor productivity, small businesses and support for entrepreneurial initiatives, reforming control and supervision activity, free and high-quality roads, single-industry towns, and the environment. To implement these projects, a special Presidential Council on Strategic Development and Priority Projects was established. If detailed further, these sections should become the industry-specific and institutional basis for an economic growth strategy. However, in developing measures for each of these domains, it is important to overcome the traditional approaches that were used during the pre-crisis period and analyze from the vantage point of the new reality which recently took shape.

Another specific feature of the past year was that several groups of economists began work on the long-term socioeconomic development program (strategy). Respective tasks were assigned to the Presidential Council for Strategic Development and Priority Projects, the Center for Strategic Development, headed by the Deputy Chairman of the Russian Presidential Economic Council, A. Kudrin and to a group of businessmen and economists headed by Business Ombudsman, B. Titov, united under the aegis of the Stolypin Club. They all must present their proposals in 2017, which, among other things, will become a component of the upcoming presidential campaign. These programs can be benchmarked against each other. We are expecting a difficult period, which will require flexibility from the authorities, and consistency in their course. Flexibility will be needed to meet new challenges, while consistency will be needed to solve the fundamental (if not secular) tasks of comprehensively (not only economic) modernizing Russia.

17 Measures of structural modernization have been discussed in detail in the economic literature, including by the author of this article (see, e.g.: Mau & Kuzminov, 2013; Mau, 2016b, pp. 29-32; Idrisov & Sinelnikov-Murylev, 2014).

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Appendix

Primary economic indicators for the Russian Federation, 2007-2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Macroeconomic indicators (growth in physical volume as a % of the previous year)										
GDP	8.5	5.2	-7.8	4.5	4.3	3.5	1.3	0.7	-3.0	-0.2
Industry	6.8	0.6	-10.7	7.3	5.0	3.4	0.4	1.7	-3.4	1.1
Agriculture	3.3	10.8	1.4	-11.3	23.0	-4.8	5.8	3.5	2.6	4.8
Construction	18.2	12.8	-13.2	5.0	5.1	2.5	0.1	-2.3	-4.8	-4.3
Wholesale trade	9.5	5.4	2.0	3.0	4.4	3.6	0.7	-3.6	-10.0	2.0[2)]
Retail trade	16.1	13.7	-5.1	6.5	7.1	6.3	3.9	2.7	-10.0	-5.2
Retail consumption by household	14.3	10.6	-5.1	5.5	6.8	7.4	3.7	1.7	-3.7	-3.4[1)]
Investments in fixed capital	23.8	9.5	-13.5	6.3	10.8	6.8	0.8	-1.5	-8.4	-2.3[1)]
Share of wages in GDP (methodology change in 2011)	46.7	47.4	52.6	49.6	43.9	44.2	46.1	46.4	46.8	48.4
Share of profits and mixed income within GDP (methodology change in 2011)	34.1	32.6	30.8	32.6	41.5	41.1	39.7	39.5	41.8	40.7
Public finance and international reserves										
Surplus (+)/deficit (-) of the consolidated budget, % of GDP	6.0	4.9	-6.3	-3.4	1.4	0.4	-1.2	-1.1	-3.5	-4.0[3)]
Surplus (+)/deficit (-) of the federal budget, % of GDP	5.4	4.1	-6.0	-3.9	0.8	-0.1	-0.5	-0.5	-2.4	-3.5
Oil and gas deficit of the federal budget, % of GDP	-3.3	-6.5	-13.7	-12.2	-9.3	-10.5	-10.4	-10.9	-9.7	-9.4[3)]
Russian domestic national debt (at year end, RUB billion)	1,248.8	1,499.8	2,094.7	2,940.4	4,190.6	4,977.9	5,722.2	7,241.2	7,307.6	7,602.4[4)]
Foreign national debt (Ministry of Finance data, USD billion)	44.9	40.6	37.6	40.0	35.8	50.8	55.8	54.4	50.0	51.3[4)]
Consolidated national debt (% of GDP)	7.2	6.5	8.3	9.0	9.5	10.5	11.4	14.4	13.6	13.1[4)]
Reserve Fund (2007 – Stabilization Fund), at year end, USD billion	156.81	137.09	60.52	25.44	25.21	62.08	87.38	87.91	49.95	31.30[4)]
National Welfare Fund at year end, USD billion		87.97	91.56	88.44	86.79	88.59	88.63	78.0	71.72	71.26[4)]
International reserves at the Bank of Russia, year end.	478.8	427.1	439.0	479.4	498.6	537.6	509.6	385.5	368.4	385.3[4)]

Prices and interest rates

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Consumer price index, December over December	11.9	13.3	8.8	8.8	6.1	6.6	6.5	11.4	12.9	5.4
Producer price index, December to December	25.1	-7.0	13.9	16.7	12.0	5.1	3.7	5.9	10.7	4.35)
Bank of Russia discount rate (prior to 2013 – the minimum rate on repurchase transactions for 1 day), annual average, % p.a.	6.0	6.9	8.3	5.3	5.3	5.3	5.5	7.9	12.6	10.5
Average interest rate on RUB loans to businesses, annual average (% p.a.)	10.0	12.2	15.3	10.8	8.5	9.1	9.5	11.1	15.7	12.85)
Average interest rate on individual deposits (except for demand deposits, % p.a.)	7.2	7.6	10.4	6.8	5.4	6.5	6.5	6.7	9.7	7.35)

Labor market

Overall unemployment rate (ILO methodology), annual average, %	6.0	6.2	8.3	7.3	6.5	5.5	5.5	5.2	5.6	5.36)
Average wages (RUB thousand/month)	13.6	17.3	18.6	21.0	23.4	26.6	29.8	32.5	34.0	35.88)
Wages in real terms	17.2	11.5	-3.5	5.2	2.8	8.4	4.8	1.2	-9.0	-0.52)
Real disposable household income	12.1	2.4	3.0	5.9	0.5	4.6	4.0	-0.7	-3.2	-5.82)
Population with cash income below the subsistence level, in millions	18.8	19.0	18.4	17.7	17.9	15.4	15.5	16.1	19.1	20.37)

Banking system

Number of active lending institutions at year end	1,136	1,108	1,058	1,012	978	956	923	834	733	6354)
Number of banking licenses withdrawn during the year	49	33	43	27	18	22	32	86	93	97
Assets	46.1	32.7	3.7	14.8	21.4	20.4	14.2	18.6	-1.5	1.89)
Debt owed by domestic corporations (excluding banks) through bank loans	52.4	28.6	0.0	9.6	22.8	15.5	11.6	12.7	5.0	-0.19)
Debt owed by domestic individuals through bank loans	58.3	31.2	-11.7	14.4	35.5	39.1	27.7	11.6	-7.3	0.39)
Share of past due loans to domestic corporations, excluding banks	0.9	2.2	6.0	5.5	4.8	4.6	4.1	4.1	6.0	6.044)
Share of past due loans to individuals	3.1	3.6	6.9	7.1	5.3	4.1	4.5	6.0	8.4	8.64)
Profit, RUB billion	508	409	205	573	848	1,012	994	589	192	78810)

[1)] January – September 2016, in terms of % over January – September 2015, [2)] January – October 2016, in terms of % over January – October 2015, [3)] Estimate for 2016 from the Main Principles of Fiscal Policy for 2017-2019 (in materials to the draft law On the Federal Budget for 2017 and for the planning period of 2018 and 2019), [4)] As of December 1, 2016 [5)] January – October, 2016, [6)] In 3Q 2016, [7)] As of November 1, 2016, [8)] As of December 27, 2016, [9)] December 1, 2016 over December 1, 2015, [10)] January – November 2016

Sources: Rosstat; Ministry of Finance; Bank of Russia.

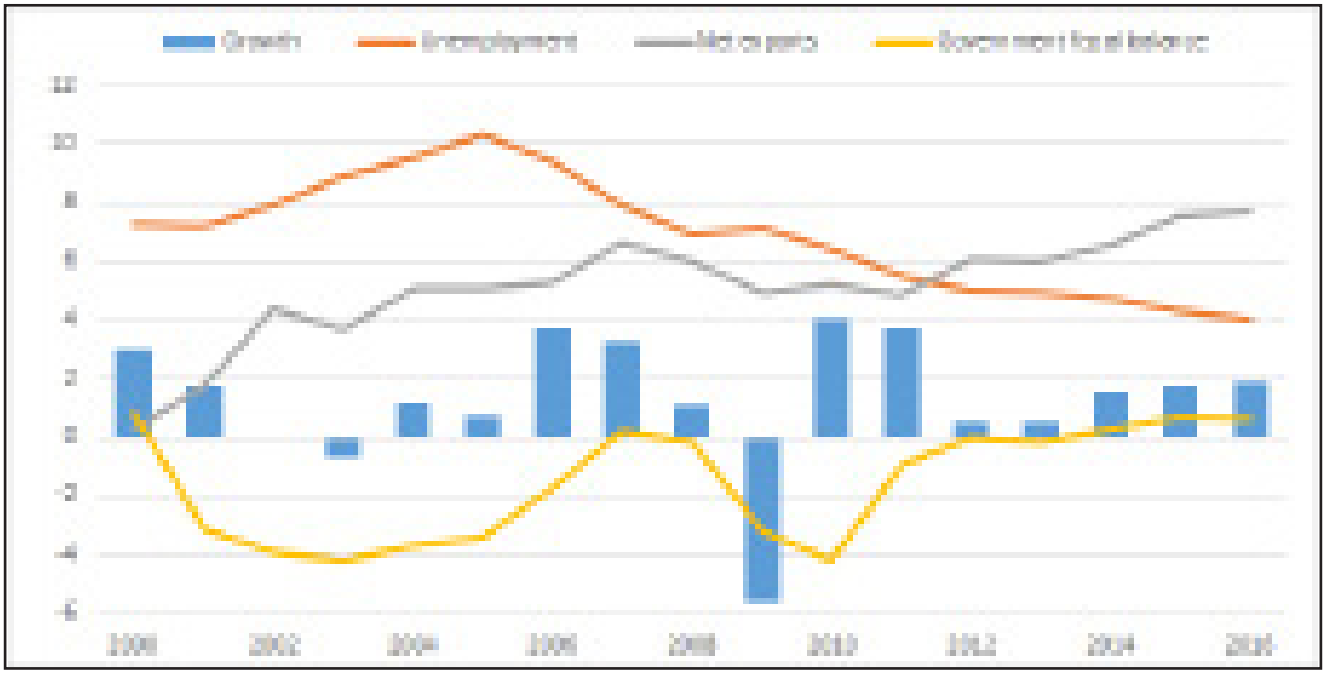
Economic outlook for Germany: in the big shadow of global uncertainties

Michael Grömling

1. Moderate growth and a booming labour market

The German economy can look back on a comparatively steady, albeit moderate development over the last years. Economic growth measured in terms of the change in real gross domestic product (GDP) came to an average of 1.75% during the 2014-2016 period. That is almost half a percentage point more than the average since the year 2000. In the last three years, the economic dynamic was almost entirely steady. Over that period, German economic growth slightly exceeded that for the Euro area (1.6%). Once economic expansion in the European Union (EU) reached 2%, however, Germany could not keep up. Although growth here is steady, by comparison with the EU or the overall group of advanced economies, it is still only moderate. In the end this is reflected in a limited rise in per capita income or material standard of living.

Diagram 1. Macroeconomic performance of Germany. Annual change of real GDP in percent, unemployment rate[1)] in percent, net exports and government fiscal balance as a percentage of GDP[1)]



1) According to the System of National Accounts (SNA).
Source: Federal Statistical Office.

If we take a look at the employment market, there is cause for confidence, particularly from a long-term perspective (Diagram 1). Bar a short and hardly perceptible deviation in 2009, caused by the global financial markets and economic crisis, the unemployment rate has been continually reduced. Unemployment rose by 1.5 million to over 4.5 million between 2001 and 2005 (which, in 2005, was over 10% of the employment rate) as a result of the long stagnation phase (see box below), but since then the reduction has been notable. This was the result of institutional changes to the employment market (see box below), temporary wage restraint and the overall positive development of the global economy. In 2016 there were just 1.8 million unemployed on the basis of an internationally harmonised definition of the System of National Accounts

(SNA). The rate of unemployment was only 4%. In both absolute and relative terms, this constitutes the lowest unemployment level since German Reunification and the beginning of pan-German economic statistics in 1991. In international comparisons also, unemployment in Germany is remarkable low. The average in the EU in 2016 was twice as high in 2016.

Box 1. Stagnation years 2001 to 2005 and the Agenda 2010

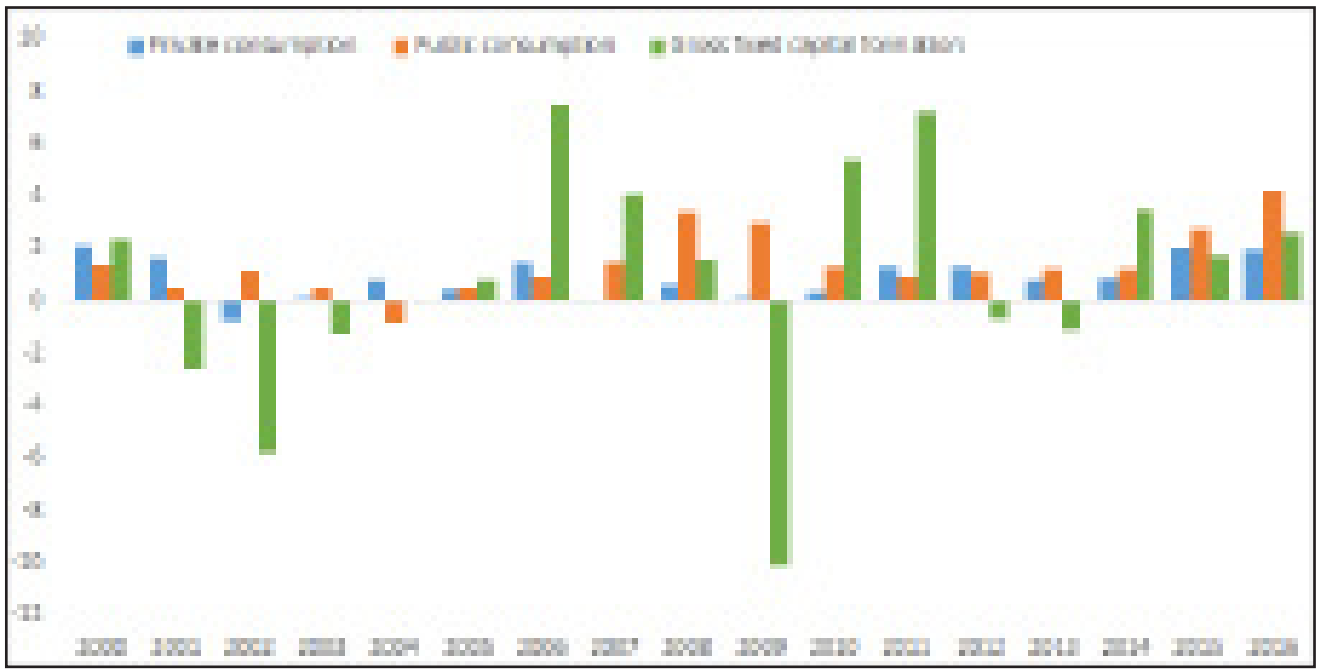
The period from 2000 to 2005 was characterised by numerous macroeconomic shocks, which ultimately led to Germany's longest stagnation period (Grömling, 2009):

- In 2000, after a long period of comparatively low and stable oil prices, there was a sudden leap by over 50% compared with the previous year. After that, the situation calmed down a bit and between 2000 and 2003 the oil prices were on average around 50% higher than the average in the 1990s. The loss in spending power as a result of this slowed down consumption.
- On top of that, in 2000, the so-called new economy bubble burst. A number of ICT companies going to the wall plus accountancy scandals led to significant slumps on the stock exchange with negative effects on company financing conditions and on private household wealth.
- Finally, the terrorist attacks in 2001 led to increased political and economic uncertainty, which was reflected in the deteriorating investment climate.
- The euro was devalued against the US dollar at the end of 2000 but from the beginning of 2002 to the middle of 2003 the value of the euro increased by 30%, leading to a loss of price competitiveness.

This accumulation of negative shocks occurred in an economic context rife with location problems and the need for reform. At that time Germany was considered the "sick man of Europe" (The Economist, 1999). Over those years the German Council of Economic Experts (SVR), tasked with assessing macroeconomic developments documented these numerous structural problems in detail (see, for example, SVR 2002). The persistent and increasing unemployment was a good mirror image of these structural problems. Ultimately, these deficits must be regarded as having prompted "Agenda 2010", which was announced in March 2003 with comprehensive reforms to be implemented in the following years (Goecke et al., 2013). The most important measures in Agenda 2010 include, for example, the deregulation of temporary work, the "mini-job reform" for minor employment, the consolidation of unemployment and social security benefits ("Hartz IV") in order to do away with double structures, inefficiency, unfairness and a lack of incentive in the social security system, and in pensions policy the sustainability factor in the pensions adjustment formula and the new retirement age of 67. All this led to greater flexibility and dynamism in the employment market.

Since 2005, the drop in unemployment has been matched by what by German standards is a phenomenal level of job creation. While almost 450,000 jobs were lost during the stagnation period from 2001 to 2005, between 2005 and 2016 an increase in employment by over 4 million people was achieved. 2016 was an all-time record in Germany with 43.4 million people employed, and in that year alone the increase came to 425,000 jobs.

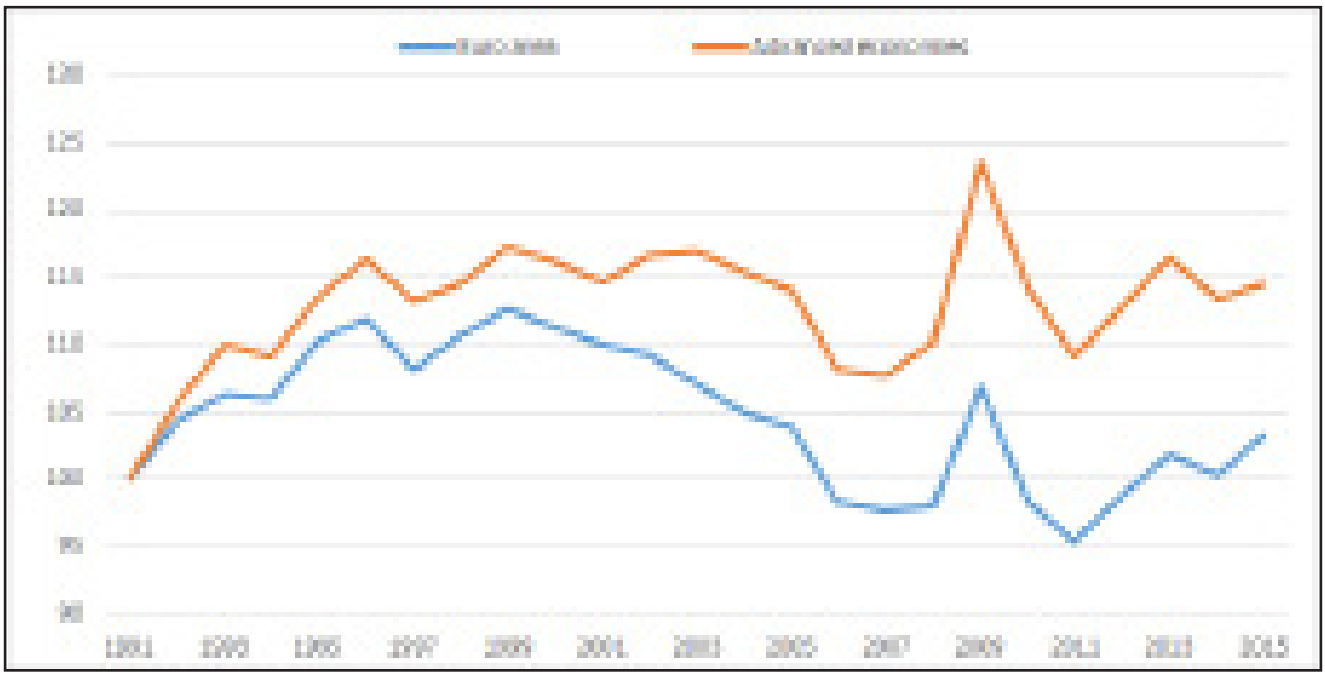
Diagram 2. Consumption and investment in Germany. Annual change of real private and public consumption and of gross capital formation in percent



Source: Federal Statistical Office.

This positive development in employment has fuelled an increase in consumption in Germany over the last years. With an adjustment for price changes, private household spending has increased by two percent in each of the last two years (Diagram 2). That is almost twice as high as the average for the years from 2000 to 2016. In 2015 and 2016, private consumption contributed a good one percentage point to the economic growth rate of a good 1.75%. Significant contributions to growth over the last two years also came from public consumption, coming to 2/3 percentage point on average. Thus, the economic growth in the years 2015 and 2016 can be fully attributed to private and government spending. Net exports and gross investments did not contribute to growth. The impetus for greater government spending was to a notable degree the result of the need to provide for and integrate the refugees in Germany. The high contribution made in reality by government spending to economic growth is in stark contrast to the austerity policy with which Germany is sometimes credited. Since 2005, at any rate, government consumption has been driving growth on a continual basis. The annual growth in real government consumption came to 1.8% in the period from 2005 to 2016 (Diagram 2) This means that the average annual contribution to growth was one third of a percentage point. Despite the great increase in government spending over the last years, since 2013 Germany has been able to avoid a budgetary deficit (see Diagram 1). In fact, in the last two years there have been budgetary surpluses. However, this is not the result of an austerity policy in government spending but is due to significantly rising public revenues reflecting the relative good economic situation. As a result of the increasing revenue and lower interest spending, it has been possible to reduce government debt as a percentage of the GDP in Germany despite this notable increase in government spending. The debt/GDP ratio for 2016 was 68%. At the height of the global financial markets and economic crisis it was at 81%. This is another macroeconomic key indicator that sees Germany performing well when compared with some other countries.

Diagram 3. German unit labour costs in international comparison. Relative unit labour costs in the manufacturing sector compared to Euro area and advanced economies[1]; index 1991=100



1) 26 Countries. Source: Schröder (2016).

The effects of the global financial markets and economic crisis of 2008 and 2009 as well as the European sovereign debt crisis from 2011 onward are still being felt in the area of German investment (Bardt, Grömling & Hüther, 2015). This is reflected in the negative growth rates in gross domestic investments in 2012 and 2013 and the moderate rates after that (Diagram 2). In particular, investment in new machinery and equipment - apart from the years 2014 and 2015 - was markedly lower than investment in construction. The great political uncertainties in Europe have certainly had an impact on investment trends in Germany. The accompanied decline in German export prospects with a view to the European market have taken their toll on investment in new machinery and equipment. The high demand for capital equipment in emerging countries, at least up to 2014, provided a good counterbalance to the drop in the demand for exports from Europe and prevented a slump in Germany's overall exports. This had a stabilising effect on investments. One factor in favour of price competitiveness since the financial markets and sovereign debt crisis has been the devaluation of the euro. However, unit labour costs in German manufacturing have worsened again since 2011 (Diagram 3). The hefty fluctuations as a result of the 2009 financial markets and economic crisis must be taken into account as well. The stabilisation in the employment figures in Germany in combination with the severe downturn in production led to unit labour costs overshooting the mark in 2009. This was corrected in the following two years. From 2011 onward, German labour costs and unit labour costs once more increased perceptibly compared with the overall international arena (26 advanced economies) and with the Euro area. This has dragged down the propensity to invest in Germany. Furthermore, on the basis of an international comparison, Germany suffers from high energy costs, as a result of the – politically triggered – energy transition.

Net exports had a slightly negative effect on growth in Germany in 2016 (-0.1 percentage points). Imports, adjusted by price changes, grew more than exports over the last year: 3.4% versus 2.5%. At a first glance this hardly fits the picture of a country that, by virtue of its trade balance surpluses, is growing at the expense of other countries. It is true that since the year 2000, Germany has achieved surpluses in its foreign trade (Diagram 1). Net exports (of goods and services based on SNA) came to 239 billion euros in 2016. This comes to 7.6% of GDP. Exports came to 1,441 billion euros or 46% of GDP. Imports accounted for 1,203 billion euros or 38.4%

of GDP. It should be noted here that the recently sinking import ratio based on nominal values and therefore the rising net exports can to a large degree be attributed to a drop in import prices. While export prices have been more or less stagnating since 2012, the import prices have been dropping on average by 1.8% a year. The much lower energy and raw materials prices in particular can explain this. However, the export and import ratios are both high by international standards so that foreign trade is far from being a one-way street for Germany. Germany is one of the world's biggest exporters but also one of the biggest global importers.

2. Global investments drive German trade surpluses

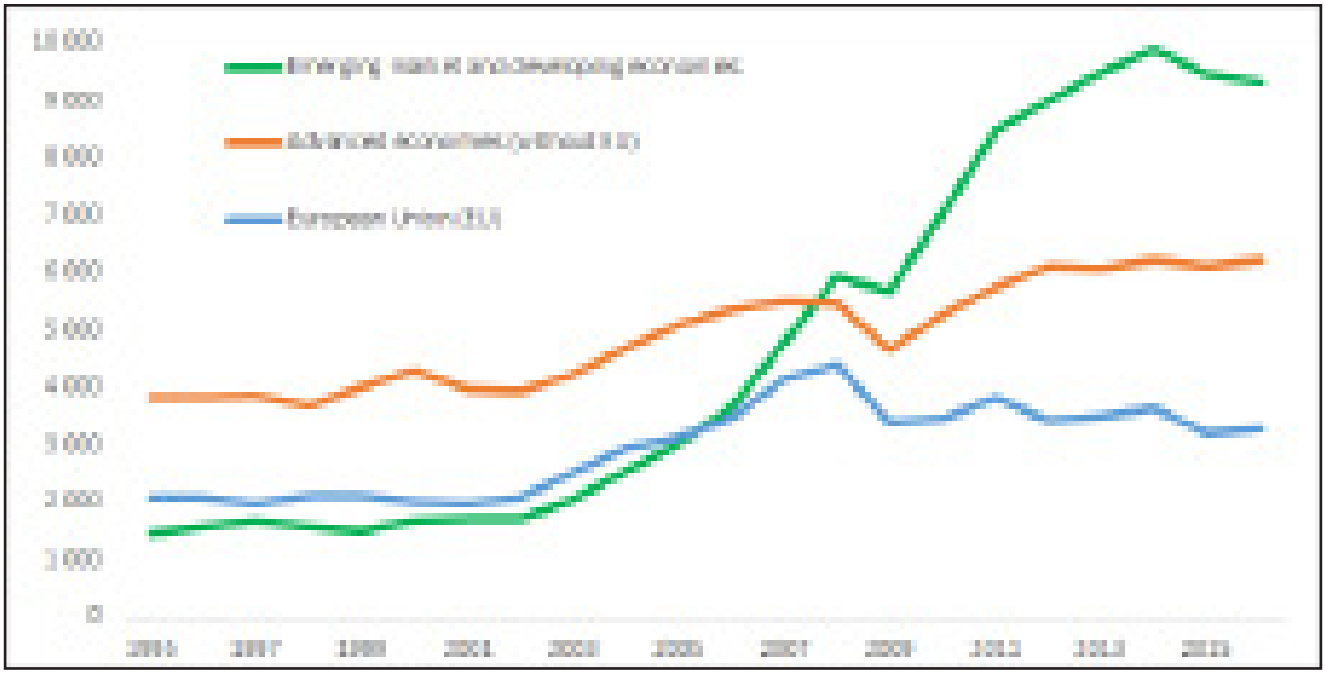
There can be quite a range of explanations for the current account balance and its mirror image in accountancy terms, the capital account balance. These can be a country-specific development affecting macro-economic demand, which, in the case of a deficit in the current account balance, exceeds overall production. We might also take the example of high government demand, leading to a twin deficit (a current account deficit and a government budget deficit), a boom in consumption or a high level of investment activity as a result of an economic catching-up process. Conversely, high saving levels and high levels of investment activity abroad – via foreign direct investment – can lead to a surplus in the current account balance. On the other hand, the supply side of an economy can also cause a certain configuration in the current account balance. Thus, a certain factor endowment (e.g. with oil or other natural raw materials) or a specific and historically paved economic structure can, in the case of a positive or negative global shock, lead to a rift between production and demand in the economy as a whole. Thus, Germany's large surpluses in its current account balance over the last ten years can be explained as the result of an asymmetric shock and a specific supply-side or economic structure (Grömling, 2014; 2016).

An asymmetric shock is a demand- or supply-side event that only affects a few countries or affects all countries but to widely varying degrees. A supply-side shock could be significant energy price changes or demographic changes followed by a lack of skilled workers. In terms of the German situation, we can consider a global demand-side shock. From the start of the new millennium there was a persistent and growing decoupling of emerging and developing countries on the one hand and advanced economies on the other hand. This brought about a notable convergence between these two large groups of countries. In terms of the surplus in the German current account balance, a decisive factor has been that as a result of this global structural change there has also been a shift in the centre of gravity for global investment towards the emergent economies. Diagram 4 shows the development of the absolute gross investments in billions of US dollars in the emerging and developing countries, the EU and the advanced economies (excluding the EU) from the middle of the 1990s. The following points need to be taken on board:

1. From 1995 to 2002, investment activity in all three groups of countries and thus worldwide was more or less constant. In particular, there was a worrying standstill in the emerging economies, as the growth in population was accompanied by a persistent decline in the capital labour ratio. At that time, around 80% of the global investment volume went into the advanced economies, although only 20% of the world's population lived there.
2. From the year 2002 onward, there was a considerable increase in fixed capital formation. Up to the crisis year 2008, the global investment volume doubled. The greatest increase was seen by the emerging and developing countries, coming to 250%. In the Euro zone, investment doubled, although in retrospect some of this was unsustainable. The share of the emerging economies in the overall global investment growth in the period from 2002 to 2008 was over 50%. This meant that its share in the global investment volume rose to 37%.

3. The global financial market crisis in 2009 adversely affected investment in the advanced economies in particular. Since then, there has been no recovery in the Euro area but at most stagnation at the level of the crisis year 2009. In the other advanced economies outside of the Euro area, investment has also stagnated over the last four years. Conversely, in the emerging countries the investment boom kept going until 2014 at least. The investment volume has risen sharply again there, so that half of global investment took place in this group of countries. Over the entire period from 2002 to 2015, fixed capital formation in the emerging economies increased more than fivefold.

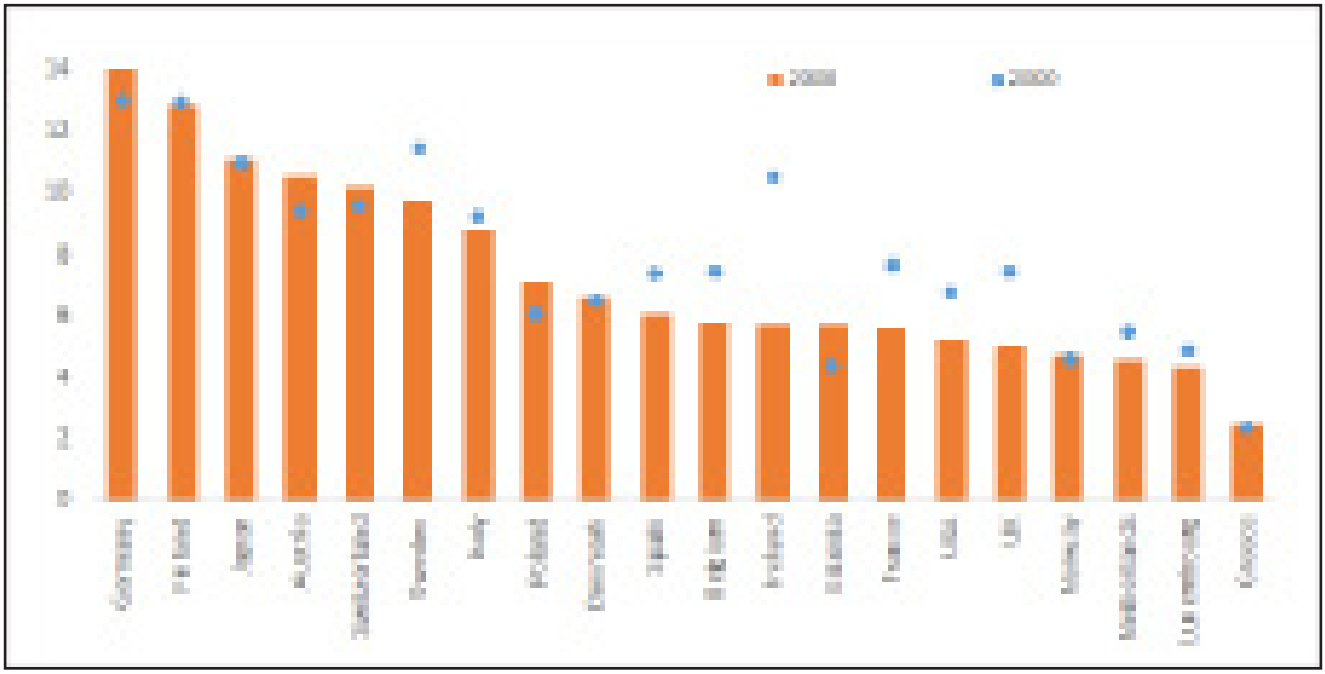
Diagram 4. Global investment. Domestic gross investment in billion US dollar



Sources: IMF; own calculations.

This notable structural change in global growth and worldwide investment activity that began fifteen years ago has had asymmetric effects on the advanced economies and has favoured them to widely varying degrees. Amongst EU countries, Germany, together with Finland, has had the highest share of investment goods in total output. The production of investment goods in Greece, Luxembourg and also France has been significantly lower in macroeconomic terms. This also applies to the US and the UK (Diagram 5). This analysis only covers the period from 2000 to 2008. 2008 was the first peal of the global investment boom before the global financial markets crisis. Moreover, the OECD structural data (STAN database for Structural Analysis) are only partly available for the period up to 2011. Any analysis on the basis of the years 2009 and 2010 would incorporate the distortions resulting from the global financial markets and economic crisis. However, on the basis of SNA data, the share of investment goods in Germany reached a somewhat higher level in 2014 than it had done in 2008.

Diagram 5. Production of investment goods in international comparison. Production of investment goods[1] as a percentage of total value added in 1999 and 2008



[1] Basic metals, metal products, machinery and equipment, transport equipment
Sources: OECD; own calculations.

The combination of a specific asymmetrical shocks (global investment boom as a result of the catching-up process in the emerging countries) and the specific and time path-dependent focus in economic structures on the production of investment goods lead to widely varying trade balance situations with investment goods (Grömling, 2014; 2016). The German trade balance and the current account balance are historically very responsive to the global demand for investment goods (Abelshauser, 2005). Thus, boom and bust in global investments have a significant impact on Germany's trade balance. The surplus in cross-border investment goods trading rose sharply in Germany over the last 15 years. The negative balances of the other Euro area countries do not reflect this (Grömling, 2016). The German trade surplus should certainly not be interpreted as the flipside of the corresponding trade deficits with investment goods of the other Euro area countries. Rather, it reflects the general fact that in periods of high global demand for investment goods, those countries that produce investment goods can achieve trade surpluses. This situation is comparable with the trade surpluses achieved by countries rich in raw materials during periods of high demand and high prices for raw materials.

3. Escalating uncertainties cripple global investment

In this context, the question arises which course the global investment activities will take over the coming years and what are the implications of this for exports and investment activities in Germany. There is currently a high level of uncertainty about the extent to which the geopolitical and economic uncertainties will increase worldwide as a result of the new Trump government in the US (Grömling, 2017). Developments at the beginning of 2017 suggest that economic cooperation is not going to get any easier. Existing trade agreements are under threat and there is no sign of any new ones. Instability is not confined to economic cooperation. There is a risk that geopolitical tensions may grow. The latent tension between the US and China, Russia and the Middle East is not improving. The relationship between the US and Europe may need to be rethought. Greater global political instability will hardly encourage global investment, which has already been in decline since 2014.

Then, there's the coming departure of the United Kingdom from the European Union, throwing a further veil of uncertainty over future economic development. On the one hand, Brexit is bringing economic uncertainty in its wake. This applies not only to the short and medium-term prospects of the British economy but also to its European and global trading partners (Grömling & Matthes, 2017). On the other hand, UK's forthcoming exit from the EU has also cast a long shadow over the current state and future prospects of the Union itself. In individual countries and between the countries there are calls for a re-framing of the responsibilities between national and European policies. The elections in some European countries this year will bring matters to a head. The effect of the fundamental freedoms in the European internal market on growth and prosperity are no longer being taken as read. There is no clear consensus on what the appropriate economic policy measures and reforms should be in respect of poor growth and sovereign debt. And finally, irrespective of the new situation in the US, there is little coherence in the formation of future trade agreements with other regions in the world. The awkward negotiations in connection with TTIP and CETA have demonstrated this. All this has a direct effect on the overall European business context for companies and thus their incentive to keep up and possibly expand their production capacity through investment.

Moreover, the election results in the US and the British referendum on whether to remain in the EU ultimately express a latent tendency to greater protectionism and nationalism. In the emerging countries, the economic benefits of globalisation are also being challenged. In general, a wide-ranging debate is taking place about whether growth and the drivers behind it such as globalisation, for example, are leading to greater inequality within countries. With scant attention to the facts, these protectionist tendencies from all political camps are having a dampening effect on global investment. The advantages of globalisation in terms of efficiency and prosperity for most of the population are simply ignored.

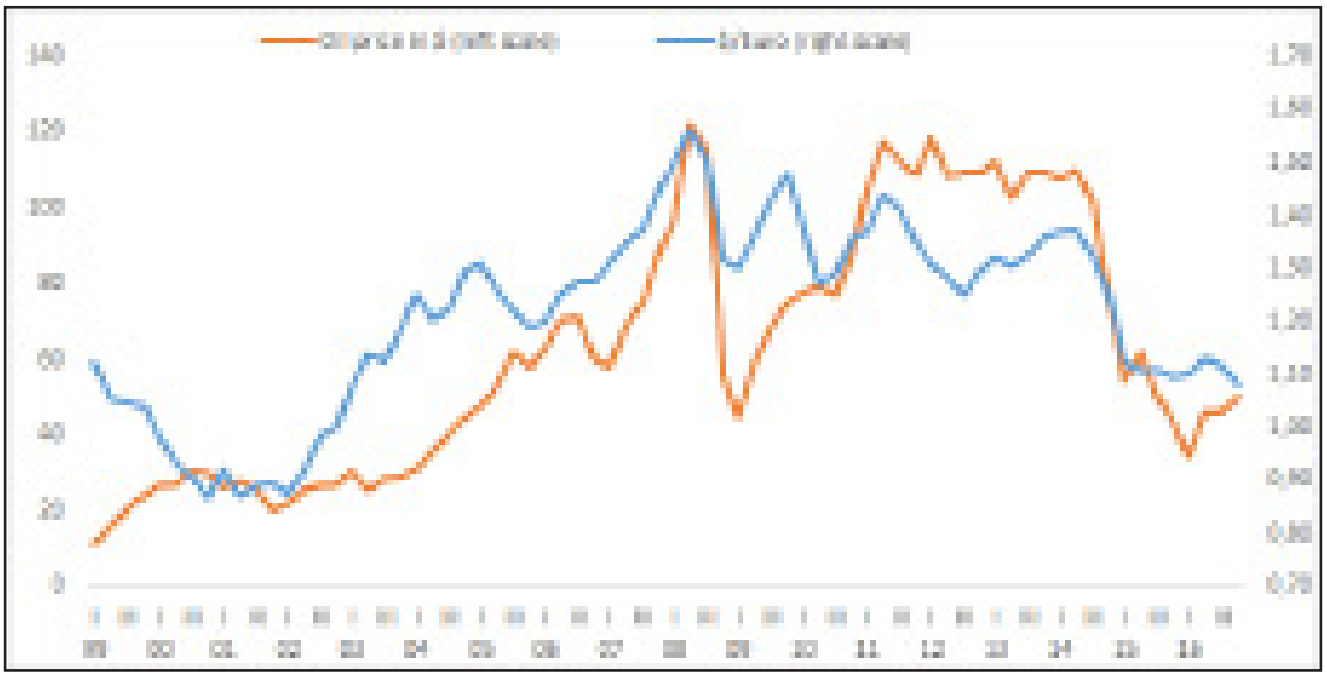
The economic consequences of the political uncertainties are already to be seen. Global investment has been declining since 2014 (Diagram 4) and this will have adverse consequences for the future growth potential of several countries (Grömling, 2017). This applies to the emerging economies. Their populations continue to grow. This would need to be accompanied by accelerated capital formation in order to boost productivity and the standard of living. In the advanced economies also there is no real alternative to further capital formation. In light of the economic slowdown expected to characterise the period from 2020 onward as a result of the drop in the labour force potential, additional contributions to growth are needed through capital and technological knowledge. Long periods of low investment do not only compromise the future contributions of the capital stock. Generally, investing in equipment leads to the use of state-of-the-art technology, yielding gains in terms of efficiency. A slowdown in fixed capital formation is likely to be accompanied by lower contributions to growth in terms of technological progress. Uncertainty can also muffle the incentives for technological progress. Technological progress includes not only all technological but also organisational changes. One dimension of technological progress is the international integration of a country in terms of production. A greater international division of labour via the intermediate goods trade should be interpreted as technological progress. Conversely, restrictions on internationalisation in value-added chains as a result of protectionism should be interpreted as technological setback.

4. Moderate outlook for 2017

The geopolitical changes mentioned will already have an impact on the German economy in the short term. Economic expansion will continue in Germany this year (IW Forschungsgruppe Konjunktur, 2016). However, the pace of expansion will drop perceptibly due to global uncertainties, the lack of impetuses due to the

falling prices of raw materials and fewer workdays. According to Institut der deutschen Wirtschaft Köln, real GDP will rise by between 1% and 1.5% in 2017.

Diagram 6. Oil price and euro exchange rate. Oil price per barrel (Brent Blend) in US dollar and US dollar per euro



Source: European Central Bank.

Despite the uncertainties set out above, the global economy will initially continue to experience moderate expansion. In some of the large emerging countries like Russia and Brazil, the situation has stabilised again. Whether this situation will last is an open question. The Chinese economy will slow down but as of the beginning of 2017 a hard landing is not to be expected. This assumes that relations between the USA and China do not deteriorate. In the advanced countries, the economic dynamics will remain subdued. Growth in Europe will continue to be modest. The forthcoming Brexit is putting a damper not only on the economic prospects of the UK but also on those of its trading partners. All of the uncertainties portrayed will hold back investment in many countries. It has already been shown that global investment activities have been declining since 2014. There is currently no expectation that this trend will change significantly. Whether the investment impetuses called for in the US will materialise is another open question. Against this background, global production will increase in 2017 by 3.5%. After a weak performance in 2016, global trade will pick up again. However, this increase will certainly lag far behind the former growth levels of around 5%.

German foreign trade has been able to hold its own fairly well in what has recently been a calmer economic context globally. As regards the future development of German foreign trade, the following arguments must be considered. The significant increase in geopolitical and economic uncertainty means that the volume of global trade will continue to expand but only moderately. In particular, the restraint in global investment will dampen Germany's export prospects. Temporary relief from exchange rate developments (Diagram 6) will serve as a counterbalance to the rising unit labour costs. We are not assuming any improvement in the price competitiveness of German exports over the forecast period. In this broader context, growth in exports in 2017 is likely to be modest. The contribution of net exports will knock off a quarter of a percentage point from economic growth.

The highly uncertain global context and the moderate trading prospects for German companies will hold back Germany's already modest investment levels. This poor dynamic is an expression of the fact that in the current global context companies will naturally invest no more than necessary. This is the case despite the continuing highly favourable financing conditions and good capacity utilisation. The expansion of the employment market, low interest rates and the distortions in savings behaviour will also continue to favour private residential construction. Public residential construction will continue to be driven by immigration. Commercial construction will remain at low levels in light of the overall moderate business investment.

Last year, private and public consumption already largely determined the economic dynamics in Germany. Over the forecast period, growth in Germany will continue to be driven by private and public consumption to a large degree. Public consumption will be generated in particular by additional government expenditure for the accommodation, provision for and integration of refugees. Demand for private consumption got an extra push in 2016 from the lower prices of oil and raw materials (Diagram 6). That is why the inflation rate in 2016 was only 0.5%. However, this energy price effect will no longer come into play in 2017 and consumer prices will rise by a good 1.5%. However, with low credit costs and receding savings incentives, the lower interest rates will continue to boost private consumption. The continuing very positive developments on the labour market must be taken into account in evaluating the persistently high contributions of private consumption to growth. Despite the high level of uncertainty and moderate economic prospects, the positive development on the German labour market will persist. The drop in unemployment will continue to lag considerably behind the creation of new jobs, as these new jobs are being taken up by the inactive reserves and by immigrants, primarily from Central and Eastern Europe. The people who fled from war in their own countries in 2015 and 2016 have not yet entered the labour market to any significant degree. Most of the refugees are still in the course of their asylum proceedings and are not yet or only marginally available for work. They tend to be participating in language courses and integration measures and acquiring qualifications. However, by the second half of 2017 at the latest, they will increasingly be leaving these support measures behind and entering the workforce, in particular in the more low-qualified segment (IW Forschungsgruppe Konjunktur, 2016).

5. High potential for the future

The German economy is characterised by a relative large manufacturing sector and in particular by a high level of production of investment goods (Diagram 5). Due to the comparatively high level of concentration of economic structures on the manufacture of tradable goods, global developments and in particular global investment activities are extremely important for short-term dynamics, and long-term development (Lichtblau et al., 2015). Despite the current high levels of politically induced uncertainty, the German economy with its product portfolio has good chances in the long term. With its strong focus on investment goods, large sections of German branches are in an excellent position and will be poised to make good use of any future upturn in the global investment cycle. A number of global megatrends have provided the economic narrative for these optimistic long-term prospects (Grömling & Haß, 2009):

Demographic development: By 2050, according to UN forecasts, the world's population, currently at 7.5 billion will be around 9.5 billion. Almost all of that growth will be in today's developing and emerging countries. The number of elderly persons will triple by 2050 to over 2 billion. Companies directed towards the global market will have good chances of further extending their production domestically and abroad with the world's population increasing by almost a third. In particular, those sectors that address the needs of elderly

people will have good sales prospects. These include the pharmaceutical industry, biotechnology, medical engineering and the industrial suppliers of medical services.

Urbanisation: While in 1950 a good 70% of the world's population, which was then 2.5 billion, lived in the countryside with merely 30% in cities, in 2008 the proportions were fifty/fifty for the first time in the history of mankind. By 2050, the number of city dwellers will almost double, from 3.5 billion at present to 6.3 billion. The transport, supply and waste disposal infrastructures in mega cities, which are often inadequate even today, will struggle to keep apace. Enormous investment will be needed. There will be a high need for investment, for example, in the supply and waste disposal segments. Companies that are well set up to operate internationally can expect to have great market potential.

Resource scarcity: Since the start of the new millennium, oil prices have at times reach levels of significantly more than 100 US dollars per barrel (Diagram 6). Similar trends have been seen in relation to many other natural raw materials. In conjunction with the increasing global population, the scarcity of natural resources will lead to unusually high challenges and opportunities. There is huge potential in the development and production of equipment for using renewable energy in an environmentally friendly way. This also applies to innovative mobility concepts in the car industry. Finally, there is potential for construction companies and building materials industry in light of the ever scarcer resources, for example through increased energy-orientated refurbishment.

Climate change: The Intergovernmental Panel on Climate Change (IPCC) assumes that the surface temperature of the earth will get higher. Although the extent of this is not known, we can expect a great need for structural adjustment on a regional basis. This requires a whole range of measures with which society, the government and the economy can face up to climate changes. Machinery construction and the electronics industry are drivers in matters of environmental technologies. The chemical and pharmaceutical industry can also make a significant contribution to adjustment to climate change. The energy and nutrition sectors also have a global dimension.

Safety: Political unrest, wars, crime, terrorism, natural catastrophes and epidemics - there is a long list of threats to life and limb. In future, numerous product innovations and accompanying services will be needed in order to meet people's varied safety requirements. Which industry and service sectors will benefit from this is not always easy to identify due to the many sectoral crossovers. With reference to natural catastrophes and medical provision, pharmacy and chemistry in particular will play an important role.

Digitisation and technical progress: The great technological cycles of the past – for example, electrification, chemistry, microelectronics – in most cases emerged from manufacturing. In Germany, research and technology are traditionally the domain of manufacturing. Future technologies such as industry 4.0 also often emerge from a manufacturing space. German manufacturing firms with its strong research base and broad positioning has good chances of driving the coming technology cycles. The global networking of companies and the international division of labour on the one hand and digitisation on the other hand require smooth information exchanges. From the perspective of the processing sector, the electrical and electronics industry should be emphasised. With its innovations it will make a knowledge-based economy possible. In addition, its product innovations will serve other sectors for process innovations and make production processes more efficient.

The discussion above refers largely to manufacturing. This entails a potential misunderstanding – that Germany is all about manufacturing and manufacturing alone is responsible for and capable of bringing about prosperity. That is an error, for the following reason: Nowadays, manufacturing companies are increasingly supplying their goods in combination with accompanying services. In many cases, the traditional distinction between goods and services no longer makes sense in economic terms. On the highly competitive international manufacturing markets, these services often confer a competitive advantage. In addition, modern industrial processes do not work without varied services. In many areas, it is a case not of manufacturing versus services but manufacturing plus services. Moreover, German manufacturing is an excellent example of thinking and acting internationally. German manufacturers value-added-chains not only have a high inter-sectoral nature (manufacturing-service combination) but also a highly international one in the form of cross-border intermediate goods compounds (Lichtblau et al., 2015). Germany's high import ratio reflect this.

6. Reduction of institutional uncertainties

The current economic risks are primarily political in nature (IW Forschungsgruppe Konjunktur, 2016). Uncertainties are caused by a lack of clarity about future transatlantic and transpacific relations as well as the current state of the European Union. The sovereign debt crisis in the southern countries of the Euro area, the need for reform in a number of European countries and difficulties in the banking system still have the potential to cause significant harm to the Euro area's short and long-term economic prospects. A further sovereign debt crisis could lead to another banking crisis. The EU's lack of decision-making capacity, the differences between the European Member States and in particular the British decision to leave the Union constitute an underlying threat to Europe's economic development. All this will lead to less willingness to invest and thereby curtail the economic perspectives. Although the direct economic effects of Brexit may well be manageable for most EU members in the short term (Grömling & Matthes, 2017), instability in Europe and the loss of faith in Europe's future have created a climate of reduced growth and investment prospects.

On the other hand, a policy that would reduce institutional uncertainty in Europe and safeguard Europe's ability to function as an internal market and as a political unit would have a stabilising effect on expectations and thus encourage investment. This includes making progress in reducing sovereign debt as well as maintaining freedom of movement within Europe and safeguarding the EU's ability to act in trade policy. It is also important that the Brexit negotiations do not send out any signals that make breakaway movements in other countries attractive. Without progress on reform in the Southern European crisis-stricken countries, there is unlikely to be any way out of the low interest phase. Monetary policy would remain restricted in it options.

For Germany as an export-oriented economy, global risks are particularly significant. Thus, increasing protectionist trends constitute a significant risk for its medium and long-term dynamics. A clear commitment by Europe to free trade could reduce these dangers and also send out a positive signal encouraging new opportunities for trade. The possibility of the US taking a protectionist and isolationist course constitutes a threat to Germany's medium to long-term growth. The resulting uncertainties are already having short-term negative effects on companies' willingness to invest. The US' increasing unpredictability must be countered by greater decision-making ability and predictability on the part of the European Union. The pressure on Europe to solve its own homemade problems has only got greater with Trump heading the US government.

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The Polish economy: the story of convergence

Leszek Balcerowicz & Andrzej Rzońca

1. Introduction

Under socialism Poland fell far behind the West in terms of GDP per capita. While in 1950, GDP per capita in Poland was slightly higher than in Spain, in 1990 it accounted merely for about a half of GDP per capita in this Western country[1]. By contrast after the collapse of socialism Poland was very successful in catching-up with the West.

In what follows, we deal with the three issues. First, we present some basic facts on Poland's convergence with Western economies after the collapse of socialism. Second, we refer to domestic challenges ahead of Poland and the ways they are addressed by the government which is in power since late 2015. Third, we discuss some external challenges.

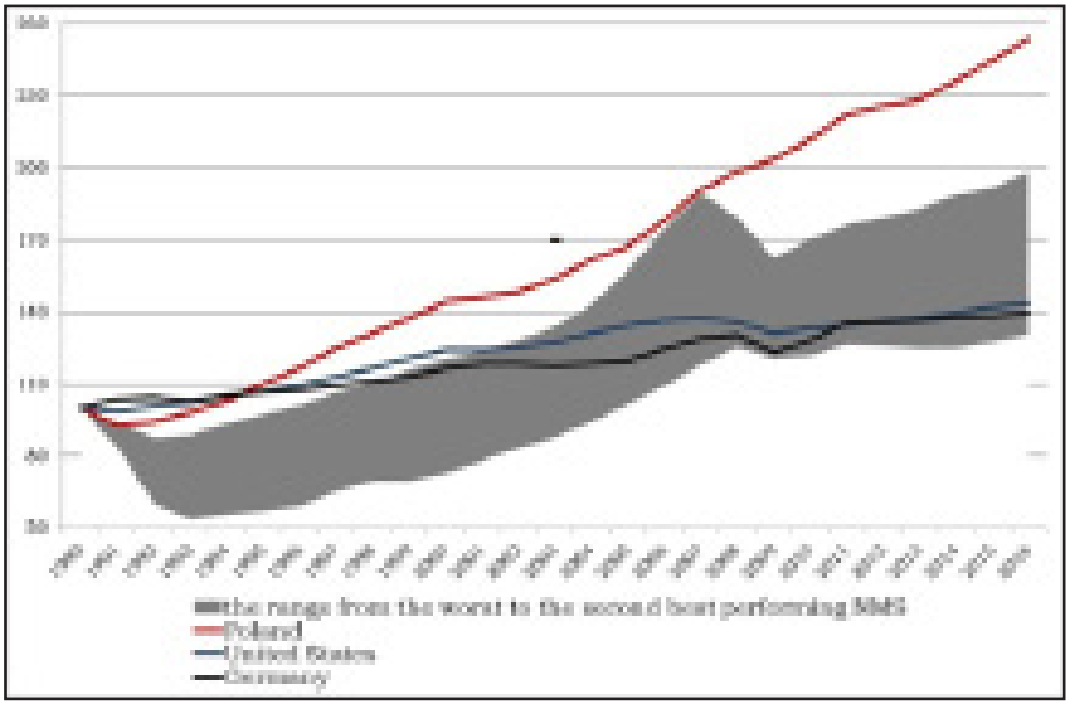
2. Some basic facts on Poland's convergence with the West

Since the beginning of transition in 1989 Poland experienced the fastest economic convergence among Central European countries (see Chart 1). In 1991-2016 the country was growing at a pace exceeding 4% a year. While in 1990 its distance in terms of GDP per capita to, e.g. Hungary was almost as large as its current distance to Germany, in 2012 Poland became richer than Hungary (cf. IMF, 2016a).

The economic success achieved by Poland was unprecedented in its history. Over the first two decades of the transition, the increase in GDP per capita was six times as large as between the First and the Second World War. Poland has managed to reduce by about a half its gap in terms of GDP per capita against Germany. In some sense Poland repeated previous German economic miracle. Since 1990 Poland's cumulative growth was as strong as in Germany in 1955-1980 (see Chart 2). If Poland managed to keep that pace of growth, then it would join the most advanced countries in the world, such as Germany, in 20-some years.

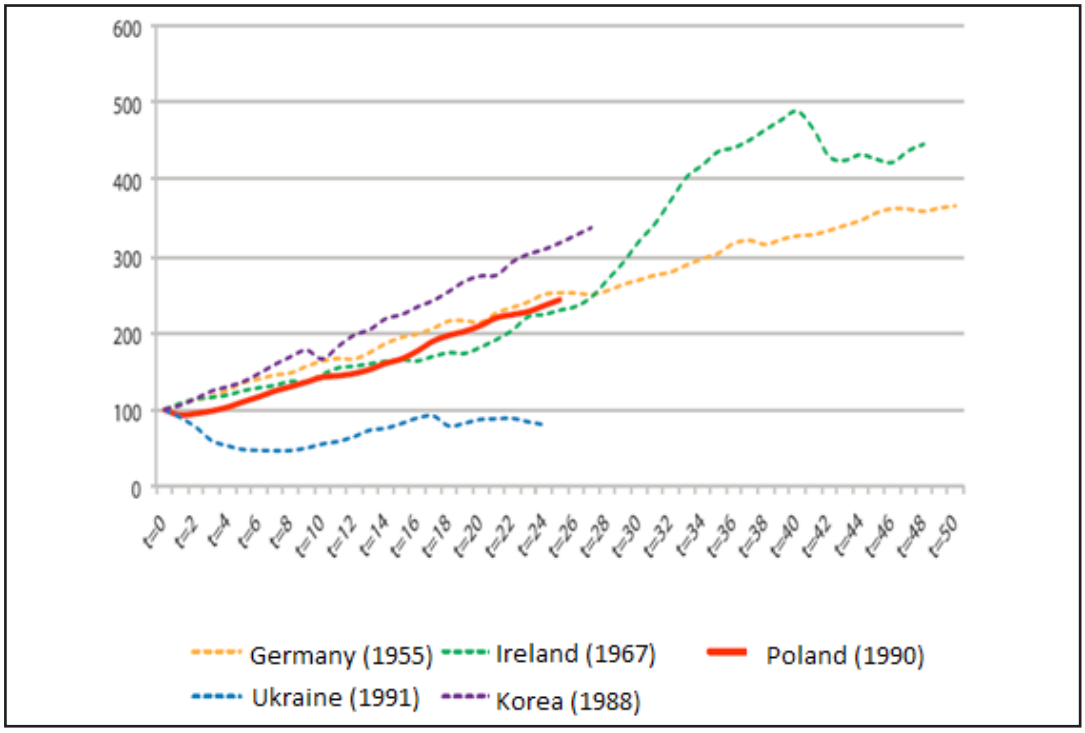
1 Maddison-Project, http://www.ggdc.net/maddison/maddison-project/home.htm

Chart 1. GDP per capita in Poland and other New Member States of the European Union vs. Germany and the USA (1990=100)



Source: IMF WEO.

Chart 2. GDP per capita path in selected countries after they reached GDP per capita level as it was in Poland in 1989



Source: The Conference Board Total Economy Database™.

What explains the economic success of Poland? Let us refer to an analytical scheme which we have presented elsewhere (Balcerowicz & Rzońca, 2015a). A longer-term economic growth depends on a country's institutional system which we divide into the propelling and stabilizing institutions. The former are mainly responsible for the growth of investment and that of the overall productivity and include, first of all, the type and protection

of property rights and the related intensity of market competition. The latter factors – together with external shocks – determine the frequency and severity of negative shocks to the economy which produce serious breakdowns in growth and thus tend to slow down its average rate over a longer period. The stabilizing institutions provide a framework for the monetary and fiscal policy, and include such institutions as the monetary regime, central bank, the financial supervision, etc. The extent of independence of these institutions depends, in turn, on a fundamental institutional variable: the extent to which the top political authorities are constrained.

Both types of institutions may change over time as a result of institutional policies, i.e. reforms, which in turn are determined by the political economy factors: the balance of various pressures, historical circumstances, personality factors etc. (for more on this see Balcerowicz & Rzońca, 2015a).

Poland's initial economic strategy prepared in the late 1989 and launched on the 1st of January 1990 had the two features:
1. There was little delay between the creation of Mazowiecki government (September 1989) and the start of the new policies.
2. Even though some measure were taken earlier, the bulk of them was introduced as one large package, which contained market reforms and tough stabilization policies that aimed at the elimination of the inherited hyperinflation.

This radical approach has been often called "shock therapy" and contrasted with "gradualism". This juxtaposition was worse than useless, as it is inherently imprecise and does not allow to sensibly express what are the main problems and tasks in a collapsing socialist economy. It has been used in both economic and popular debates to delay and dilute the market reforms and the macrostabilization (for more on this see Balcerowicz, 1995; 2014).

The initial package of reforms massively strengthened the propelling institutions as it consisted of radical foreign trade and price liberalization as well as of the dismantling of the bulk of domestic monopolies. The resulting sharp increase in competition was strengthened thanks to the hardening of the budget constraint of the – still dominating – SOEs and because of the reduction of inflation to two-digit level. A further decline of inflation was steady but slower until Poland achieved the inflation level of 1-3% in the early 2000s.

The defining feature of the socialist system is a monopoly of state ownership – the result of the initial nationalization of the private sector and the ban on the creation of private firms. This monopoly was the main reason for the disastrous economic performance of the socialist economy. Also, it was incompatible with civil liberties and the democratic political competition, as otherwise private ownership, a basic human right, would sooner or later be allowed, and socialism would come to the end.

Against this background one should mention what has happened to the privatization of the Polish economy understood as the increasing share of the private firms in GDP and employment. This process results from three measures:
1. Eliminating the ban on and discrimination of the private firms.
2. Forcing or encouraging the state-owned enterprises (SEOs) to transfer at least some of their assets – via their sales or leasing or bankruptcy – to the private sector.
3. Privatizing the inherited SEOs (transformational privatization).

Step 1 was taken already in 1988 by the last Communist government (similarly the Soviet authorities under Gorbachev legalized the private firms under the guise of the "co-operatives"). The transformational privatization started in 1990 and then continued at the various pace, depending on the political coalitions. However, until 1988-2000 its pace was slower than the authors of the initial economic plan had envisaged. What compensated to same extent for this deficiency in Poland was rapid growth of the new private sector – the result of the elimination of the ban in 1988 and of much tougher environment for the SOEs introduced in 1990, which forced them to shrink or to be liquidated. Therefore, assets were transferred to the private sector. Thus, external liberalization, dismantling the domestic monopolies and the hardening the SEOs' budget constraint were important privatization policies in Poland.

There is no space for the systematic description of reforms in Poland. The pace of their introduction was uneven but until recently there were no major anti-reforms, i.e. steps, which would reduce the scope of the markets or the private sector, or would seriously damage employment. A second period of acceleration of the reforms – after the initial phase of 1990–1991 – occurred during 1998-2000. It included a pension and health reform as well as the speeding up of the privatization of the SOEs and a massive restructuring of the loss-making coal sector (see Balcerowicz, 2014).

One should add that if the whole transition period is taken into account, then some other NMS, in particular Estonia and Slovakia, introduced even more radical reforms than Poland, and thereby progressed even faster toward a free market economy. This is what the Transition Progress Index, calculated by the European Bank for Reconstruction and Development (EBRD), indicates[2] (cf. Havrylyshyn, Meng & Tupy, 2016). Unsurprisingly, these countries began to grow faster than Poland. Estonia's growth was so fast, that in 2007 this country almost outperformed Poland in terms of cumulative increase of GDP per capita since 1990 (cf. Chart 1.) But then global financial crisis broke up and Estonia, and other NMS turned out to be less resilient to this shock than Poland was.

This brings us to the second determinant of the pace of the longer-run economic growth: the frequency and intensity of the growth break downs. It is especially in this respect that Poland's growth path has been so far unique. None of the economic slowdowns has culminated in decline of GDP. Poland was the only EU economy which continued to grow even during the global financial crisis (GFC) of 2008-2013, largely because it had avoided a major credit boom – and the resulting bust. The main reason for that was a countercyclical monetary, supervisory and – to some extent fiscal policy conducted within the framework of previously strengthened stabilizing institutions: an independent central bank, a professional and tough banking supervision, a constitutional ceiling of the sovereign debt of 60% of GDP, a floating rate of exchange. The central bank was sensitive to the risk of the inflation and tightened its monetary policy already in 2004. This bias against inflation – a lesson from the inflationary experience of the previous years – distinguished its approach from that of the advanced economies with their excessively low interest rates (Ciżkowicz & Rzońca, 2015). On top of that, when the growth of mortgage credit denominated in the foreign currencies started to accelerate, the banking supervision – then a part of the central bank, introduced special restrictions (foreshadowing measures which were later termed: "macro prudential policy"). As a result, the mortgage credit boom was postponed and thereby shortened in comparison with most other NMS: it started in 2006 and was over in 2008. As the banks had avoided major excesses, they were resilient to the GFC, once it erupted. No larger bank suffered any

2 Obviously, the index is only imperfect measure of transition countries' progress toward a market economy. Its shortcomings hindering its application in quantitative analysis are described by, e.g. Rzońca & Ciżkowicz (2003).

serious problems. Should the credit boom be allowed to develop like in some other CEE economics, Poland would have suffered a severe recession (see Bakker & Gulde 2010).

Early and massive improvement in the institutional and macroeconomic conditions for investment and growth have attracted more than 200 billion euro of FDI, especially from the neighbouring Germany. Note however that their stock amounting to 45% of GDP according to UNCTAD, although high by international standards, is the fourth lowest among the NMS and exceeds the stock of FDI only in Slovenia (28% of GDP), Lithuania (35% of GDP) and Romania (40% of GDP), and lags especially far behind one in Estonia (85% of GDP) and Bulgaria (86% of GDP). That said, FDI contribution to the modernization of Polish economy can hardly be overestimated. Poland benefitted from its backwardness, as at the beginning of transition it was even poorer than Bulgaria and Romania. At the same time, it attracted a large amount of FDI relatively soon, much sooner than Bulgaria, the current regional leader in FDI stock to GDP ratio (Carstensen & Toubal, 2004). Thus, FDI inflow was more evenly distributed across years in Poland than elsewhere in the region and could be absorbed without causing any distortions. Moreover, Poland's strength was a broad participation of foreign capital in the privatization, which accelerated restructuring of formerly state-owned enterprises, raised their productivity, and enabled positive productivity spillovers to local firms[3] (see, e.g. Barrell & Holland, 2000; Campos & Kinoshita, 2002; Dries & Swinnen, 2004; Damijan & Rojec, 2007; Kolasa, 2008). Lastly, sectoral composition mattered too. Foreign capital largely built modern banking sector in Poland which enhances productive allocation of capital and labor. Simultaneously, the sector's growth was not excessive, unlike for example, in Baltics. But first and foremost FDI inflow to the manufacturing was particularly large in Poland. In this sector convergence effect was stronger than in others (Bijsterbosch & Kolasa, 2010).

Thereby FDI simultaneously enhanced the competitiveness of Poland on global markets (Kaminski & Smarzynska, 2001). In 1989-2015, according to the WTO data, Poland managed to more than triple its share in world exports, while the share of most other EU countries inclusive of Germany was shrinking. Poland's exports grew much faster than exports of such export-oriented economies as South Korea. Among NMS only Estonia was more successful than Poland in expanding its share in world exports.

FDI not only increased the volume of Polish exports, but also changed their structure (see, e.g. Harding & Smarzynska-Javorcik, 2009; 2011). According to the UNCTAD data, the share in exports of goods requiring a medium to high technology to be manufactured nearly doubled in Poland since mid-1990s and now it accounts for almost 60%. Poland's exports became visibly more downstream than its imports, unlike at the beginning of transition, when Poland was an upstream economy, exporting mainly natural resources and goods of a relatively small degree of processing. That said, Poland is not the regional leader in the technological advancements of exports across NMS. It lags behind Hungary and the Czech Republic.

Let us now discuss the role of the EU in Poland's economic success. The very prospect of entry into the European Union had acted as a powerful incentive for certain reforms, as this prospect was very popular in Poland. That reform leverage was not especially important when the reformers were in the government, but it was activated when the less reform-minded politicians took power. Upon entry into EU the reform leverage has become much weaker: this applies to all the members of EU. There is no good substitute for the reform pressures in the respective countries. However, for the new members, including Poland, the EU accession has brought about some additional drivers of economic growth. One, and by far most important, has been the access to Single Market (especially trade) and the related stimulus for the FDI. The second factor

3 These spillovers are more limited (at best) in the case of fully owned foreign investment (cf. Smarzynska-Javorcik, 2004).

has been an increased inflow of the EU structural funds of which Poland has been the largest recipient. There is much debate on what is the impact of those funds on the supply side of the recipients' economies, i.e. their longer-term economic growth. However, there is little doubt that EU funds have speeded up the upgrading of Poland's poor infrastructure. In particular, about 10,000 kilometers of roads were built or modernized thank to the EU funds. Eight out of ten major cities in Poland have gained the highway connections with Berlin. The infrastructure has disappeared from the list of the significant growth barriers, perceived by the entrepreneurs (see Chart 5.)

Finally, it is worth stressing that social indicators in Poland have outperformed economic ones. According to the OECD "better life index", which compares well-being across countries, based on 11 topics, Poland ranks higher than in terms of GDP per capita or household net financial wealth. It ranks particularly high in education and skills. 91% of adults aged 25-64 have completed upper secondary education, which is among the highest rates in the OECD. Young Poles go through slightly more years of education than the OECD average. Moreover, they have access to the education of higher quality than the majority of their colleagues abroad. Poland is among top-performing European countries in the OECD's Programme for International Student Assessment (PISA) that evaluates students' skills such as reading literacy, math and sciences. Reform of the education system in 1999 weakened the impact of students' socio-economic background on their results.[4]

The income disparities in Poland stabilized in the mid-1990s and began to gradually decline after the EU accession.

The country ranks clearly above the OECD average in personal security, too. The homicide rate, after an increase in the 1980s and at the beginning of the transition, has been steadily decreasing since 2002 and has already returned to the level of the 1970s. It is four times as low as the OECD average.

Lastly, even though Poland still lags behind most other OECD countries in terms of life expectancy, the index has considerably improved since 1990, by almost 12% for men and more than 8% for women. By comparison, during the last 25 years of socialism it remained broadly unchanged for men and improved by 4% for women.

3. Domestic challenges to the future growth in Poland

Past success does not guarantee the future ones. Multi-year forecasts indicate that growth of Polish economy will be steadily decelerating. At some point Poland may even start diverging (see Chart 3). These forecasts are built on the assumption of no reforms which would strengthen the propelling institutions. The forecasts do not consider policies which would weaken these institutions as well as external shock which would hit Poland's economy. We analyzed the reasons for the slowdown of Poland's economy in a report (Balcerowicz & Rzońca, 2015b) published just before parliamentary elections in October 2015.

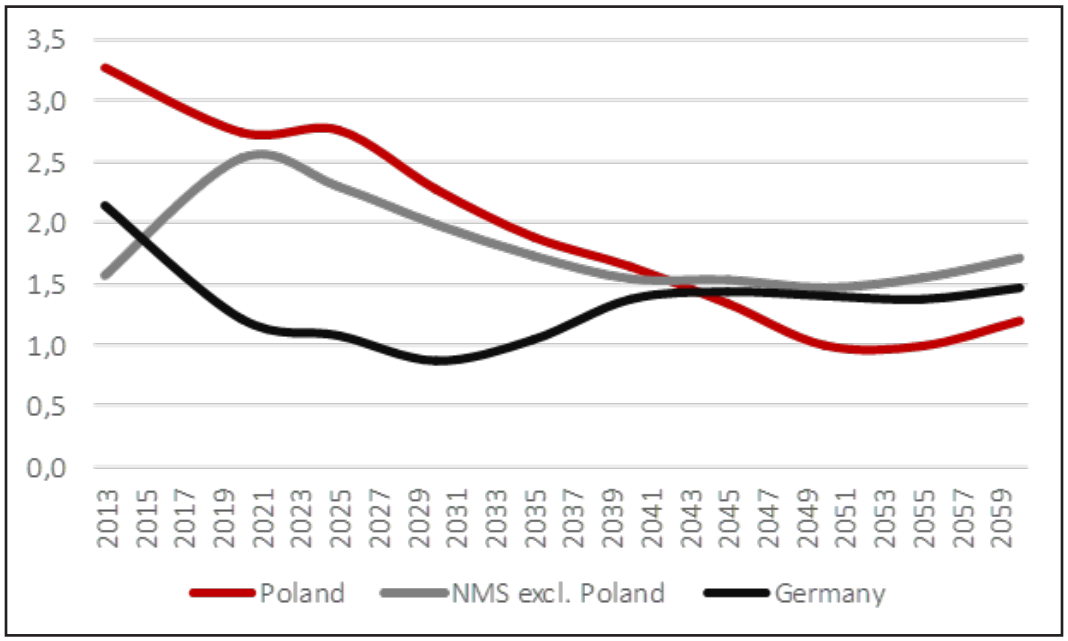
First, growth would decelerate, because of the shrinking labor force due to unfavorable demographics. Population aging in Poland will be among the fastest in the EU (see Chart 4). Even if there were an effective prescription for raising the fertility rate, one cannot turn the clock back to the 1990s and 2000s, and increase the number of births during that period. Children who were not born then, will be missing on the labor market

4 The reform deeply changed curriculum, provided schools with significant autonomy, introduced exams prepared and checked at the national level, shortened primary school from eight to six years and introduced academic school of three years, thereby extending decent education to children from poorer families and small villages, and deferring by one year a separation of pupils by academic ability in secondary education.

in coming decades. However, this gap can be filled by drawing more people onto the labor market and by extending the time they spend in work force (which calls for an increase in effective retirement age). Catching up with Germany in terms of the percentage of working population would be sufficient to compensate for the loss in employment due to the population aging (assuming an increased retirement age).

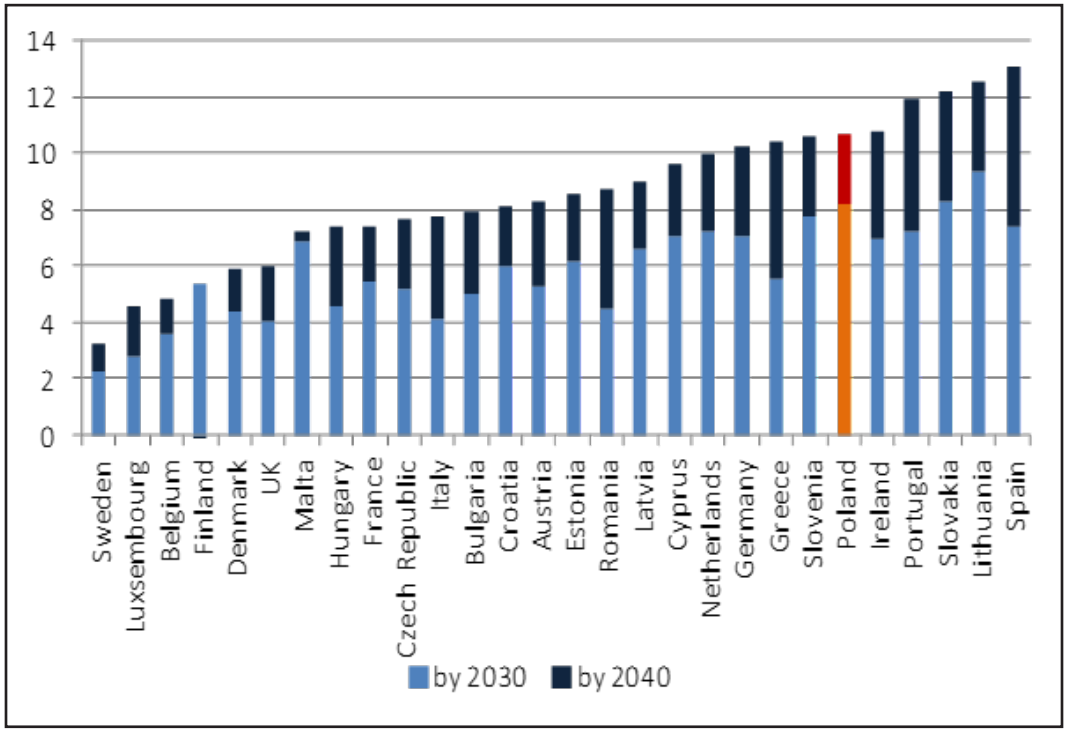
Second, and the most important, the growth of the overall productivity – the main driver of Poland's successful catching up with the West, has been steadily decelerating since the early 2000s and has sharply slowed down after the outburst of GFC.

Chart 3. Multi-year forecasts of GDP per capita growth for Poland, the other NMS and Germany



Source: EC (2015).

Chart 4. Change in the share of old-age population in total population in the EU countries (percentage points)



Source: EC (2015).

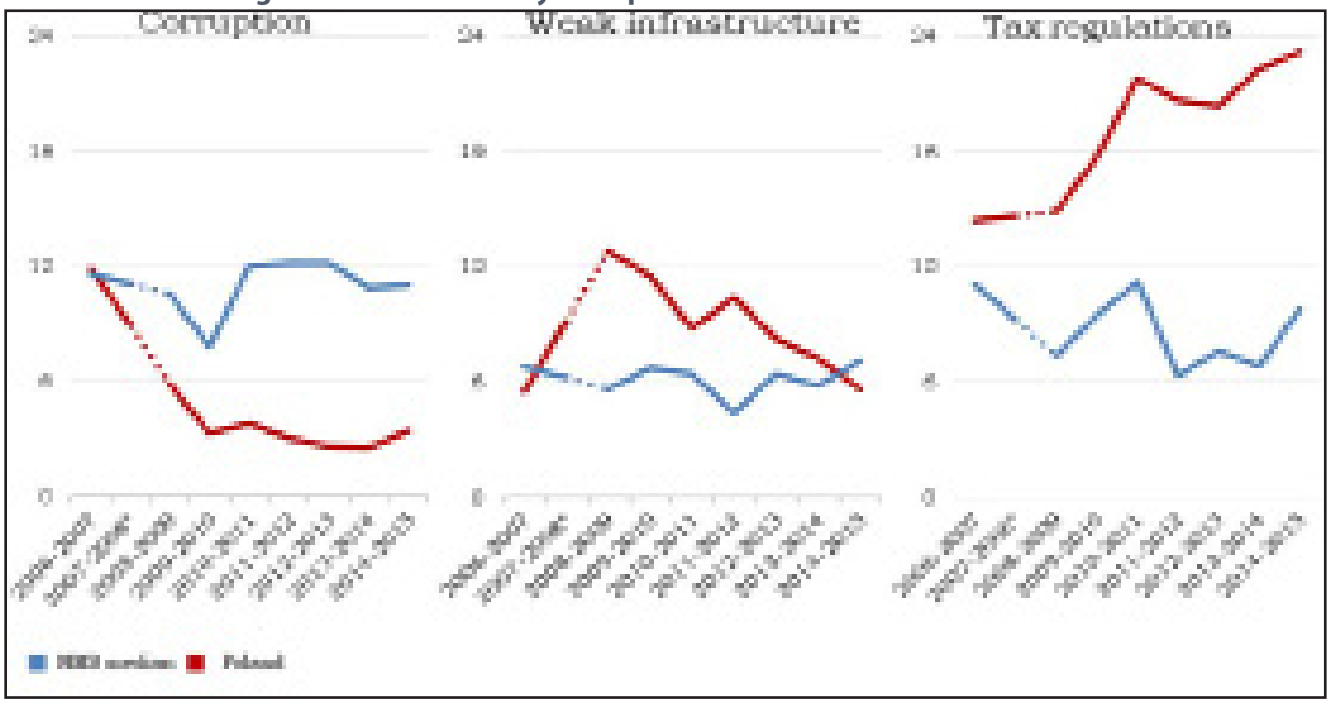
Massive improvements in the institutional and macroeconomics framework since 1989 have released the powerful forces of competition, innovations (largely based on technology transfer) and produced unprecedented structural change. However most of the relatively easy changes have been already exhausted. Waste common under socialism has been already removed. Modern sectors such as IT, retail, banking, or business services, whose development was previously blocked for ideological reasons and which significantly influence performance of other sectors, have been already build up. Technology in many previously underdeveloped sectors (like telecommunications, but also in manufacturing) has steeply improved due to unlocked transfer of technology from abroad. With the gap in productivity between Poland and the West considerably reduced, room for simple and imitation has narrowed (and will further narrow down), and the competitive pressure from abroad has weakened (and will further weaken). Great importance of this pressure for productivity growth is confirmed by its rate, much higher in manufacturing than in the rest of economy, which is less linked to foreign economies. Almost two-third of the workers from a very unproductive agriculture shifted to much more productive market services and manufacturing. These two sectors jointly account in Poland for a similar percentage of employment as in the EU-15 (the share of manufacturing in Poland is by 5% points higher and that of market services 11% points lower). Clearly, the scope for productivity-increasing structural change in Poland is now much narrower than in the 1990s. Further improvement requires further market reforms which would strengthen the competition and investment.

Unfortunately, the investment ratio in Poland is only 20% of GDP and that of business investment barely 10% of GDP (compared to the average in the region exceeding 16% of GDP.) The main barrier to business investment and the related growth of productivity is the instability and the complexity of laws, especially the tax law. This discourages private investment and encourages firms to hide in the shadow economy.

The complexity of taxes negatively distinguishes Poland from other NMS (see Chart 5.) To a large extent it is responsible for the fact that the costs associated with administrative requirements are much higher than on average in the region. The complicated tax system generates high costs not only for businesses but also for the tax administration. Among OECD countries expenditure on its maintenance consumes larger percentage of the tax revenue than in Poland only in Slovakia.

The instability of the tax regulations, along with the ambiguity of the tax enforcement is an essential source of uncertainty with regard to return on business investment. Each of tax laws and the general tax code were amended on average at least a few times a year.

Chart 5. Barriers to growth as indicated by entrepreneurs. Poland vs. other NMS in 2006–2015



Source: WEF (2014).

The instability of the tax law is a manifestation of a wider problem of the inflation of laws, which makes it very difficult for people to assess whether they act in compliance with the regulations or not. With regard to pages of legislation entering into force per year Poland outruns not only the Czech Republic, Slovakia and Hungary, but even France or Italy, often seen as exceptionally bureaucratized (Grant Thornton, 2016).

Poland's should increase the competitive pressures in some sectors of economy. This is indicated by larger differences in productivity across firms than in the West and other countries of the region, higher mark-ups (Egert & Goujar, 2014), lower capacity utilization, and greater differences in profitability (Lewandowska-Kalina, 2013).

The competitive pressure is reduced by the barriers to entry in the form of excessive regulations and the widest state ownership of companies in OECD countries. These companies still employ around 900,000 people, in particular in the upstream sectors, which affect costs of almost every firm. At the same time, these sectors are in Poland more monopolized than on average in the EU or in the OECD. In each of these sectors, except telecommunications, Poland lags far behind the countries leaders.

If Poland fails to address the discussed challenges and as result suffers a serious slowdown, emigration will deepen the slowdown. Where people are free to move, as they are in the EU, they vote with their feet and choose to live in countries with higher living standards or at least more favorable outlook and expanding opportunities.

Unfortunately, the current Polish government has not only blocked all the necessary reform but also it is introducing anti-reforms that weaken each of the main sources of economic growth: employment, investment and increase in productivity.

Anti-reforms detrimental to employment include, in particular, lowering of the retirement age (from late 2017), introduction of generous child benefits for all parents, inclusive of those who are neither working nor looking for job, increase in the mandatory school age, and steep rise of the minimum wage.

By reducing the labor supply, these anti-reforms will also hit the investment. Businesses will be reluctant to invest in expanding production capacity, where they have serious problems not only with finding employees for new production lines, but also with the maintenance of staff sufficient to service existing ones.

The investments will also be harmed by other anti-reforms and policies. The increase in the budget deficit would have a negative impact on the national savings, and thereby on possibilities to finance investment. In turn, the profitability of investing is undercut by anti-reforms that increase the risk to investment. The ruling party has paralyzed the Constitutional Court. It sets still new records of inflation of law (last year, it came into force more than 30,000 pages of regulations[5]). At the same time it reduces quality of legislation.

Policies that discourage investment, at the same time harm productivity growth. Lower investment means less purchases of new, more efficient technologies and less frequent reorganization of work, which such purchases often force. Moreover, measures that discourage investment, at the same time make it more difficult and sometimes impossible to reap scale economies. It is safer for entrepreneurs not to be visible by the government, whose decisions are subject to less and less constraints.

The government harms productivity also by nationalizing – via the companies it controls – some banks, i.e. the sector, which, on the one hand, stands out in Polish economy due to its efficiency and, on the other hand, has strong impact on productivity in other industries. At the same time government does not respect rights of minority shareholders, e.g. it forced energy companies to keep the state-owned coal mines and a large construction company afloat.

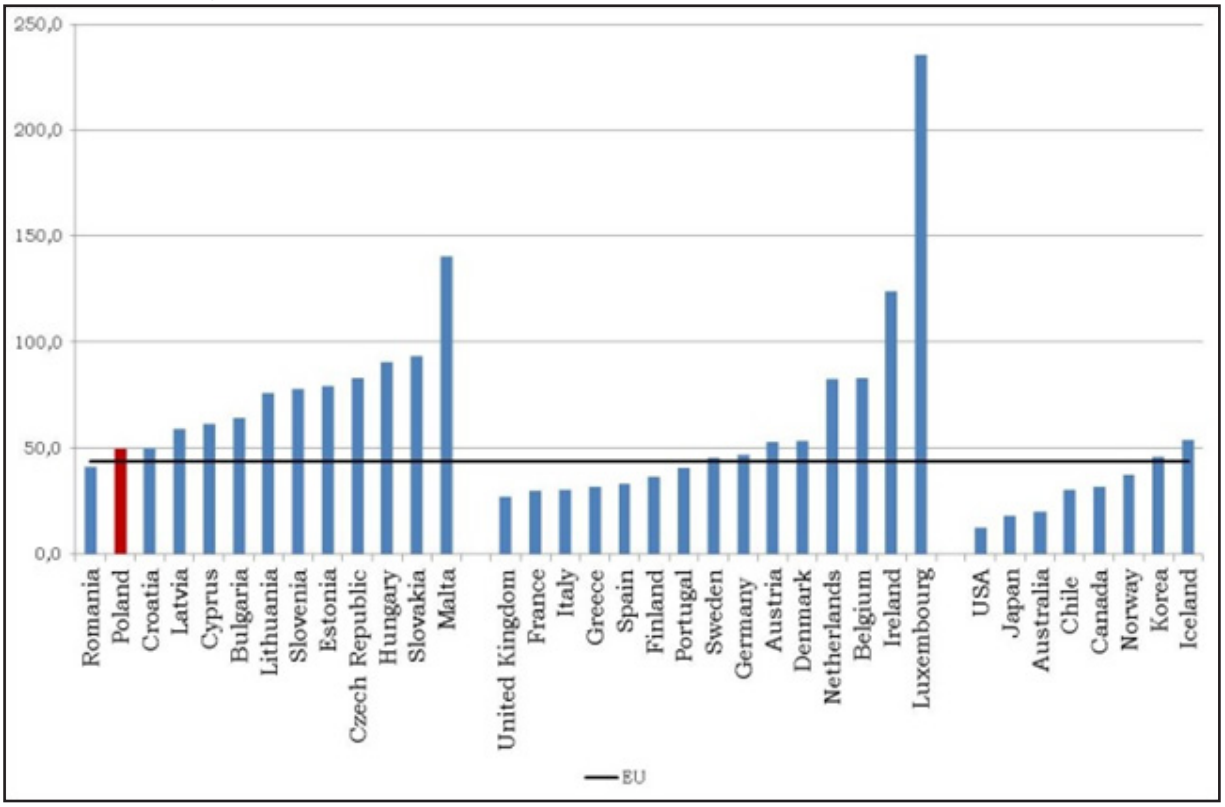
4. External risks to Poland's economic growth

Poland is very open economy. Even though its exports to GDP ratio is not as high as in smaller economies such as Slovakia, Hungary or Estonia, it exceeds the EU average, which in turn is rarely achieved by countries from outside the EU (see Chart 6). Moreover, as already mentioned, FDI play more important role in Poland, and NMS in general, than in most other emerging economies. Before the GFC NMS were more important recipient of greenfield projects than the US (see Chart 7). Due to strong trade and financial linkages, business fluctuations in Poland are closely synchronized with global economy. Except for 2016 slowdown, all previous ones were preceded by external shocks.

Via trade, financial and business confidence channels Poland is very exposed to shocks in the EU. After several years of very weak growth there, it has accelerated in last two years (from 0.2% on average in 2008-2014 to 2.1%). Structural reforms introduced under pressure of the crisis, even though incomplete (Balcerowicz et al., 2013), lastly appear to pay off. They were implemented first and foremost by peripheral countries, such as Ireland, Portugal, Spain and, more recently, Italy and addressed some weaknesses of labor market, budget making process, government spending and corruption (see, e.g. OECD, 2017). However, growth has also accelerated in Germany, the economy that Poland is most interconnected with, via trade and FDI.

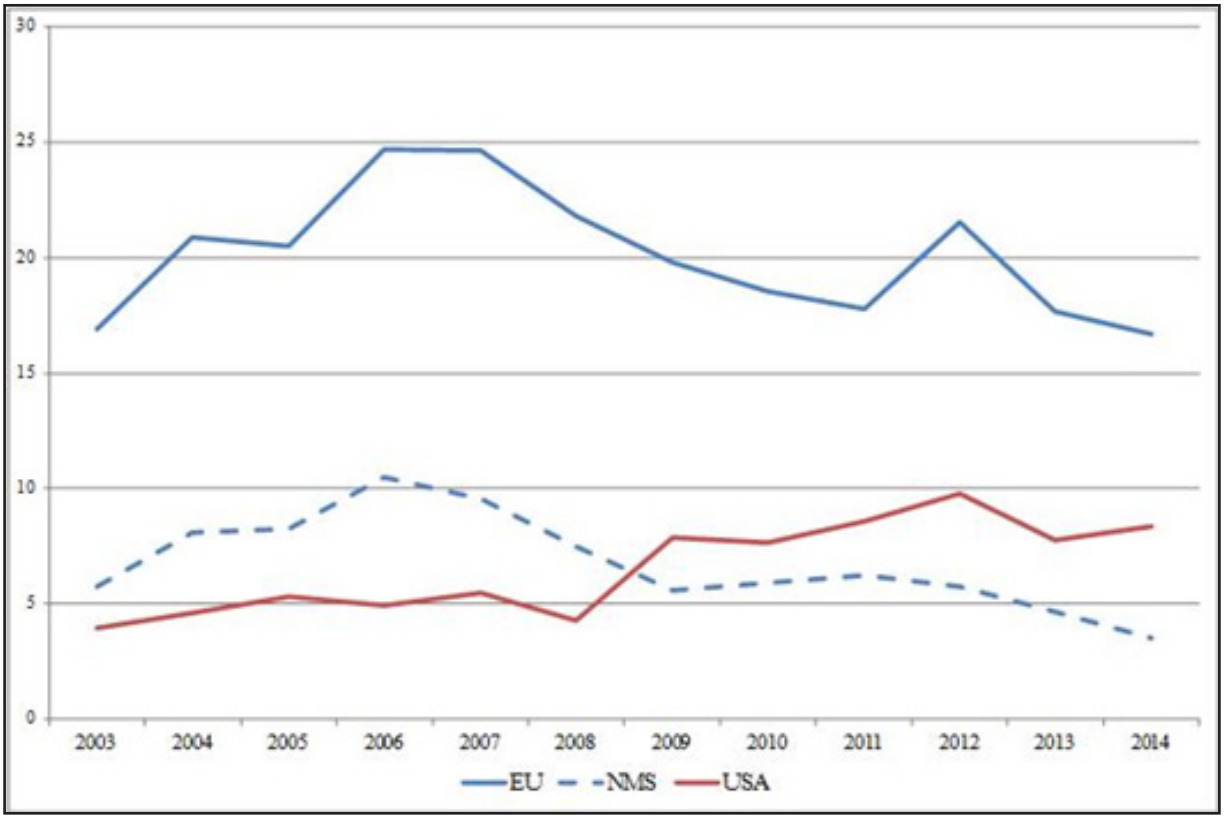
5 This was the largest number since 1918, i.e. resurgence of Poland; cf. http://barometrprawa.pl/

Chart 6. Exports of goods and services in the EU and selected other countries (% of GDP)



Source: Eurostat and World Bank.

Chart 7. Greenfield projects announced in the European Union, including the NMS, and in the United States in 2003-2014 (share in total value of greenfield projects in the world/%)

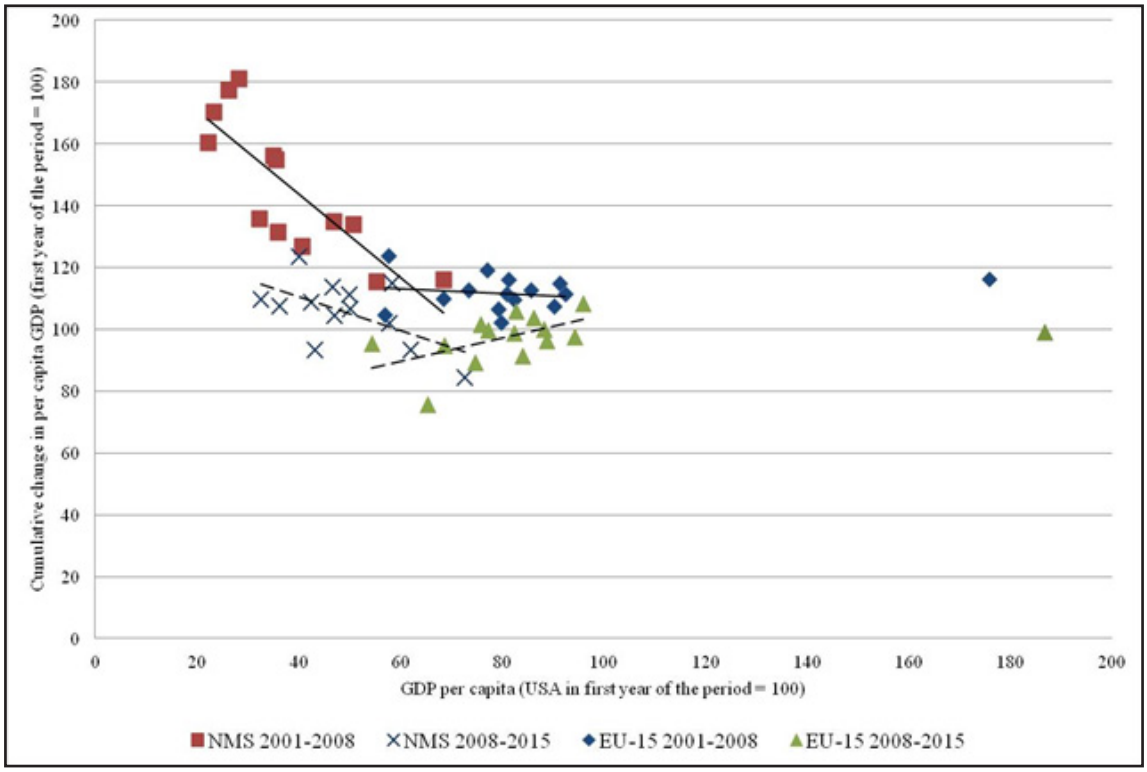


Source: UNCTAD.

That said, the growth in Europe can be weakened in the years to come, in particular, by Brexit. Brexit will mainly hurt the UK (see, e.g. Chadha, 2016), but due to strong trade ties across the EU, it is likely to harm – both directly and indirectly – other EU countries too.

Brexit also revealed that sustainability of the EU should not be taken for granted. Serious tensions within the EU will hardly disappear in a foreseeable future. Rather the opposite seems to be true. The cohesion of the EU may be weakened by two factors: a slowdown of convergence of the NMS with the West after the outbreak of the GFC, and a replacement of slow convergence in the old Europe by a divergence (see Chart 8).

Chart 8. The relationship between per capita GDP and the rate of its growth in the EU before and after the outbreak of GFC



Source: Ameco.

Post-GFC challenges and vulnerabilities have largely remained unsolved in the EU (see, e.g. Rzońca & Łaszek, 2016). Particularly, most EU countries are burdened with a huge sovereign debt. In the EU as a whole it increased from 58% of GDP in 2007 to 88% of GDP in 2014. In 2016 it still exceeded 86% of GDP. In some countries, banks are still dealing with a large stock of non-performing loans. In Italy, not to mention Greece, and four other countries (Cyprus, Ireland, Portugal and Slovenia) it accounts for more than 10% of loans (Onado, 2017). In the banks supervised by the ECB, in net terms (that is after subtracting the provisions), it is as large as the whole capital raised by these banks since 2011 and more than six times as large as their annual profits (Enria, 2016)[6]. This brings us to yet another problem with banks. Almost everywhere in the EU they are barely profitable. Their average return on equity amounts to about 3%. By comparison before the GFC deposit rate was higher than 3% in most EU countries. The market valuation at about half of banks' book value suggests that these problems will not disappear in foreseeable future (BIS, 2016). Still worse, some banks in Europe can be hit by possible shocks in emerging economies. French banks were involved in financing oil and gas projects all over the world, Spanish banks are exposed to Latin America, banks in the UK are exposed to China.

6 Quotation after Onado (2017).

Growth problems are spreading among emerging economies. The percentage of countries catching-up with the US has not been so low since 2000. And the percentage of economies in which growth was slowing for three consecutive years, has almost reached the level from the acute phase of the GFC. While the ability of emerging economies to repay their debt is falling, the stock of bonds they have to redeem will grow significantly by 2018 (WB, 2016).

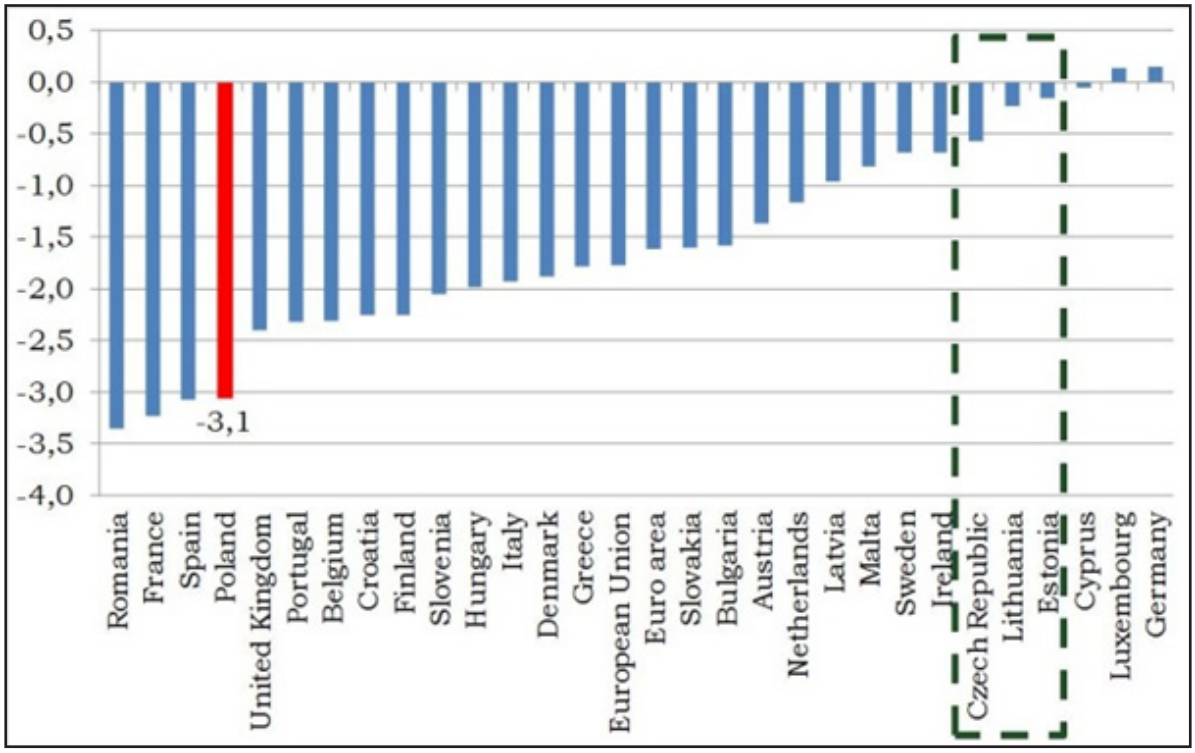
There is risk of hard lending of China, the world's second largest economy and thus large enough to trigger turmoil in other imbalanced markets. The ratio of private credit to GDP in China increased to the level that in Japan was followed by more than two decades of stagnation and in Spain by a banking and then fiscal crisis (WB, 2016). A source of concerns should be not only the stock of debt, but first and foremost the speed at which it was incurred. Fast growing debt is unlikely to be channeled to productive investment. While just after the outburst of the GFC corporate sector in China was less leveraged and more profitable than in other emerging economies, it is now more leveraged and less profitable than elsewhere (IMF, 2016a).

The US economy may fail to counterbalance possible shocks elsewhere. The recovery in the US has been sluggish by historical standards. It is the weakest post-war economic recovery. At the same time, if it does not end by 2019, it will be the longest one. There is no such a thing as a regular business cycle. But business fluctuations exist and thus risk of recession in the US is rising rather than falling. Hence, the US may even become a source of shocks. The risk of such developments is raised by policy uncertainty (for more on this, see, e.g. Kose at al., 2017), in particular related to trade policies.

Protectionism has been on a rise in the world since early 2000s (OECD, 2016). Weak growth in global economy encourages governments to introduce new barriers to trade, and less trade means less growth and more temptation to introduce ever new barriers to trade.

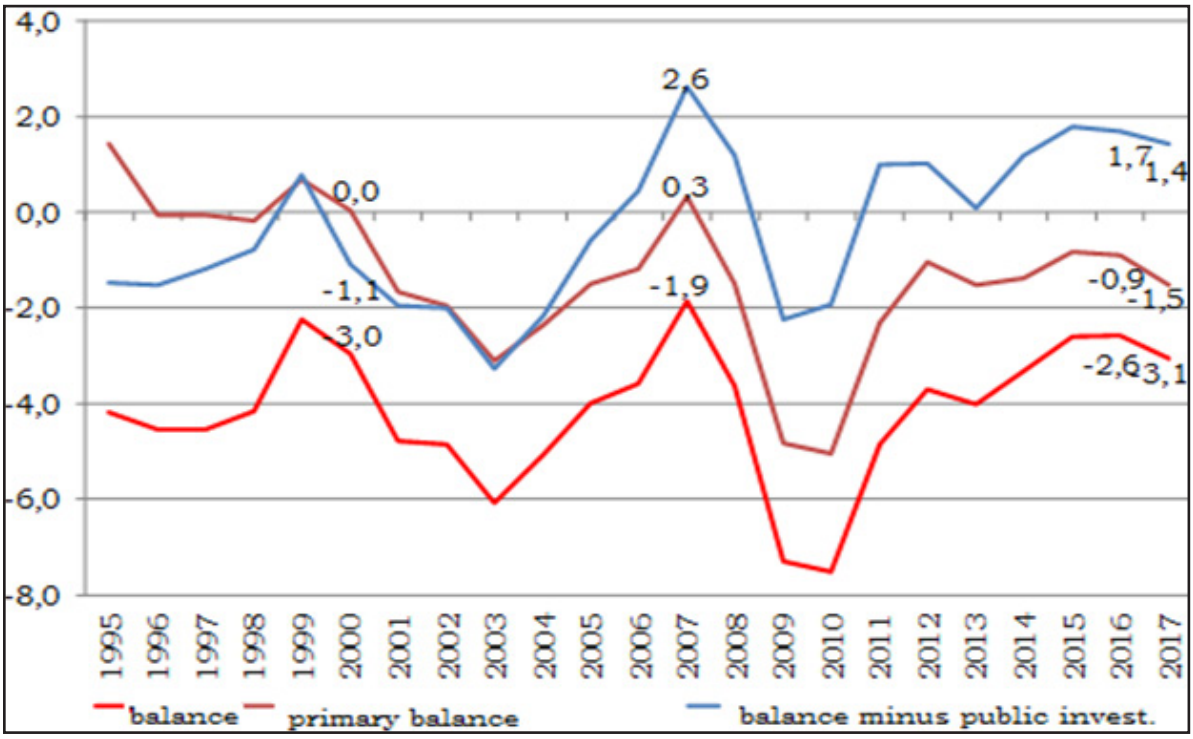
How resilient is Poland to these and other possible shocks in its external environment? It is probably less resilient than most NMS and then in the past (see Chart 9 and Chart 10). In particular, while public finances are almost balanced in Estonia, Lithuania and the Czech Republic, general government deficit in Poland is forecasted to be among the largest in the EU in the years to come. It is also larger than before the previous slowdowns in spite of the significant fall in interest payments. However, the period of extremely easy many in the world will end at some point. In the United States rate hikes, even if very limited and gradual, are on the way and previous hikes tended to produce instability in imbalanced economies. Poland does not have large imbalances other than unhealthy public finances. There is no current account deficit, no output gap, no wage pressure (yet), no credit boom. However, the fiscal adjustment is urgent all the more, that Poland has a sovereign debt ceiling, set by the constitutional law at 60% of GDP and the debt is not far from that ceiling. If it does not stop growing very soon, then government will lose any room for manoeuvre in the case of slowdown. It would have to cut public spending and increase taxes irrespective of economic situation. The experience of peripheral countries of Euro area should be a warning for Poland on how costly procrastination of an unavoidable adjustment could be (see Chart 11).

Chart 9. General government balance in the EU countries in 2017 (% of GDP)



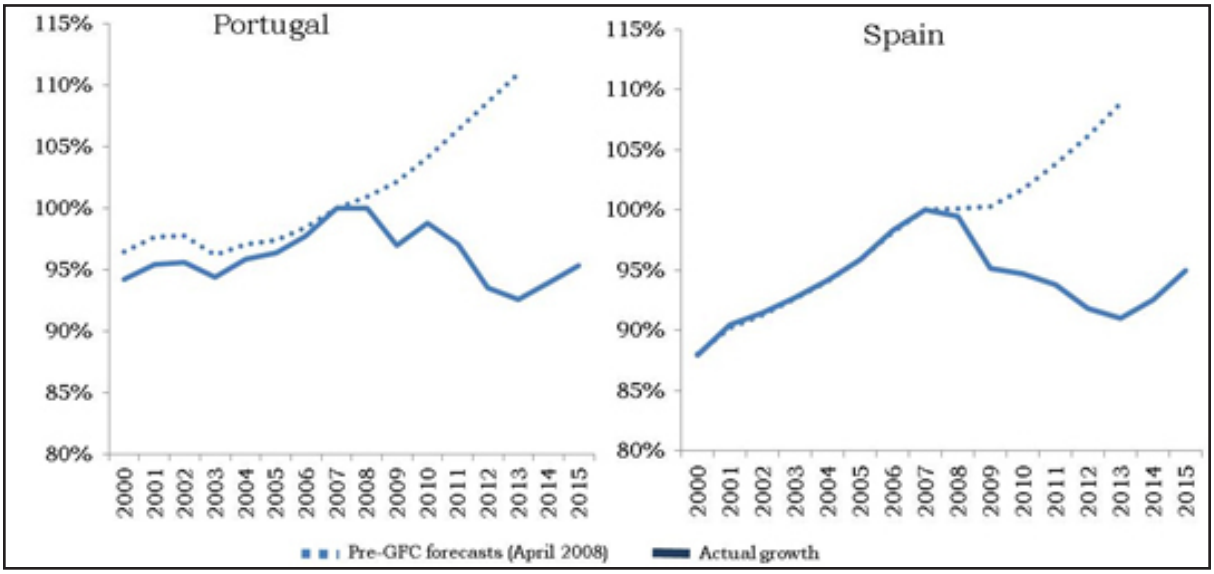
Source: Ameco.

Chart 10. Fiscal balance, primary balance and balance without public investment in Poland (% of GDP)



Source: Ameco.

Chart 11. Per capita GDP in Portugal and Spain. Pre-GFC forecasts vs. actual growth (2007=100%)



Source: IMF.

5. Concluding remarks

Poland has achieved a remarkable success in a real convergence "vis a vis" the West. The main reasons for that were early and massive improvements in its institutional and macroeconomic frameworks. However, past success does not guarantee the future ones. Poland is threatened by a serious economic slowdown, and possibly by acute fiscal problem. In order to avoid this bad scenario, Poland should launch a new wave of institutional reforms, which would help to prevent the decline in employment, increase the investment, and strengthen the growth of productivity.

Unfortunately, the government which is in power since late 2015 has blocked all the necessary reforms, and has introduced dangerous anti-reforms, e.g. the reduction of the retainment age, increasing fiscal spending, politicization of the economy.

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The economies of the Baltic States

Alari Purju

1. Introduction

The three Baltic States, namely Estonia, Latvia and Lithuania, are the small countries on the Eastern coast of the Baltic Sea. They are members of the EU from 2004. Their EU-related integration went together with deeper regional integration between the states of the Baltic Sea Region countries (BSR). That is partly a reason why the recent development of these countries is examined in comparison with the other countries of the region. There is also an institutional arrangement supporting this approach, the EU Strategy for the Baltic Sea Region (EUBSR)[1] as the macro regional strategy (European Commission, 2014).

The EU´s first macro-regional strategy, the EU Strategy for the Baltic Sea Region (EUSBSR) was introduced in 2009. As the EU Commission underlines, macro-regional strategies represent a new opportunity for comprehensive development of a larger region, addressing common challenges and potentials. The EUSBSR is based on very intensive political, social, business and other types of contacts that already had been activated in the 1990s. Concerning more specifically the field of economy and business, close business contacts, cooperation, and the integration of regional economies are the most important tasks. Rather than following a general political agenda, regional changes followed the particular interests of economic agents. Economic agents of the region were brought to European and global markets and integrated into supply chains of multinational companies (MNC). MNCs not only operated in the global sphere, but also created regionalized patterns of economic activity (Rugman, 2005). In the BSR, this has been demonstrated initially through development of the banking sector and on also on manufacturing, wholesale and retile trade. Afterwards the technical infrastructure projects connecting the BSR countries electricity and natural gas grid, transport networks, which construction is supported by the EU Structural Funds, started to be important.[2]

This pattern of integration of the region very much reflected developments in the BSR. The economic and financial crisis of 2008, political developments in Russia and later in the Middle East, as well as the migration crisis which peaked in 2015, changed the atmosphere of relationships between the countries of the BSR. These countries started to concentrate more on national issues, making regional collaboration less of a priority, as was mentioned in the report covering recent developments in the region (Ketels & Pedersen, 2015).

The economic cooperation still deepened between the Baltic States and the Nordic countries. The integration of these different income level countries has paved also the way to convergence of living standards and the competitiveness of the region in the global economy. The article examines the economic growth patterns and compares the living standards in the Baltic States with the other states of the BSR. The foreign trade and foreign direct investments dynamics and role is analysed and the recent labour market developments are described. The article ends with some conclusions on development of the Baltic States as members of the BSR.

1 EU member-states involved in EUSBSR are Sweden, Denmark, Estonia, Finland, Germany, Latvia, Lithuania and Poland. The strategy is welcoming cooperation also with EU neighbouring countries Russia, Iceland, Norway and Belarus (EUSBSR, 2017).

2 The Rail Baltic Project connecting the Baltic States with Poland and Germany is one example. Plan is to start operation of the Rail Baltic in 2025.

2. Economic growth and living standards

The GDP of the three Baltic countries is equal to approximately 40% of the GDP of Finland, the smallest among the four Nordic countries bordering the Baltic Sea. The administrative regions of Russia on the coast of the Baltic Sea, represented by St. Petersburg as well as the Leningrad region and the Kaliningrad region, produced slightly more than the three Baltic States together, the GDP being respectively 88 and 80 billion euro in 2015. The figures in Table 1 gives an overview of the size and living standards of the different BSR countries.

GDP per capita figures describe very generally the level of economic development and living standards in their respective country. There is a very clear difference between Germany and the Nordic countries, on the one hand, and the Baltic States, Poland and Russia, on the other hand. At current prices, the difference was more than three times in 2015. The purchasing power standard (PPS) estimate also takes into account differences in prices, as countries with lower income per capita tend to have lower prices. Especially large is the difference of prices in sectors that are closed for international competition, such as transport and communal services, housing, electricity, and heat supply. In these sectors, price level is determined more by domestic income level. The difference of closed sector prices in countries with different income levels could be 2–2.5 times or even more. The PPS income level figures take into account that for a lower income in poorer countries, it is possible to purchase more services than in a higher income country and the nominal income figures are adjusted to this difference in prices.

Table 1. Population and GDP of BSR countries, 2015

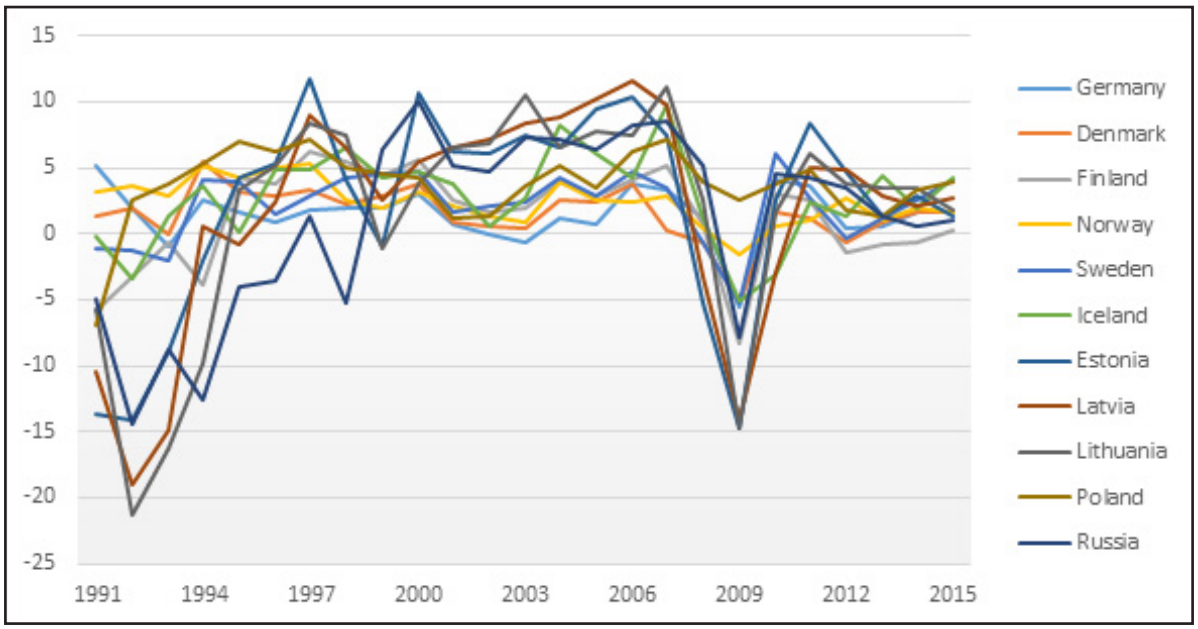
Country	Population, in millions, 01.01.2015	GDP, in billions, at current prices, EUR, 2015	GDP per capita at current prices, EUR, 2015	GDP per capita on PPS basis, EUR, 2015
EU 28	508.3	14,663	28,700	28,700
Germany	81.2	3,025	37,100	35,900
Denmark	5.7	266	46,800	35,600
Sweden	9.8	429	45,400	35,300
Finland	5.5	207	37,800	31,000
Norway	5.2	350	67,400	46,800
Iceland	0.3	15	45,400	35,600
Estonia	1.3	20	15,600	21,200
Latvia	2.0	24	12,300	18,400
Lithuania	2.9	37	12,800	21,200
Poland	38.0	427	11,100	19,800
Russia	146.3	1,194	8,140	19,260
St. Petersburg	5.2	63		
Leningrad region	1.8	18		
Kaliningrad region	1.0	7		
Karelia Republic	0.6	4		
Murmansk region	0.8	8		
Novgorod region	0.6	4		
Pskov region	0.6	3		

Sources: Eurostat 2016; Rosstat 2016; World Bank 2016; European Commission 2016.

Figure 1 describes the growth patterns in the Baltic Sea region countries between 1991 and 2015. It is possible to see the different magnitudes of fluctuations in different groups of countries. The highest annual GDP growth figures were achieved during this period by Latvia (12.2% in 2006), Estonia (10.6% in 2006), and Lithuania

(10.2% in 2003). Among the Nordic countries, the highest annual GDP growth rates belonged to Sweden after the recovery in 2010 (5.7%) and to Finland during the economic boom (5.3% in 2006).

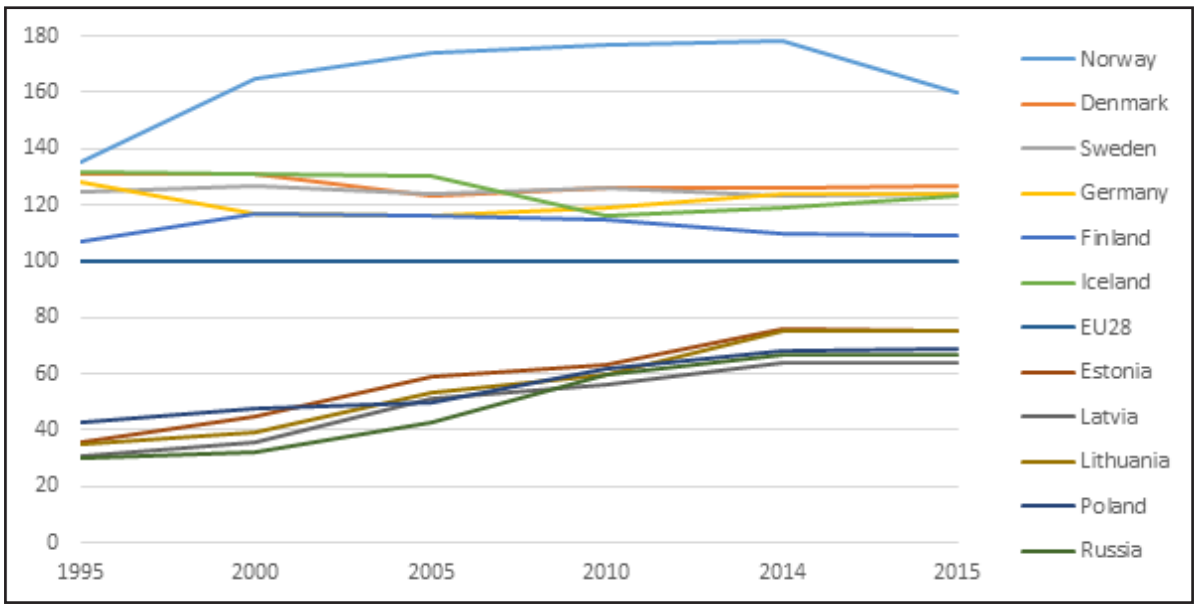
Figure 1. GDP growth in BSR countries, 1991–2015, %



Sources: Eurostat 2016; World Bank 2016.

The average annual GDP growth rate during the period of 2005–2015 was 0.9% for the whole EU28. For Germany, the respective annual average growth rate was 1.4%, for the Nordic States between 0.3% (Denmark) and 1.8% (Sweden and Iceland). For the Baltic States, the respective figure was 2.4% for Lithuania, 1.6% for Latvia and 1.5 for Estonia. Poland´s average annual growth for this period was 3.9%. That means that annually the Baltic States grew 0.6-1.5% and Poland 3% faster than the EU in average during a 10-year period that includes a deep economic decline lasting two years. These different growth patterns are also reflected in relative changes of GDP per capita, described in Figure 2.

Figure 2. GDP per capita in BSR countries, 1995–2015, PPS (EU28 = 100%)



Sources: Eurostat 2016, Rosstat 2016.

Figure 2 demonstrates that the Nordic countries were all above the EU28 average.[3] The trend has declined a bit, meaning that their GDP per capita has moved nearer the EU28 average. Norway is an exception, as its GDP per capita increased very rapidly in comparison with the EU28 average, primarily due to high income from its oil and gas industry. Iceland had relatively high GDP per capita figures up to 2005 but later the economic and financial crisis devalued its income level. The Baltic States, Poland, and Russia converged to the EU28 average, the fastest convergence being for Estonia, which started from the level of 36% of the EU28 average and ending on the level of 74% of that average in 2015.

The growth pattern of the Nordic States could be interesting for the Baltic States because these three countries are much smaller than the Nordic countries. With their small domestic markets, their growth has to be based on foreign markets and integration into a wider economic area. The economic crisis years from 2008 onward were especially severe for the Baltic States, but they managed to recover without a major debt burden, which gave some authors reason to forecast a bright future for them (Åslund, 2010).

3. Foreign trade

Small countries are supposed to especially rely on export because the small size of their domestic market does not allow companies to realize meaningful economies of scale in producing a large amount of goods. Another aspect of specialization is that other goods and services which are not produced in a particular country should be imported from countries which are more effective in producing those goods or services. There are also other explanations for trade. Modern trade is more widely based on internationalization of production factors. Capital is an especially mobile factor. The concept of intra-industry trade means that countries export and import similar goods. This kind of trade is based on economies of scale and often takes place inside a large multinational company, which has departments or subsidiaries in different countries. Some operations are subcontracted to business units in other countries, such as, labour intensive operations, which are sent to places with lower labour costs. This type of connection is defined as vertical intra-industry trade (Krugman, 1991).

The practice of Nordic companies moving production of components or semi-final products to Baltic States where labour costs are several times lower compared to the homeland of those companies is one example. Ericsson AB having a large production plant in Tallinn is one example of this business strategy. Another example is the movement of manufacturing companies of big producer or their subsidiaries, which make consumer electronics, car components and other products, from Nordic States to the Baltic States. In Europe, a very important example of similar integration consisting much higher volumes of traded components and products has been taking place between Germany and Poland.

3.1 Foreign trade: geography

The economies of the BSR are relatively open, which is reflected in the proportion of foreign trade to GDP. There is a general economic rule that smaller economies are relatively more open and dependent on foreign trade that larger economies. This is because small countries have limited domestic markets and even their middle sized companies have to export to achieve economies of scale. Another reason for relatively larger volumes of foreign trade of small countries is the necessity of specializing in the production of a limited number of

3 The number of EU members has been very different during the examined period starting from 12 in the beginning of 1990s up to 28 in 2016. The EU28 average for the whole period is a theoretical average calculated using the GDP per capita figures of these 28 countries for the period 1995–2015.

products to be effective. The other side of this phenomenon is that a relatively wide scale of products have to be imported. Large countries have big enough domestic markets to make production efficient and do not need to export and import in relative terms as much as small countries.

This small country phenomenon is reflected quite clearly in Nordic countries, which have specialized in particular sectors. Large ICT and mechanical engineering companies in Finland like Nokia, Wärtsilä, and KONE, and pulp and paper companies UPM-Kymmene and Stora Enso, and electronical and mechanical engineering companies of Sweden like Ericsson AB, SKF, and Assa Abloy have to be international to be successful (Jonung et al., 2009). A fairly large proportion of production activities and the markets of these companies are also linked to the BSR. Some of these companies as Ericsson AB, UPM-Kymmene and Stora Enso have production sites also in the Baltic State.

Nevertheless, the industrial base of the Baltic States is weaker than that of the Nordic States. The Baltic States all have trade deficits and they must import a high proportion of fuels and other mineral resources, as well as capital goods. Demand for consumer goods have been a source of foreign trade deficit.

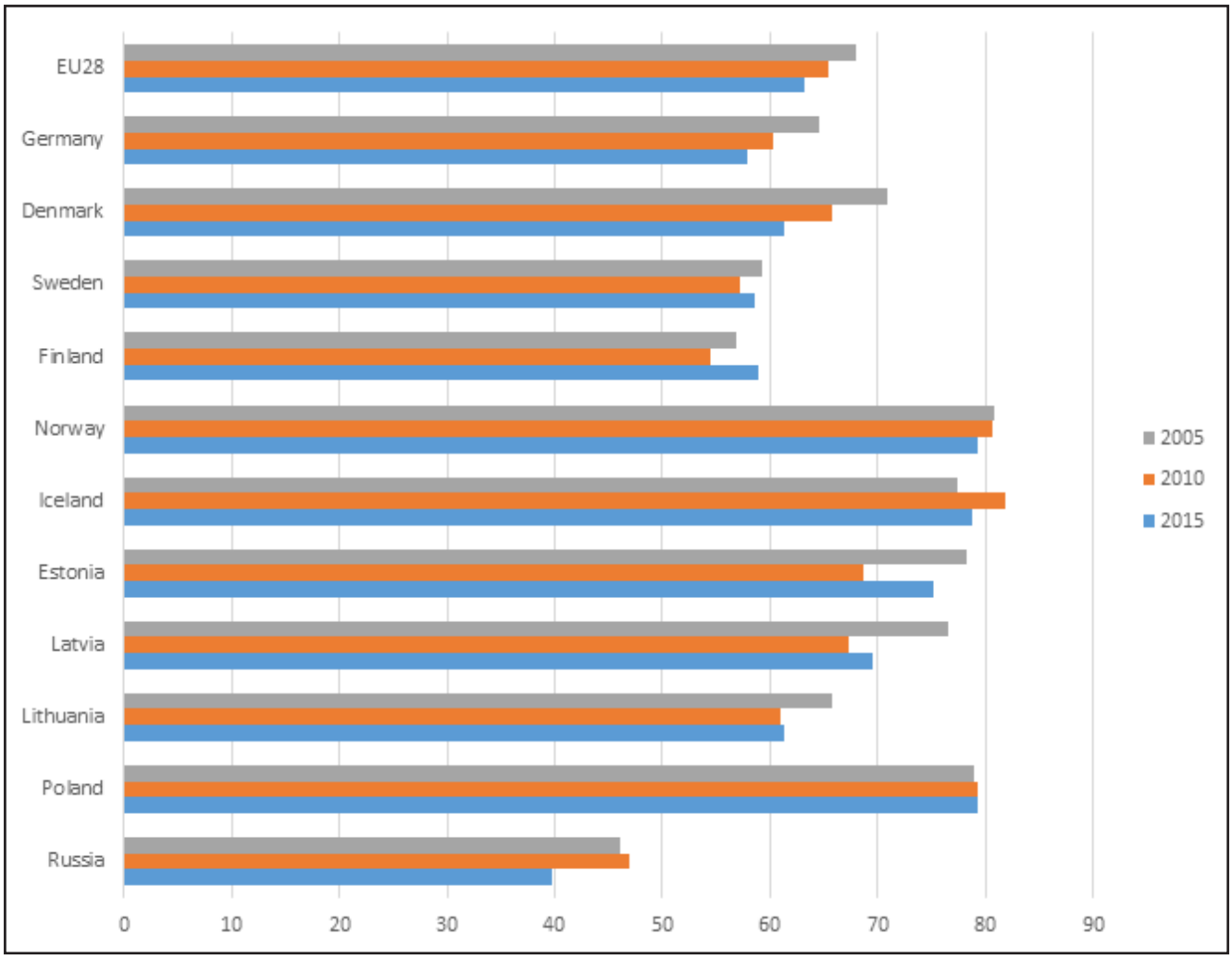
Table 2. Exports, imports, trade balance, and the share of EU in exports, 2005 and 2015

Country	2005, billion EUR			2015, billion EUR			Foreign trade surplus or deficit to the value of exports, 2015, %	Share of exports to the GDP, 2015, %
	Exports	Imports	Trade balance	Exports	Imports	Trade balance		
Germany	780.0	624.5	155.5	1198.3	946.5	251.8	21.0	39.6
Denmark	68.4	60.7	7.7	85.9	77.0	8.9	10.4	32.3
Sweden	105.3	89.8	15.5	126.3	124.5	1.8	1.4	28.4
Finland	52.6	47.2	5.4	53.9	54.2	–0.3	–0.6	26.0
Norway	83.6	44.73	38.9	107.5	67.2	40.3	37.5	30.7
Iceland	2.5	4.0	–1.5	4.3	4.6	–0.3	–7.0	29.2
Estonia	6.2	8.2	–2.0	11.6	13.1	–1.5	–12.9	56.8
Latvia	4.1	7.0	–2.8	10.9	12.9	–2.0	–18.3	44.6
Lithuania	9.5	12.5	3.0	23.0	25.4	–2.4	–10.4	61.9
Poland	71.9	81.7	9.8	178.7	175.0	3.7	2.1	41.8
Russia	196.0	100.8	95.2	306.8	174.9	131.9	43	25.7

Source: Eurostat 2016; Rosstat 2016.

In the current study, openness is measured by the proportion of exports to the GDP. This ratio is largest for the small Baltic States, where exports proportion to GDP was between 45–62%. In the Nordic countries, that ratio is between 26% and 33% of GDP. Even Germany and Poland, which are relatively large countries of the region, have this ratio around 40% of GDP. Russia had this ratio on the level of 26%. One important aspect of EU level integration is reflected in proportion of intra-EU trade to the total foreign trade. Figure 3 compares levels of that indicator between 2000 and 2015.

Figure 3. Share of exports to the EU28 (in the case of EU28 intra-EU exports), 2005, 2010 and 2015, % of total exports



Sources: Eurostat 2016; Rosstat 2016.

The share of exports to other members of EU28 (intra-EU exports) was especially high in the Baltic states and Poland. EFTA countries Norway and Iceland also exported 70–80% of their exports to the EU28. For the other Nordic States, the share of exports to the EU28 was between 60% and 70%. An interesting phenomenon is the decline of the proportion of intra-EU trade for most EU28 members from 2005 to 2015 (an exception is Poland where the share of the exports to EU28 barely changed, and remained close to 80%). In the case of the Baltic States and Finland, one reason for this was an increase of exports to Russia and other CIS countries before the crisis in EU-Russia relations due to Russia's military involvement in Crimea and Eastern Ukraine. That is reflected in decline of the exports to the EU28 up to 2010. The increase of exports to EU28 is also mainly caused by decrease of exports to Russia. Another reason was the increasing importance of foreign trade related to globalized supply chains and intra-industry pattern of trade. That means that global companies moved production of components and materials out from Europe to Asian countries with lower labour costs.

3.2 Foreign trade within the BSR

An interesting question is how important the BSR actually is for the countries of this region. The figures in Table 3 demonstrate that the share of trade with other countries in the region is higher for the Baltic states, especially for Estonia (73% of Estonia's exports went to other Baltic Sea region states in 2014). Among the Nordic States, Iceland had the lowest proportion of exports to the BSR (19%). Finland was the Nordic country

with the highest share of exports to the BSR (44%). Poland exported 41% of its outgoing products to this region, but more than half of this went to Germany, which accounted for 27% of Poland's total exports in 2014. In the case of Germany, only 13% of its exports went to the BSR. Poland was the destination country for 4% of total German exports and Russia for 3%. Russia exported 17% of its total exports into the Baltic Sea region and Germany was the destination country for 8% of Russia's total exports in 2014.

Table 3. Exports of BSR countries to other countries of the region, 2014

Country	GDP, billion EUR	Exports, billion EUR	Exports/GDP,%	Exports to the Baltic Sea region, %				
				Germany	Nordic countries	Baltic States and Poland	Russia	Exports to BSR, % of total exports
Germany	2,915.6	1,134.8	39.0	–	5	5	3	13
Denmark	257.4	83.6	33	18	21	4	1	26
Sweden	430.2	123.7	29	10	24	5	2	41
Finland	205.2	55.9	27	12	16	8	8	44
Norway	377.5	107.5	28	17	11	2	1	31
Iceland	12.9	3.8	29	6	7	2	0	15
Estonia	19.5	12.1	61	5	40	18	10	73
Latvia	24.1	10.2	43	7	14	37	10	68
Lithuania	36.3	24.4	68	7	9	22	21	59
Poland	413.1	163	39	27	7	3	4	41
Russia	1,528	373.5	24	8	4	5	–	17

Sources: Eurostat 2016; Rosstat 2016.

These figures demonstrate that the small Baltic States are highly dependent on foreign trade with BSR countries. This closeness is caused by foreign direct investments (FDI) from the area (for example, approximately two-thirds of FDI into Estonia came from Sweden and Finland) and extensive integration of companies into Nordic industrial clusters (especially in ICT and wood processing, but also banking and financial services). The Baltic States and Finland participated in transit trade from Russia to Western Europe (especially oil products) and from Western Europe to Russia (industrial products like cars).

3.3 Foreign trade: commodity pattern

The United Nations' Standard International Trade Classification (SITC) is used to describe the commodity pattern of foreign trade of goods. Eurostat statistics on foreign trade records intra-EU and external EU trade separately. In the current analysis, the trade is summarized by using Eurostat data.

The year 2005 is important in foreign trade statistics of the Baltic States for the reason that these countries joined the EU in May 2004, so 2005 is the first year fully recording their trade as EU member states. 2005–2015 is thus a good mirror to reflect their trade development inside the EU. There has been a rapid increase of value of foreign trade but no deep structural changes on partner countries and product level.

The three Baltic States had very high growth of exports of goods in value terms from 2005 to 2015. The growth rate was close to 1.9 times in Estonia and around 2.5 times in Latvia, Lithuania. Estonia with 75% had the largest share of manufactured industrial products (SITC 5-9) in total exports, Latvia and Lithuania had this

share around a 60% of their exports in 2015. Latvia and Lithuania had relatively high shares of food, drinks, and tobacco in their exports, respectively 17.4% and 15.7% in 2015. A particular feature is oil importation and the export of manufactured oil products by Lithuania, contributing respectively 16% of total exports and close to a quarter of total imports in 2015. In Latvia's exports, raw materials (SITC 2 and 4, first of all timber and wood products) created around one sixth of the total exports. The main structural change during the period of 2005 to 2015 has for the part of Latvia been an increase of exports of food, drinks, and tobacco (SITC 0–2) and a relative decrease of exports of raw materials (timber and products thereof) and minerals (the dominant part of these exports being re-export of Russian oil and oil products). In Lithuania exports of food, drinks, and tobacco also increased, while the share of exports of minerals fell. In all three Baltic States, the share of chemicals (SITC 5) increased in exports.

Table 4. Export commodity, 2005 and 2015

Country	Exports 2005		Exports 2015		Increase of exports, times
	billion EUR	%	billion EUR	%	
Estonia					
Total	6.2	100.0	11.6	100.0	1.871
SITC 0+1 Food, drinks, tobacco	0.3	4.8	1.0	8.6	1.792
SITC 2+4 Raw materials	0.6	9.6	1.0	8.6	1.792
SITC 3 Mineral fuels	0.5	8.2	1.1	9.5	2.200
SITC 5 Chemicals	0.3	4.8	0.6	5.2	1.083
SITC 7 Machinery, transport equipment	2.3	37.1	4.0	34.5	1.739
SITC 6+8+9 Other manufactured goods	2.2	35.5	3.9	33.6	1.773
Latvia					
Total	4.1	100.0	10.9	100.0	2.658
SITC 0+1 Food, drinks, tobacco	0.4	9.8	1.9	17.4	4.750
SITC 2+4 Raw materials	0.9	21.9	1.6	14.7	1.777
SITC 3 Mineral fuels	0.4	9.8	0.7	6.4	1.750
SITC 5 Chemicals	0.2	4.9	0.9	8.3	4.500
SITC 7 Machinery, transport equipment	0.6	14.6	2.4	22.0	4.000
SITC 6+8+9 Other manufactured goods	1.6	39.0	3.4	31.2	2.125
Lithuania					
Total	9.5	100.	23.0	100.0	2.421
SITC 0+1 Food, drinks, tobacco	1.1	11.5	3.6	15.7	3.273
SITC 2+4 Raw materials	0.5	5.3	1.2	5.2	2.400
SITC 3 Mineral fuels	2.6	27.4	3.8	16.5	1.462
SITC 5 Chemicals	0.7	7.4	3.5	15.2	5.000
SITC 7 Machinery, transport equipment	2.0	21.0	4.2	18.3	2.100
SITC 6+8+9 Other manufactured goods	2.6	27.4	6.7	29.1	2.578

Source: Eurostat 2016.

4. Foreign direct investment

FDI can be a major force of economic integration, bringing economic activities in different countries together under the auspices of a multinational company (MNC). It generates intensive exchange between business units in different countries, such as trade managerial and technical knowledge transfers and financial investments. FDI also has an impact on a host country's economy through different spillover effects. For example, foreign companies can subcontract through local companies, providing not only demand for their products but also supporting distribution of technical knowledge and business skills.

FDI and foreign trade can be substitutive or complementary. If trade is obstructed by formal or informal barriers, FDI can be a substitute for trade by facilitating physical and human capital. FDI can act as a complement to foreign trade if it is used to develop industry, which in addition to selling on the local market, can also be exported. FDI and foreign trade can be interrelated in different ways. The inflow of FDI into a host country can, in the short run, increase imports of capital goods, which can be used for producing goods for export. Thus, in the short run, FDI can create additional imports and in the medium and long run, if capital is properly used, exports as well.

4.1 Impact of foreign direct investments in the Baltic States

The economic meaning of FDI is different for high-income developed countries and middle-income level transition or developing countries. High income countries, which in the Baltic Sea region are Germany and the Nordic countries, are capital abundant and FDI into these countries is very much related to international specialization and internalizing certain activities into big international companies. Outward FDI has generally been greater than inward FDI in the Nordic States, meaning there is a net outflow of FDI based on the savings of these countries. The Baltic States and Poland received much more FDI than was invested outward. Especially in Estonia, a big part of outward FDI into the other Baltic States was really resources of Swedish banks moving out through subsidiaries in Estonia. Particularly important has been FDI from Nordic States into the Baltic States, which has played an important role in the integration of these economies.

A very important aspect for foreign investors has been the possible expansion to the markets of other Baltic States. Investments in the Estonian financial sector remain a large proportion of total FDI, and further investment opportunities in this sector have also played an important role. Similar developments have occurred in insurance and real estate.

A significant factor in generating new FDI is the extent of networking between existing firms in the Baltic States. Such networking includes the expansion of existing foreign-owned enterprises through initiating new subcontracting orders to domestic firms, as well as more active cooperation between foreign-owned firms themselves. There are also a relatively large number of companies in the service sector from Finland and Sweden which have moved to the Baltic States together with their clients in Nordic countries. One example is Finland's TietoEnator, which provides banks with IT software for accounting and other banking operations. Networking is also important for FDI-based companies bringing together foreign capital and local research and development (R&D).

To ensure the growth of exports and the entire economy despite increasing production costs, Baltic economies need further changes in structure. Domestic resources have not been sufficient for this kind of change in structure and the need for further foreign investment has been one of the main pillars of integration with the EU. In order to guarantee enough FDI to support changes in structure, incentives are needed. Accession into the EU economic area has been one of those incentives. At the same time, the FDI flows have been sensitive to economic cycle globally (Blanchard, 2017). The same impact could be seen also in the Baltic States where the net inflows of FDI decreased during the 2008 economic and financial crises.

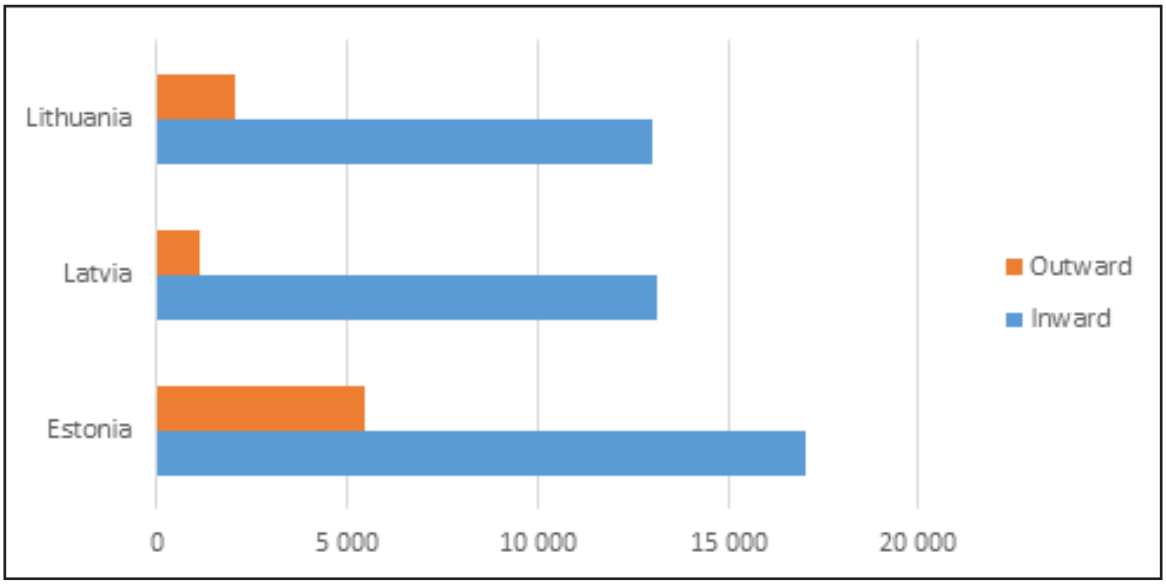
Figure 4. Net FDI inflows in the Baltic States, million EUR, 2001–2015

Source: UNCTAD 2017.

Figure 4 shows the pattern of net FDI annual flows in the Baltic States, demonstrating a rapid increase, especially inflows starting from the acceptance of EU membership of these countries and up to the economic crisis. 2009 witnessed a big drop of FDI, especially in Latvia and Lithuania. There was a big outburst of outflow from Estonia in 2009 reflecting an attempt of Nordic banks to move their resources from Estonia due to increased financial risk.

Figure 5 describes the inward and outward stock of FDI, which is the accumulated total sum of respective annual capital flows. The Baltic States have been net receivers of FDI, which supported investments and restructuring of the economy in these countries.

Figure 5. Inward and outward FDI stock of the Baltic States, end of 2015, billion EUR



Source: UNCTAD 2017.

The numbers in Table 5 describe the role of capital inflows from other countries in the creation of capital stock of particular countries in the BSR. The figures on per cent of capital formation and absolute and relative figures of inward FDI are averages of 2011-2014.

The importance of FDI to supporting economic growth and the widening of the resource base for investments and GDP growth has been different among the BSR economies. The importance of GDP in cross fixed capital formation depends on the economic cycle and the general development level of the country. The countries that are narrowing the income level gap with wealthy countries, tend to grow fastest, and this growth is based on investment expressed by cross fixed capital formation in GDP.

Table 5. GDP of 2014, gross fixed capital formation and inward FDI, per year, average for 2011–2014

Country	GDP, billion EUR	Gross fixed capital formation as % of GDP	Inward FDI, billion EUR	FDI as % of GDP	FDI as % of gross fixed capital formation
Germany	2915.6	20.0	19.9	0.7	3.5
Denmark	257.4	18.8	2.8	1.1	5.9
Sweden	430.2	22.7	8.0	1.9	10.1
Finland	205.4	21.6	4.8	2.3	10.6
Norway	377.5	22.6	10.7	2.8	12.4
Iceland	12.9	16.1	0.55	4.3	12.8
Estonia	19.5	26.7	0.75	3.8	14.2
Latvia	24.1	23.3	0.75	3.1	13.3
Lithuania	36.3	18.3	0.55	1.5	8.2
Poland	413.1	19.8	7.3	1.8	9.1
Russia	1528.0	21.1	36.7	2.4	11.4

Sources: FDI related data UNCTAD 2017, other data Eurostat 2016.

Estonia and Latvia had the highest gross capital formation as a percentage of GDP, which is directly connected to their fast GDP growth levels and strong boom and bust cycle. As it is possible to see from Table 6, during 2011–2014, the role of FDI in total capital formation was more modest, although has remained higher in Estonia and Latvia than in the Nordic countries. Of the Nordic countries, Sweden is a globally small country with deep international commitment and large number of big international companies, which were the targets of FDI. Sweden has also been an important source of FDI, especially for the Baltic States. Russia had approximately the same relative size of FDI as the Nordic countries in gross fixed capital formation.

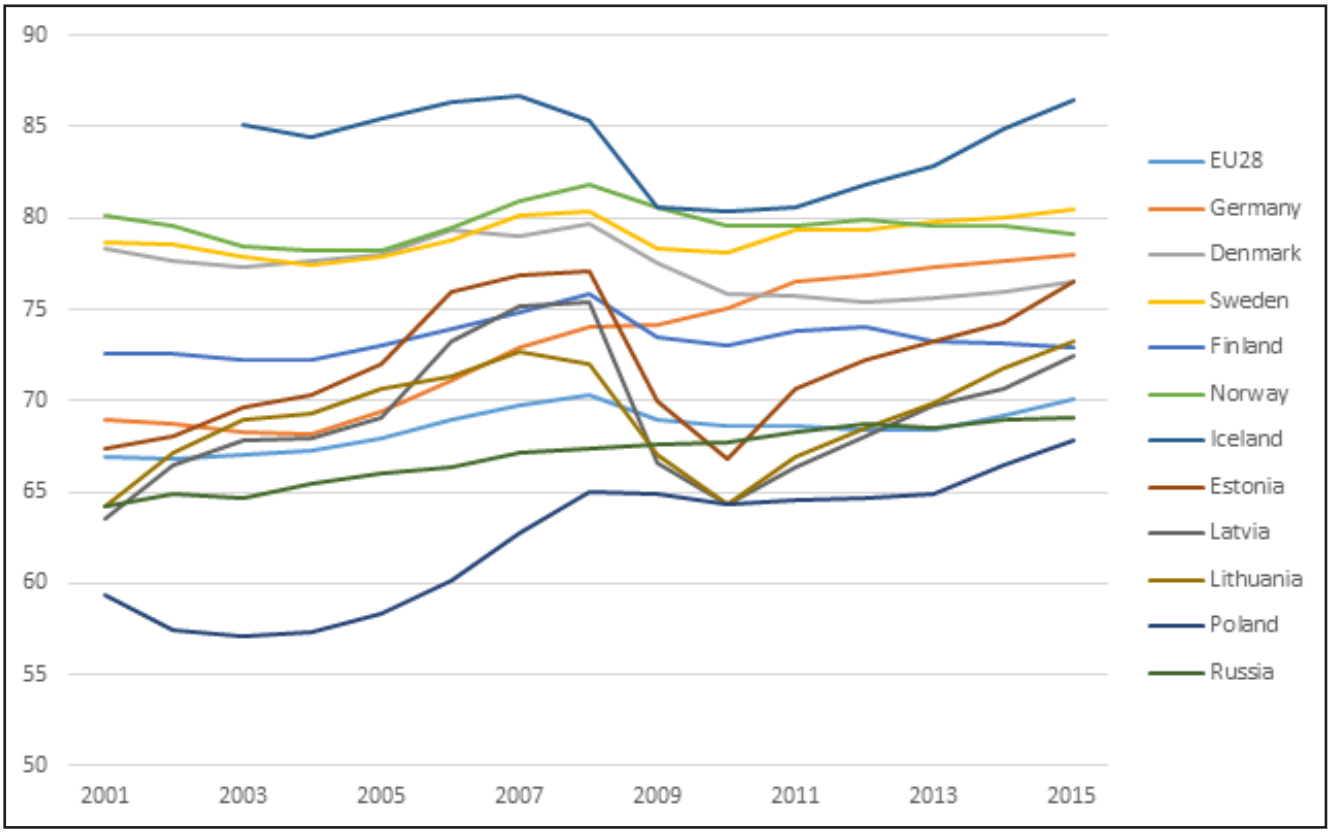
The capital accumulation pattern describes how this potential, which is critical for economic growth, was created. Capital accumulation also evidences the integration of different economies through capital flows. An important conclusion is that capital flows are moving not only from higher income countries to lower income countries, but higher income countries themselves receive capital from other countries. The Nordic countries' and Baltic States' flows of FDI were very much linked to the BSR and played an important role in creating production capacities and financial resources there.

5. Labour market development

5.1 Employment

People between the ages of 20 and 64 who are ready to work are classified as the labour force or active population.[4] The main reasons of people in this age group not belonging to the labour force are: actively studying in educational institutions, military service, pregnancy, maternity leave, chronic disease or injury, and retirement. The labour force is divided into employed and unemployed people. Table 6 shows that the EU28 employment rate was 70.5% in EU28, 75.9% for men and 64.3% for women. Figure 9 and the numbers in Table 6 demonstrate that the employment rates of all BSR states increased, though there was a short backstroke during the economic crisis in 2009 and 2010.

Figure 6. Employment rate of age group 20–64, Russia for age group 15-72, 2001–2015, % of active population



Source: Eurostat 2016.

The male employment rate than that of women in all countries in Table 6. The general level of employment has traditionally been high in the Nordic countries and Germany. In Denmark, Sweden, and Norway, over 70% of working age women are employed, and in Iceland, this rate has been over 80%. During last 10 years, this high employment level has also been achieved in Germany, the Baltic States and even in Russia. This is explained by increased possibilities for part-time work for young women with children, flexible scheduling of working hours, and hiring schemes supported by public funding. Active labour market policies oriented towards retraining and consultations about job possibilities have also had an important impact, especially in the Nordic countries.

4 The age group 20–64 is used for making the different figures for the EU comparable. This definition is not related to the official working ages in all countries. For Russia, the age groups 15–72 is used in national statistics.

Table 6. Employment, total, male and female age group 20–64, 2001 and 2015, Russia for age group 15-72, % of active population

Country	2001			2015		
	Total	Men	Women	Total	Men	Women
EU 28	66.9	76.0	57.9	70.1	75.9	64.3
Germany	68.9	76.2	61.5	78.0	82.3	73.6
Denmark	78.3	82.8	73.7	76.5	80.2	72.6
Sweden	78.7	80.9	76.4	80.5	82.5	78.3
Finland	72.6	75.7	69.5	72.9	73.9	71.8
Norway	80.1	84.0	76.2	79.1	81.3	76.7
Iceland	85.1	88.6	81.5	86.5	89.6	83.3
Estonia	67.4	71.5	63.5	76.5	80.5	72.6
Latvia	64.5	68.9	60.6	72.5	74.6	70.5
Lithuania	64.2	65.9	62.6	73.3	74.6	72.2
Poland	59.4	66.0	53.0	67.8	74.7	60.9
Russia	70.0	72.4	67.5	76.0	78.8	72.9

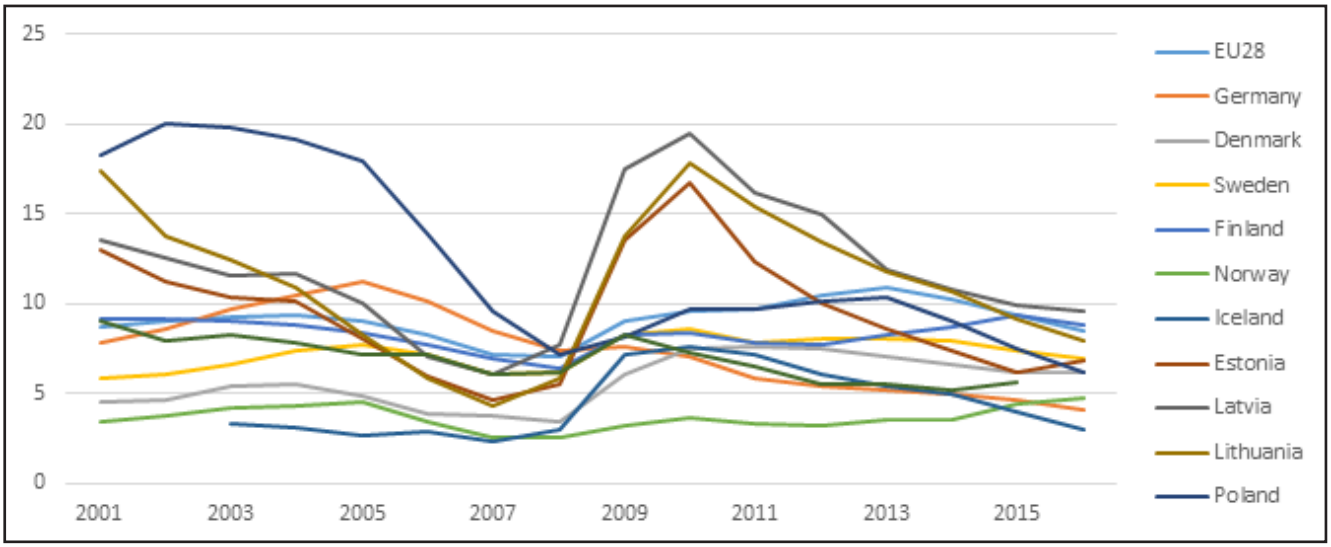
Note: Iceland's numbers are for 2003 and 2015.

Sources: Eurostat 2016, Rosstat 2016.

5.2 Unemployment

In the Baltic States, the unemployment rate was quite high in 1990s, came down during the years of fast economic growth in the 2000s, and increased substantially during the economic crisis that began in 2009. Latvia had the highest peak unemployment level, 19.5% in 2010. Later, unemployment decreased and was 6.2% in Estonia, 9.1% in Lithuania and 9.9% in Latvia in 2015. The EU28 average unemployment rate was 9.4% in 2015.

Figure 7. Unemployment, 1997–2016, %



Note: Iceland's data from 2003; for Russia, the last year is 2015.

Sources: Eurostat 2016; Rosstat 2016.

The big fluctuations in the Baltic States' labour markets have to do with the economic structure of these countries. Their substantially lower GDP per capita and income levels in comparison with the Nordic countries are caused by their position at the lowest end of the value chain in terms of the global economy's division

of labour. Countries with this type of employment tend to export low profitability or raw materials based on cheap labour. These industries can be deeply influenced by the economic cycle. In certain fields, the increase of exports or the recovery of domestic demand may result in an increase of jobs, but there are also industries where jobs have been reallocated to countries with cheaper labour (Eamets, Leping & Meriküll, 2009). Another reason for the high fluctuation of Baltic State employment figures is the Baltic States limited amount of resources for an active labour market policy and the poor setting of respective institutions. The OECD report, for example, suggests that the progressive implementation of activation strategies in a number of OECD countries might have had important implications for the unemployment impact of the crisis speeding up the reintegration of job losers into the labour market (OECD Employment Outlook, 2012, 68).

A specific issue related to the labour markets of the Baltic States is migration. Labour force migration is one of the buffers that allow countries to limit the impact of economic decline. The official net emigration during the period 2000–2009 was 100,045 in Lithuania (3.3% of the total population), 30,228 in Latvia (1.5% of the population) and 14,261 in Estonia (1.1% of the population). During this time, Finland had a positive migration flow of 88,961 people (1.5% of the population) (Philips & Pavlov, 2010).

There is a common understanding that official migration figures underestimate real migration flows. Due to geographical and linguistic closeness to Finland, the number of inhabitants who permanently live in Estonia but are working full-time in Finland is quite large. The Estonian Labour Force Survey claims that in 2009, 20–30,000 Estonians worked permanently in Finland only (Hazans & Philips, 2009). This means that at least five times as many people temporarily left Estonia to work abroad as was indicated in the registered emigration data. In Latvia and Lithuania, the actual number of people working abroad is also higher than indicated in the countries' official migration statistics. In 2009, unemployment increased more quickly in Lithuania than the level of employment decreased, which suggests that many Lithuanians returned from abroad (especially Ireland and the United Kingdom) due to lower demand for their services there, and started looking for work at home, thereby increasing the number of unemployed individuals in Lithuania (Hazans & Philips, 2009). In 2010s, migration from the Baltic States was more moderate, and Estonia even achieved positive net migration in 2015.

The economic crisis played an important role in testing the administrative capacities of different governmental tiers. Labour market policies came under pressure. The Nordic countries managed to keep unemployment low. In the Baltic States, existing mechanisms and funding proved insufficient in the face of massive unemployment. Clearly, the labour markets were not sufficiently flexible to absorb unemployment. Many individuals had to find work abroad, curbing unemployment. In the long-term, however, this could undermine employment prospects and economic potentials.

6. Conclusions

The Baltic States have enjoyed the partnership with the other Baltic Sea region countries. That region consists of countries with very different resource bases, industrial structures and economic and social development levels. This creates an opportunity for future economic integration and mutually beneficial interwoven. Access to the Baltic Sea has been seen as an important factor supporting trade and spreading good experiences and best practices. At the same time, economic development patterns heavily depend on the institutions that play an important role in framing the business environment.

For a successful future, the joint positive framework for business could be the basis for prosperity of the region. This positive framework means the possibility of mutually beneficial foreign trade and the closer integration of business clusters on all sides of the Baltic Sea. Cooperation between countries in the region would create a good basis for mutual benefits, the Baltic States profiting from access to wealthy markets and the Nordic countries gaining from access to natural resources and relatively skilled cheap labour. The integration of these different economies would increase the competitiveness of the region in the global economy.

The political governance in the framework of the EU and its Baltic Sea Strategy has played an important role in framing the political, social, and economic conditions of the region. In economic and business fields, the impact of MNCs has also been important, because through investment and foreign trade, they very much influenced BSR production patterns and labour markets. The latest developments, however, demonstrate that state-level factors are again more important in framing regional contacts.

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The Danish economy

John Smidt

1. Introduction

The Danish economy has as every country in the world had its economic up- and downturns, but in many respects the economy is in much better shape than it used to be. Several policy changes over the last decades have contributed to make public finances sustainable, reduce unemployment and increase savings, and Denmark has been able to maintain a position as one of the world's richest and most equal countries. However, challenges lie ahead. Productivity growth is relatively low, especially in the service sector, and the universal welfare system is challenged by globalization and changing demographics.

This article provides a presentation of the Danish economy. The first part of the article contains a brief description of the overall economic development. Emphasis is given to some of the major policy reforms that have been implemented since 1980. The second part of the article, zooms in on growth performance of the Danish economy since 2000, and some explanations for the moderate growth performance is provided. The final part of the article focus on selected elements of relevance for the future economic performance.

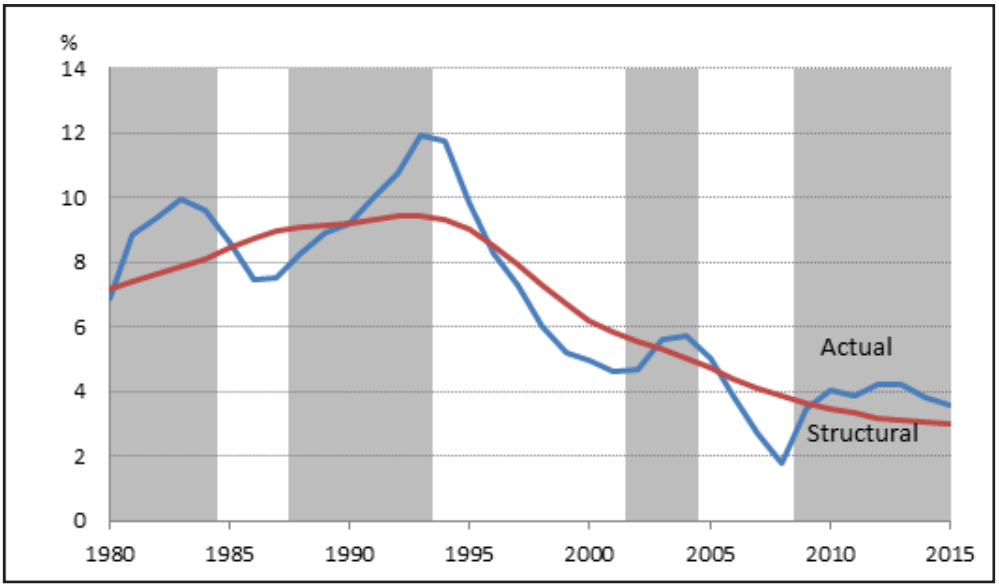
2. Danish economy and economic policy

This section gives a brief overview of the development of Danish economy since 1980. Focus is on the policy reactions to the changing circumstances that have evolved over the period. The overall conclusion is that the policy reactions have been supportive for economic efficiency and in general changed the institutional framework in a beneficial way.

To help keep track of the overall picture, the development of unemployment in the period 1980–2015 is depicted in Figure 1. The solid line shows the actual unemployment, and the dashed line shows the structural unemployment, i.e. the unemployment rate that would be consistent with stable inflation and a neutral business cycle situation. The shaded areas depicts periods of recession.

As can be seen unemployment was high in the beginning of the 1980's, and even higher in the beginning of the 1990's. With a brief disruption just after the turn of the century, the economy experienced a long period of positive growth and declining unemployment – a period that gradually turned into an overheating situation. In 2008 the global and financial crises hit Denmark along with most other countries in the world, and unemployment has since then been above structural levels – albeit low in historical terms. In the following, this picture will be elaborated upon.

Figure 1. Unemployment rate in Denmark, 1980–2016



Note: Shaded areas indicate periods with a negative output gap (i.e. GDP below the structural level). National definition, based on register data, is used for the unemployment rate.
Source: Danish Economic Councils (2017).

2.1 Fixed exchange rate regime, tax reforms and pensions in the 1980's

In the beginning of the 1980's the Danish economy was in pretty bad shape: Unemployment was high, the balance of payments showed more or less chronic deficits, interest rates and inflation were fuelled by systematic devaluations of the Danish krone, and the public sector ran large and increasing deficits. The problems had been piling up for years, and gradually it became apparent, that recurrent devaluations and go-stop-go-stop fiscal policies were not relevant answers to the structural problems that arose from the supply shocks of the 1970's.

In other words, the structural problems of the Danish economy called for a significant change in economic policy. One important change in the direction of a more stabilization-oriented policy was the transition to a fixed exchange rate regime, which was proclaimed in 1982. The fixed exchange regime has been upheld ever since, and Denmark is currently the only member of the ERMII.

As a consequence of the new exchange regime, interest rates and inflation started to move closer to German levels. In the period 1982–1985 interest rates were halved – going from 20% to 10% in just three years. The steep drop fuelled domestic demand, and it became required to take steps to avoid a burgeoning overheating. Unfortunately, as it turned out, the policy response was not optimally timed – and when it finally came in 1987, the tightening had to be rather harsh.

The significant tightening of fiscal policy gave rise to a steep rise in unemployment, a prolonged period of very low growth and serious problems at the housing market, which spread to the financial sector. However, from a structural point of view the policy changes comprised some rather beneficial elements, including a major tax reform.

The tax reform included a broadening of the tax base, a lowering of the marginal tax rates and significant reduction of the deductibility of interest payments. First of all reducing the marginal tax rates improved the incentive to work and hence labour supply. Secondly, the reduction of the deductibility of interest payments reduced the subsidize to take up loans – contributing significantly to an improvement in the balance of payment, which had been an Achilles heel of the Danish economy for decades.

At the same time, private savings were improved perhaps even more significantly by broadening the coverage of the collective pension schemes. Previously, pension savings had mostly been limited to groups with high income, but gradually the funded pension schemes was extended to cover the vast majority of the employed, including blue collar workers. The short run effect on public sector finances was negative (due to tax deductibility of the pension contributions), but the taxes foregone in the short run will be collected in the long run (when the pension savings are paid out).

In the 1990's and 2000's the labour market pensions became even more wide spread, and new reforms to the tax system continued the direction of the 1987-reform, reducing marginal tax rates and lowering the deductibility of the interest payments.

2.2 Labour market reforms in the 1990's and 2000's

Another feature of the policy changes in the 1990's and forth was the labour market reforms. Until the mid-1990's the unemployment benefit period was formally seven years, but in reality the benefit period was indefinite (due to fact the unemployed could requalify for unemployment benefits by the means of taking on a subsidized job, which more or less automatically was offered to those in danger of dropping out of the system). The generous unemployment system was probably part of the explanation for the relative high unemployment in the 1980's and beginning of the 1990's.

Beginning in the mid-1990's, a sequence of reforms to the unemployment system reduced the unemployment benefit period – first by requiring unsubsidized work to requalify for a new period of entitlements, effectively setting the maximum entitlement period to seven years, and later by reducing the period to four years[1]. The reforms also increased focus on the active labour market policies, giving the unemployed incentives and help to actively look for jobs. The incentives to search for jobs were also enhanced by lowering of the average replacement ratio, which especially for low wage earners was very high.

The labour market reforms have significantly reduced the structural unemployment, from around 9.5% in the early 1990's (register-based) to around 6% in the beginning of the 2000's.

The changes to the unemployment system were supplemented by changes to other parts of the public transfer system. These changes have added to the effect of the reforms of the unemployment benefit system. Especially noteworthy was the tightening of the voluntary early retirement scheme.

The voluntary early retirement benefit scheme, that allowed people above 60 years of age (five years prior to being eligible to the general old age pension) to retire, was introduced in the late 1970's with the aim of reducing unemployment. The scheme was generous, and became increasingly popular. Over the years several changes were made to make the scheme less profitable, but the number of early retirees was still

1 In 2010 the entitlement period was reduced to two years.

high. However, in 2010 the generosity of the scheme was greatly reduced: The number of years allowed was reduced from five to three, and the earliest age to receive the benefit was increased to 64. These changes have reduced the number of people in the scheme significantly, and as a mirror image, the number of employed in the ages above 60 has increased.

2.3 The Welfare Reform of 2006 addressed long-term sustainability

By the turn of the century, it became more and more apparent that one of the major challenges to the Danish economy was the demographic changes. The large cohorts that were born just after World War II were approaching retirement, and the new cohorts, who were supposed to replace the older ones, were significantly smaller. And at the same time longevity was increasing rapidly.

The perhaps most prominent economic reform in Denmark in recent times, the so-called Welfare Reform, addressed exactly these challenges. The Welfare Reform, that was agreed upon in 2006, shortly after an expert commission had publish their recommendations on how to safeguard the welfare state in the light of the demographic challenges lying ahead, ref. Velfærdskommissionen (2006).

The Welfare Reform contained several elements, including additional reforms of the labour market.[2] The most prominent element however was an increase in the retirement age. Not only should the official retirement age increase from 65 years to 67, but even more important, the retirement age became indexed to life expectancy in the future.

The indexation mechanism of the Welfare Reform actually handled most of the long-term sustainability problem that Denmark faced at that time. However, there were some design issues. The perhaps most important was, that the indexation mechanism was not supposed to take effect until 2019. One consequence of this was obviously, that the positive effects would not be visible in the short run, and as the public finance was on an unsustainable path, the indexation mechanism had to be designed in a way that was stronger than would have been otherwise required. The result was, that the indexation mechanism was designed to target the expected number of years as a retiree – and not what perhaps would have been more naturally, namely the proportion of a lifetime spend on retirement.

2.4 Fiscal policy: Experience overall positive but mixed experiences and complex framework

With a fixed exchange rate, monetary policy cannot be used to stabilize the business cycle. In this situation fiscal policy is the prime instrument, and in the past it has been used actively as such.

The fiscal policy of the 1970's was characterized of "stop-go". In hindsight this was not very successful. In the following decades, fiscal policy continued to be the main instrument as stabilization – some times with success, other times not. In the mid-1980's, fiscal policy reacted to the overheating of the economy too late. The same was the case in mid-2000's, where overheating was perhaps even more severe. On the other hand, fiscal policy played an active role in the mid-1990's, when the Danish economy was in a rather prolonged

2 In 2006, when the Welfare Reform was agreed upon, the economy was suffering from a severe overheating, and labour shortages were high on the agenda. One of the elements of the reform was to cancel the special provisions that made it possible for persons in their fifties to receive unemployment benefits for a longer period than younger persons.

recession. And in fiscal policy was also used actively in the wake of the global economic and financial crisis in 2009–2010.

Fiscal policy is still the single most important macroeconomic stabilization tool, but focus in fiscal policy has gradually shifted from short-term oriented stabilization to a more forward-looking framework. Starting in the late 1990's, the Government started to present medium term plans for fiscal policy, looking 5–10 years into the future. These plans are only meant to act as broad guidelines, but generally, policy has been designed to fulfil the targets set out in these plans. The overall framework and the plans themselves have been favoured by widespread support at the Danish Parliament.

An important element of the plans has been a target for the public balance at the end year of the plan. Thus, the plans have had a near relation to the EU MTO's (Medium Term Objectives). The medium term targets have in the last 5 to 10 years been set, so that long-term sustainability is achieved, if the medium term target is met. Hence, calculations of long-term fiscal sustainability have been an important and integrated element of the fiscal policy framework.

The forward-looking focus has been important, because it removed focus from very short-term activism – leaving room at active stabilization policies when it is actually needed. One issue with the plans, especially until around 2010, has been that they relied on policy actions to be taken in the future – that is within the planning horizon. Often these future policy actions, necessary to meet the medium term target, comprised additional reforms, which could increase the structural labour force, but these reforms were not concrete.

The current framework for fiscal policy is fundamentally sound, but rather complicated: Annual budgets for the general Government is combined with expenditure ceilings governing the expenditures (excluding unemployment related expenditures and public investments) four years ahead. The public finances have to meet the requirements of the EU-rules, i.e. the 3% limit for the actual budget, and the structural deficit is according to the national Budget law not allowed to exceed 0.5% of GDP)[3]. On top of this comes the targets set out in the medium term plans and the overlying aim, that fiscal policy should be long term sustainable.

This complex framework makes it complicated to monitor fiscal policy – and in principle every initiative should be held up against all targets and restrictions. This is not an easy task, as different initiatives have different impacts on the different targets – and the binding restriction may very well vary from case to case.

As noted above, fiscal policy reacted to the boom in the mid-2000's too late. One reason for this was probably, that the capacity of the economy (the structural level of GDP) was overestimated at the time. A consequence of this was that too large a part of the public surplus (which was also positively affected by increasing, but temporary tax revenues stemming from the extraction of oil and gas in the North Sea), was mistakenly taken as structural and permanent.

3 The structural balance describes the underlying stance of the public finances. It is a hypothetical concept that depicts what the balance would look like in a neutral business cycle situation. It is from an economic point of view a relevant concept – but there are issues using it in a year-to-year context of fiscal policy. One issue is that the calculation involves quite a few choices of methodology and assumptions, so different views on the structural balance are in play at the same time. Another issue is that the estimation of the structural balance in real time is especially difficult.

Another problem was that targets for public expenditures more or less systematically were exceeded. To a large degree, this reflected an inferior management of the local municipalities, which allowed municipalities to transform cyclical tax revenues into (permanent) spending increases.

The problem of the loose fiscal policy in the mid-2000's was aggravated by a so-called tax-freeze. The tax freeze, which was proclaimed in 2002, consisted of several elements. One element was a political commitment not to increase tax rates in general. It was believed, that the tax-freeze would help to keep growth in expenditures down, but as mentioned before this was actually not achieved, at least not to the degree it was hoped for.

Another element in the tax-freeze was a nominal freeze in duties on energy and other indirect taxes, and a nominal freeze of the tax on houses (tax on imputed rent). Especially this last part was from an economic point of view very unfortunate, because it meant that the tax on housing became pro-cyclical. In the period 2002 to 2007 the effective tax rate on housing was more than halved, contributing significantly to the boom in house prices and hence the overheating of the economy.

3. A closer look at growth performance 2000–2015

Even though the overall performance of the Danish economy has been good, and Denmark ranks among the richest countries in the world, growth in GDP has been moderate since the turn of the century. Average growth in GDP per capita in the period 2000 to 2015 in Denmark was around 0.5% per year. This is significantly below countries like Germany (average growth per capita around 1.2%), Sweden (average growth 1.4%), or the UK (average growth 1.0%).

Part of the story is, at that the global economic and financial crisis hit different countries differently, and the recovery has been slower in some countries (e.g. Denmark) than others (e.g. Sweden). However, the difference in average growth was also manifest prior to the crisis.

The meagre growth in Denmark can to a large extent be attributed to low growth in productivity. At least since the mid-1990's, productivity growth has been relatively low. The poor productivity performance was (and is) seen as one of the bigger problems in Danish economy. This led the Government to set up an independent, temporary Productivity Commission in 2012, and later (in 2017) to appoint the chairmenship of the Danish Economic Councils to function as permanent productivity board.

The Productivity Commission produced several reports, with three main conclusions (Produktivitetskommissionen, 2014): First of all, lack of competition in the service sector is almost certainly an important part of the explanation for the poor growth performance. Secondly, the Commission pointed to different issues in the education system, which is by no means outstanding in international comparison (despite being relatively expensive). Finally, the Commission pointed to the large public sector and productivity issues there.

Even though growth in Denmark has been poor, it is relevant to mention a few observations to put things in perspective. The first observation relates to an easily overlooked issue, namely demographics.

As it turns out, a significant part of the poor growth in Denmark can be explained by demographic developments. This might be somewhat surprising in as much we are looking at GDP per capita (and productivity). But even

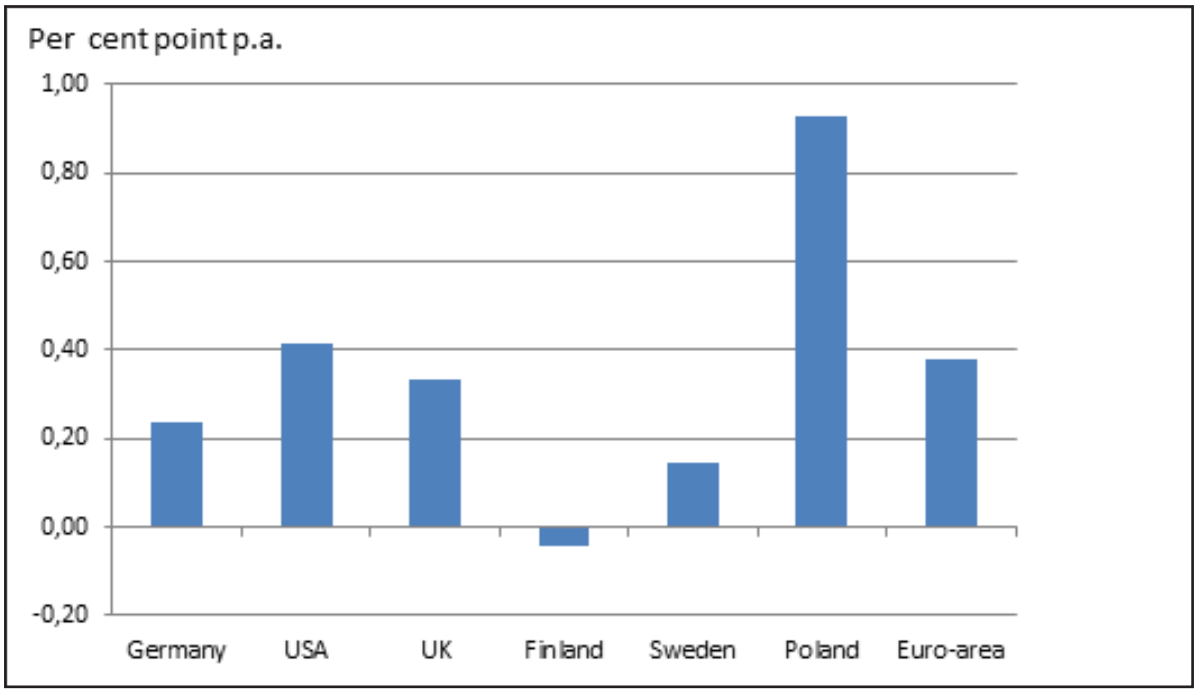
though we are focusing on the relatively short period since 2000, there have been important demographic changes that have affected output growth per capita. Not only in a pure Danish context, but also if Denmark is compared to most other OECD countries.

There are two reasons why demographic changes can affect output per capita. Firstly, the share of the population that are within the working ages (e.g. 15–64) may vary. Secondly, the age distribution within this age group may change. As young people generally have low employment rates (many young people are in the education system) and lower productivity (young people have less experience than older), a larger proportion of young people will tend to reduce productivity growth.

Both these effects have been at play in Denmark – and both have tended to reduce productivity. The share of the population between 15 and 64 has dropped from above 66.5% in 2000 to 64% in 2015. In the same period the share of 15–24 -year olds has increased (by more than 2 percentage points) and the share of 30–44 -year olds has decreased even more significantly (by more than 4.5 percentage points). In the majority of the European countries, the share of 15–24 -year old has dropped (not increased), and the drop in the share of 30–44 -year olds has been much smaller than in Denmark.

Thus, part of the slower Danish growth per capita can be explained by unfavourable changes in the demographics. In Figure 2, it is shown how Danish growth in GDP per capita would have changed if the demographic changes had been as in the countries shown. The figure shows, that annual Danish growth per capita in the period 2000–2015 on average would have been 0.35–0.40% higher, if the demographic development had been as in the euro area. Growth in Denmark would have been around 0.15% higher, had the demographics been like in Sweden. Out of 35 OECD countries examined, only Finland and Japan have had more unfavourable development in the demographics.

Figure 2. Hypothetical effect of demographic shifts on Danish growth



Note: The figure shows how much annual GDP-growth per capita in Denmark over the period 2000 to 2015 on average would be have been affected if the demographic changes had been as in the countries shown.
Source: Updated calculations based of Danish Economic Councils (2016a).

GDP is traditionally used as a measure of a nation's material prosperity. However, other factors are important to consider as well.

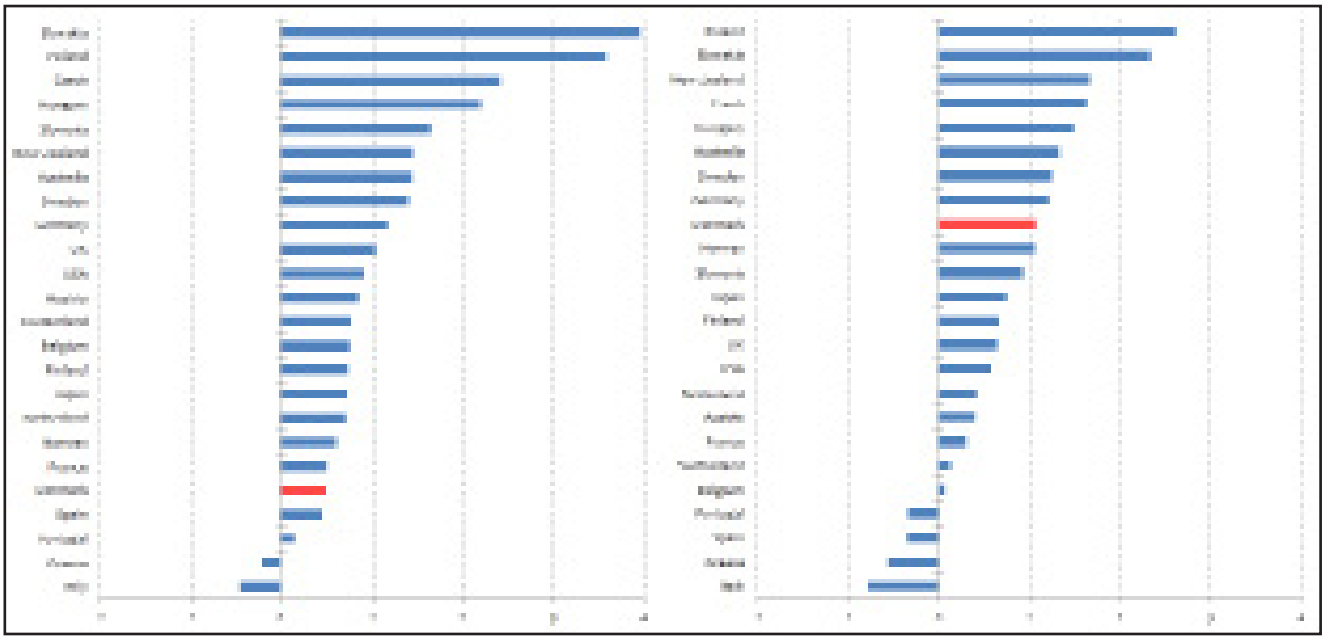
One element to take into consideration is net income earned abroad, that is effectively look at Gross National Income (GNI). As Denmark the last two decades has been running significant surpluses on the balance of payments, net capital income from abroad is positive and increasing – and national income is rising faster than national production.

Another element to consider is the terms of trade. For obvious reasons it is beneficial to consumers to be able to buy relatively cheap goods and services from abroad, but this is not directly accounted for in the calculation of GDP. If a country is able to export goods and services at a higher price, than the price of the goods and services that are imported, real income will be affected positively – as the country is experiencing a gain in the terms of trade. Over a long period, terms of trade have improved, adding to the purchasing power of the Danes.

Taking all these things together – demographic changes, net capital income from abroad, and terms of trade – one get a more positive view on the Danish economy: If you rank Denmark among 24 OECD-countries, Denmark comes out as number 20, if you look at average per capita real growth of GDP[4]. This is shown below in the left hand side of Figure 3. If corrections for differences in demographics, net capital income from abroad, and terms of trade are made, Denmark moves up to a position as number 9, as can be seen on the right hand side of Figure 3.

4 Compared to all OECD-countries, Danish growth per capita in the period 2000 to 2015 ranks 31 out of the 35 OECD countries; the countries with lower average growthratese are: Italy, Spain, Portugal and Greece. As the demographic changes used in the following were not immediate available, the comparison in the text is narrowed into the 24 countries shown in Figure 3.

Figure 3. Average growth rate per capita, 2000 to 2015 GDP/GNI, adj. for terms of trade and demographics



Note: The left hand side graph shows average growth in real GDP per capita (per cent per annum) over the period 2000–2015. The right hand side graph shows the average growth in GNI (Gross National Income) per capita, corrected for terms of trade and demographics. The demographic correction is done by subtraction from each country, the additional growth Denmark would have had, had the demographic changes been as they were in the country under consideration; the corrections are (for six countries) shown in Figure 2.
Source: Updated calculations based of Danish Economic Councils (2016a).

4. Looking forward

The medium outlook for the Danish Economy is for obvious reasons associated with uncertainties, but basically there are several reasons to be at least moderately optimistic. Some of these reasons are briefly touched upon in the following.

4.1 The current situation is supportive

The current economic situation seems supportive for future growth. Savings of households and firms are high, and investments are low, so the potential for demand to pick up is substantial. Employment is on an upward trend, and real house prices are increasing. Monetary conditions are supportive, and firms are expected to increase investments in order to keep the capital stock rising with the future increase in labour supply. From a business cycle point of view, domestic risks seem primarily to be related to labour shortages that might impede growth.

4.2 Demographic relative headwinds are projected to fade away

The relative demographic changes, that as described above in the period 2000–2015 worked against Denmark, is likely to be neutral to relative growth in the coming years. In the longer perspective demographics will expectedly even work in the opposite direction with regards to relative growth. The expected positive effect is due to the fact, that the proportion of people aged 15 to 64 in the coming decades is projected to decrease at a slower rate in Denmark than in other countries. This could add something like 0.15% to the annual Danish growth rate of GDP per capita compared to the average OECD countries (cf. Danish Economic Councils, 2016a).[5]

5 In absolute terms demographics will expectedly restrain growth per capita in most countries, including Denmark.

4.3 Public finances are basically sound

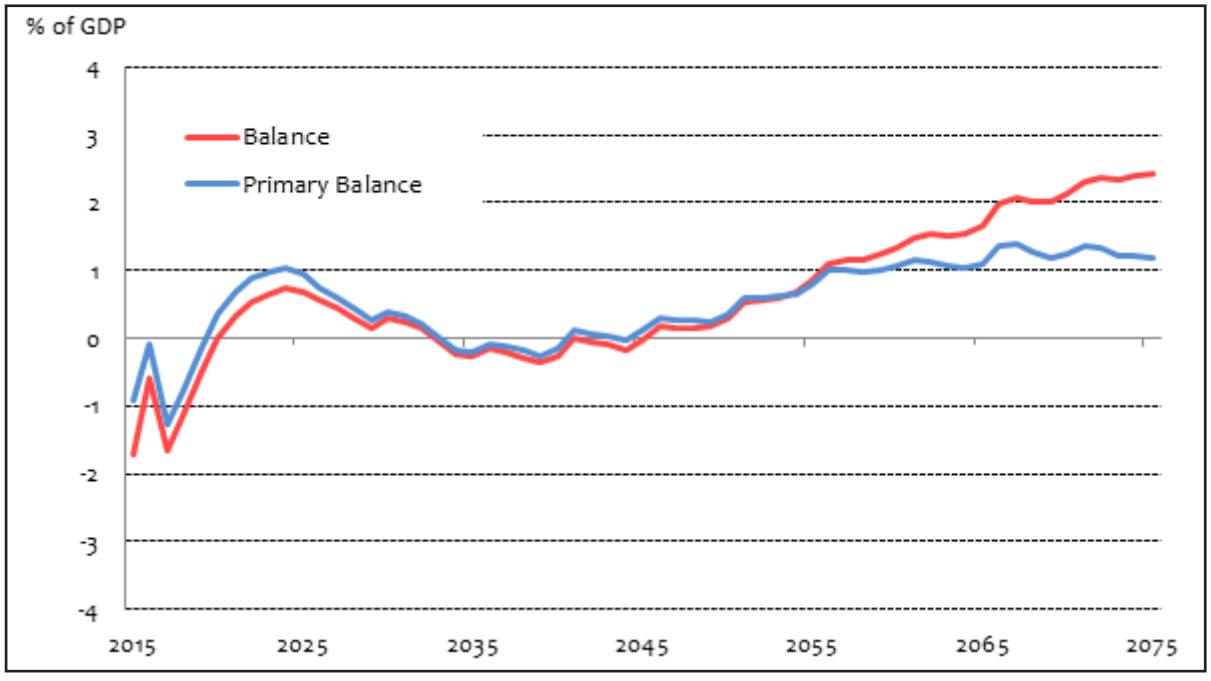
An import prerequisite for continued growth is sound public finances. As have been seen in countries like Greece, Italy, Spain and Portugal lack of confidence in the public finances is for different reasons subversive to growth.

In the Danish case, public finances are as discussed above underlying strong. The structural deficit is currently, slightly below 0.5% of GDP and the public finances are expected to improve. Gross debt is well below the 60% threshold, and public net debt, which from an economic point of view is the relevant, is less than 10% of GDP.

Long-term projections, taking into account among other things demographics (including effects of increased longevity on public expenditures) and extraction of natural resources (and taxes related to that), shows that a temporary deterioration of the public sector balance is likely, but in the very far future public finances will most likely improve significantly. In the very long run a significant surplus is expected, and public assets are foreseen to become larger than liabilities, i.e. net debt will turn negative.

In Figure 4, one such long-term projection of the public finances is shown. The projection is based on current policies. It is assumed, that tax rates are unchanged, and that all transfers and publicly provided services (per person in each age group) are linked to productivity. What the projection basically shows is that it is possible to maintain current level generosity of the welfare system, without having to increase taxes. This is seen by the fact, that the public sector balance is expected to remain positive, except for a relative short period around 2035–2045. As the figure shows, the overall balance is expected to outpace the primary balance (that is the balance excluding interest payments). This reveals the fact, that public debt in the long run is expected to vanish (actually the public sector is expected to build up assets in the long run).

Figure 4. Projection of Danish public finances, 2015–2075, % of GDP



Note: The projection is based on current policies (unchanged tax rates and indexation of transfers and public provided services (for each age group) to wages).
Source: Danish Economic Councils (2016b).

Obviously, projections that far into the future are uncertain and rely on a whole bunch of assumptions. However, if these assumptions holds, the projection indicates, that the fiscal policy is actually "over-sustainable".[6]

There are several reasons for the positive outlook for the public finances in Denmark. One important element is the postponement of taxes on pension savings. Accumulated pension savings corresponds to something like twice the size of GDP. The return on these savings is taxed, contributing positively to the public finances. However, more importantly the postponed taxes represent a significant implicit asset to the Government – an asset which is not included in the official statistics of public finances.

Another very important reason for the long term sustainability of the public finances is the aforementioned indexation of the pension ages that came around with the Welfare Reform. As described earlier, the indexation stipulates, that the formal retirement age, which is currently 65 will be indexed to (expected) longevity. According to this indexation, the retirement age will rise to 67 in 2022. In 2030 the retirement age will be increased to 68 and in 2040 the formal retirement age is expected to be 70 years. This might be a too optimistic view of the future. In principle, future politicians can change these rules – which could fundamentally change the picture.

5. Concluding remarks

As described above economic policy in Denmark has in many respects been quite successful in changing the institutional framework in a positive direction. The change to a fixed exchange rate regime in the 1980's has supplied an anchor for inflation expectations, and reduced uncertainty. Tax reforms have lowered marginal tax rates, increased labour supply, and reduced distortions in the economy. Labour market reforms have lowered structural unemployment and increased labour supply. Changes to the pension system have addressed the fundamental question of sufficient savings and the long-term sustainability of public finances. And the fiscal framework has increasingly moved to a forward-looking and stabilization-oriented focus.

Overall, the Danish economy is in a fundamentally good shape. As has been described, current fiscal policy is sustainable, and public finances are (given the indexation mechanism of the Welfare Reform) to a large extent immune to increased longevity. Growth will most likely be higher in the years to come than has been the case in the recent past.

Looking very generally on the Danish economy, it looks like the politicians have been able to strike a very good balance on the traditional efficiency-equity trade off. The exact choice is obvious a political one, but it seems like Denmark has been able to position itself close to the "efficient frontier", (cf. Andersen & Maibom, 2016): Equality is by most standards high and so is efficiency (as measured by GDP (or GNI) per capita). Apparently, high taxes and massive redistribution have not prevented high employment rates, which at least in part probably can be explained by flexible rules on the labour market for hiring and firing (according to the so called flexicurity model).

Looking forward several challenges lie ahead. One major question is how globalization in its different forms will affect the Danish economy in general and the welfare state more specifically.

6 The "over-sustainability" implicit in the figure is of the magnitude of 0.5% of GDP – meaning that a permanent increase in public expenditures (or a reduction of taxes) of 0.5% of GDP would be consistent with a debt to GDP ratio, that is stable in the long run.

Denmark is a very small country and as such highly dependent on the global economy. Denmark needs to trade with other countries not only to get hold of raw materials, that we do not possess, but at least as important to be able to harvest the benefits of international division of labour. For this reason, Denmark is a strong proponent for free trade and international cooperation, and recent tendencies threating free trade and cooperation in the world and within EU are absolutely not beneficial to Denmark.

Globalization, however also poses some challenges to the Danish economy. The universal welfare model, that characterizes Denmark, is often compared to an insurance company: People that are unlucky in some way or another receive benefits from the Government, and fortunate people pay more in taxes, than they receive. Thus the system involves transfers from the lucky to the unlucky, just as is the case in an insurance company. In such a system, migration poses a challenge, as it raises a fundamental question of solidarity.

Globalization can also challenge the welfare system in another way. Tax bases are becoming more and more mobile, so there might be a need to harmonize tax rates and tax systems to those of our neighbours. If Denmark want to maintain a larger public sector than in our neighbouring countries, it may be necessary to focus more on the less mobile tax bases such as taxes on houses and land.

Looking back on history, Denmark has been able to adapt to changes. The Danish labour market is by international standards flexible (easy hiring and firing). The business sector is characterized by many small and medium sized companies, which might be beneficial when changes in the business structure are called for.

Economic policy framework is very much forward looking. This provides a stable and predictable environment, and public finances are resilient to demographic changes. However, at least one important caveat applies: Future generations must accept fewer years on retirement than current cohorts. This might be one of the biggest challenges to address.

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International trade in the Baltic Sea region

Claus-Friedich Laaser & Klaus Schrader

1. Motivation

The 100th anniversary of the Republic of Finland in 2017 gives rise to take stock of Finland's role in the world. From an economic perspective, a country's role in the world can be described by the trade relations, which it maintains with its partners all over the world. Its geographical and sectoral trade patterns reveal which partners it is particularly integrated with, and what are the commodities the economy has specialized on. Finland as a Baltic Rim country is intensely integrated with its Scandinavian neighbors. It is a full member of the European Union (EU) since the 2nd Northern Enlargement in 1995, it maintains close relations to the Baltic States, and Finland is direct neighbor to the Russian Federation. Therefore, it suggests itself to analyze trade relations in the context of the Baltic Sea Region (BSR).

Against this backdrop in Section 2 the authors first define what BSR trade actually means. If we take all the countries on the Baltic Rim, then we might overstate BSR trade. The three larger BSR countries Germany, Poland, and Russia tend to overstretch the term "BSR". Based on a redefinition of BSR trade we compare intra-Baltic with extra-Baltic trade. In an era of globalization, trade links to distant countries may be more important than regional integration. In Section 3, two recent challenges to BSR trade are discussed both from the perspectives of geographical and sectoral trade patterns: the impaired trade relations with Russian in the aftermath of the Ukraine crisis since 2014, and the looming Brexit and its consequences for EU trade. In Section 4, we deploy an analytical tool of trade analyses, a gravity model, to evaluate the attracting and hampering forces that are shaping trade flows in the BSR, whereby trade relations of the (still) EU28 serve as a benchmark. In Section 5, the authors draw some conclusions on the perspectives of international trade in the BSR.

2. Baltic Sea trade in the world economy revisited

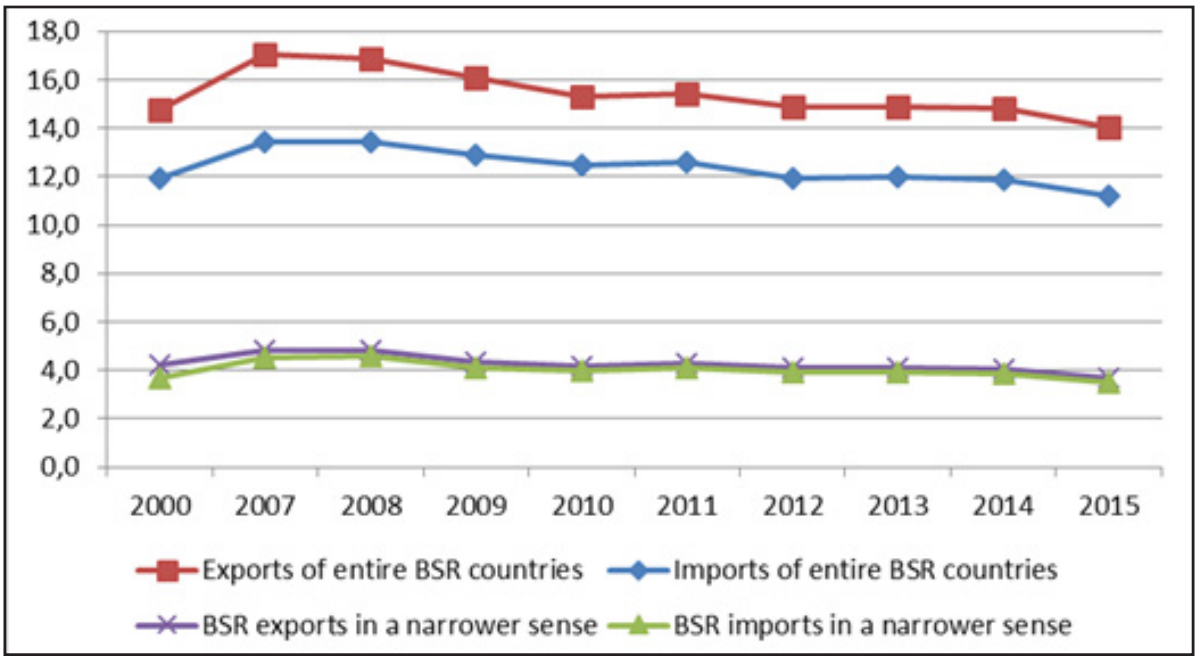
The Baltic Sea Region has ever been a particularly busy trade area with close trade and transport relations among the countries on its rim. This did not only come true for the Western rim (in a political sense), but even so for east-west traffic during the Soviet era, where nearly one-third to the former USSR's foreign trade was handled by Baltic ports (Böhme et al. 1998: pp. 1-2). In the meantime, the Baltic Sea has nearly been transformed into an EU inland sea, with Denmark, Sweden and Finland becoming EU members in 1973 and 1995, and Poland, Estonia, Latvia and Lithuania joining the EU in 2004. Only Russia and Norway are left as non-EU rim countries, and yet Norway is member of the European Economic Area with free trade relations with the EU.[1] Accordingly, the BSR traditionally is regarded as a region with intense trade relations outperforming those of other regions of the world economy.

1 Norway is regarded as a Baltic Sea Region member due to close links with its Nordic neighbors and the definitions in transport statistics (Böhme et al. 1998: p. 1, footnote 2).

2.1 Some misjudgments on BSR trade

Looking at trade data indeed renders – at least at first sight – the impression that the share of BSR trade in total world trade is impressive: exports of all BSR countries accounted for 14% to 17% of world exports in the 2007 to 2015 period, imports accordingly for 11% to 13% (Figure 1, upper two lines).

Figure 1. Two perspectives on Baltic Sea Region exports and imports [a,b]



[a] Exports and imports of entire BSR countries in percent of world exports and imports (upper two lines). Corrected BSR trade in a narrower sense according to the following pattern (lower two lines): exports and imports of BSR countries only to other BSR countries (in the case of Denmark, Germany, Norway and Poland), estimated (in the case of Russia), or of entire BSR countries (in the case of Estonia, Finland, Latvia, Lithuania, and Sweden), in percent of world exports and imports. – [b] Increase 2000-2007 and decline 2014-2015 mainly due to € revaluation vis-à-vis the US-$ and its effect on German trade flows (approx. 55 % of BSR trade).

Sources: UN Trade Statistics (2016); Eurostat (2016a); Statistics Norway (2016); Federal'naja Tamožennaja Služba, various issues). – Own compilation and calculations.

However, these figures might be misleading in the case of a number of Baltic Rim countries, because they represent total trade of these entire countries regardless whether these flows are linked with the BSR: either Baltic Sea maritime transport, or Baltic Rim ground transport or Baltic Rim-related economic activities. Particularly Germany is a prime example for this overstatement of BSR trade, because German exports make up for more than half of total Baltic Rim exports as well as imports and thus dominate aggregated trade flows of entire Baltic Rim countries. In BSR terms, only the German federal states of Schleswig-Holstein and Mecklenburg-Vorpommern are located directly on the Baltic Rim. The Free and Hanseatic City of Hamburg, however, may also be regarded as part of the BSR due to its role as major Baltic maritime transport hub port. But also Denmark, Norway, Poland and Russia are trading via other routes that do not touch the BSR.[2] In Poland, only the voievodeships of Zachodniopomorskie, Pomorskie, and a little bit of Warminsko-Mazurskie are Baltic Rim provinces. In Russia, only the oblasts of Kaliningrad and Leningrad as well as the City of Sankt-Peterburg are lying directly as the Baltic shore.

Therefore, in order to obtain more realistic figures of BSR trade, the following correction scheme has been applied: For Germany, only the share of trade with other Baltic countries (in 2015: 11.5% of exports and 13.6%

2 In the case of Germany and Russia, it is self-evident that trade flows from / to far distant regions are not part of BSR trade.

of imports) was included. The same procedure was applied to Denmark, Norway, and Poland. For Russia the estimate of 50% of total trade according to Böhme et al. (1998: p. 138) was used to account for Russian trade flows taking the Baltic Sea ports and routes.[3] The trade flows of Sweden, Finland and the three Baltic States Estonia, Latvia and Lithuania were included in total.

As a result, in 2007 the share of BSR trade in total world trade was less than 5.0% of exports and 4.5% of imports; it decreased to less than 4.0% of exports and 3.5% of imports in 2015 (Figure 1, lower two lines). And it is worth mentioning that this decline – as well as the increase between the also reported year 2000 and 2007 – were mainly due to €–appreciation and –depreciation vis-à-vis the USD and its effect on German trade figures.

The minor importance of true BSR trade simply reflects the limited economic size of the Baltic Rim countries compared to global GDP. Although particularly Nordic countries enjoy a high per-capita-income, at the same time these countries are sparsely populated so that the number of wealthy consumers is limited in absolute terms.

If we try to sketch a realistic picture of the BSR market potential, we have to assume the following: (1) less than 8% of Germany's GDP is contributed by the federal states of Schleswig-Holstein and Mecklenburg-Vorpommern (located directly on the Baltic Rim) as well as Hamburg (as a major Baltic maritime hub port); (2) for Poland we discount Polish GDP in the same way to 12%, covered by the Baltic Rim voievodeships; and (3) for Russia a little bit more than 5% of Russian GDP account for the Baltic Rim oblasts including the City of Sankt-Peterburg. In doing so, we arrive at a market potential of not more than 2.6% of world GDP for the whole Baltic Sea region. The share of Nordic countries on the Baltic Rim amounts to 1.9% of the world GDP.[4]

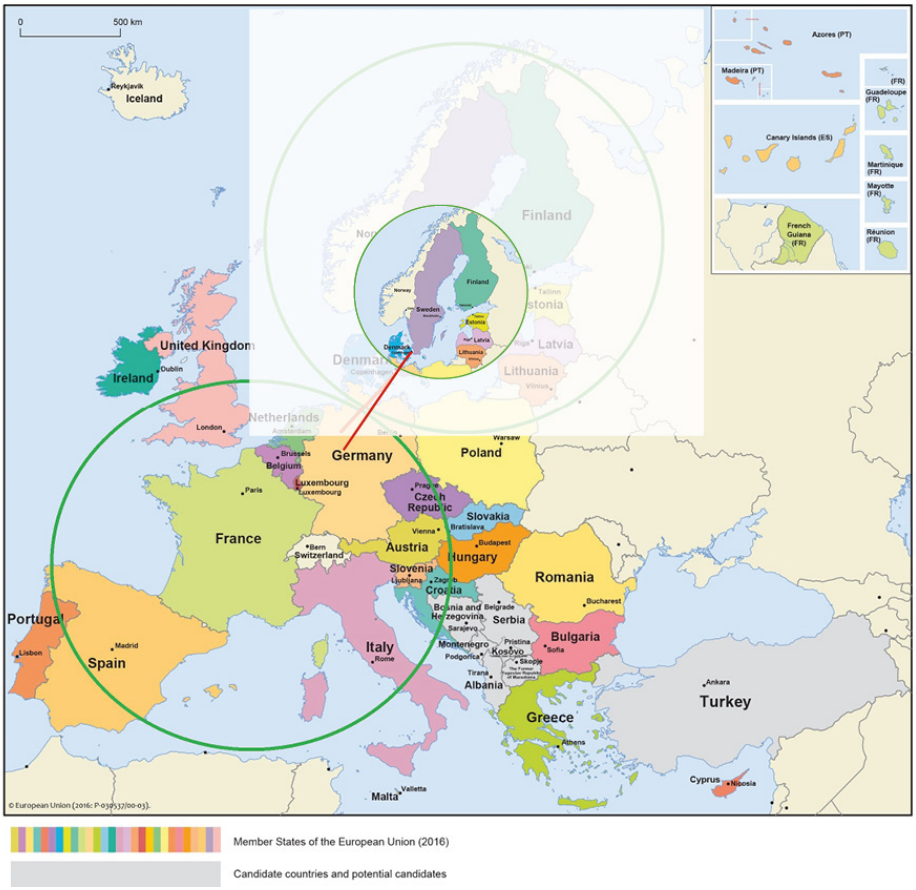
The limited size of the BSR can be visualized, e.g. compared to the economic centers of Europe, if the map of Europe which normally would show a kind of barbell with geographically nearly identical balls for the BSR and the economic center of Europe is corrected by market potentials. Taking the perspective of economic geography means redesigning the map according to the relative economic importance of the BSR compared to the economic center of Europe as it is done in Picture 1,[5] the BSR ball loses size substantially.

3 If only Russian exports to / imports from other BSR countries would have been taken into account, this would have resulted in a figure of around 20% for the years before the sanctions and counter-sanctions (calculated from statistics in Federal'naja Tamoženaja Služba, various issues).

4 Figures for this rough calculation were taken from The World Bank (2016) for BSR and world GDPs, Statistisches Bundesamt (2016a) for the shares of German federal States in German GDP, Eurostat (2016b) for the shares of Polish voievodeships in Polish GDP, and Deutsch-Russische Auslandshandelskammer et al. (2017) and Germany Trade und Invest et al. (2016) for the shares of Russian oblasts in Russian GDP.

5 Of course, the sketch in Picture 1 is not exactly to scale and only serves as an object of demonstration.

Picture 1. Europe, its economic center and the BSR from the perspective of economic geography



Source: © European Union (2016: P-030537/00-03), own adjustment (not to scale).

The sketch in Picture 1 may appear to be exaggerated, but it demonstrates the relative economic size of the BSR and why BSR trade – despite its undeniable importance – is smaller even in European context than suggested by the trade records of the entire members of the BSR.

2.2 Intra-Baltic versus extra-Baltic trade

At the same time, the correction scheme applied above reveals that the shares of intra-Baltic and extra-Baltic trade flows differ substantially across the individual BSR countries.6 The intra-BSR exports of Nordic countries did not exceed the 45% threshold in 2015, with Norway revealing the lowest share with 32% (Table 1), as expected due to the countries' peripheral location within the BSR. The Nordic export shares shrank to 25–30% (and even 14% in the case of Norway), if exports to the large German market are being excluded. The three Baltic States revealed the highest intra-BSR export shares ranging from 57% to 72%. These shares do not decline that much if Germany as export destination is excluded, indicating the close connections both to the Nordic countries and Russia. Poland's exports to the BSR showed a total share of about 40%, which collapses to 12%, if the close connection to Germany is not accounted for. It is not surprising that the BSR does not play the prime role for Russia's exports, particularly if only flows to the BSR without Germany are considered. Given the large variety of German trading partners around the globe, it becomes clear that the whole BSR accounts for even less than 12% of German exports.

On the import side, the picture is roughly the same as on the export side. Nordic countries exhibit slightly higher BSR shares (Table 1). Only for Finland the BSR plays a more distinct role, even if Germany is excluded

6 It should be noted that in Table 1 the countries are taken as a whole in contrast to what has been calculated in Figure 1.

as source for Finnish BSR imports. Estonia, Latvia, and Lithuania are again the most BSR-oriented Baltic Rim countries, and Poland's import shares roughly match its export shares. That is also true for the total BSR import share of Russia while it becomes obvious that it is mainly Germany where Russia's imports are coming from. For Germany the BSR import share is slightly higher than the export share.

Table 1. Shares of Intra-Baltic trade in 2015 [a]

Reporter	DK	EE	FI	DE	LV	LT	NO	PL	RU	SE
					Exports					
Intra-Baltic exports	43.1	72.0	41.9	11.5	65.2	57.2	31.6	39.3	17.3	40.1
… without those to Germany	25.1	66.7	28.0	11.5	59.0	49.3	13.9	12.2	9.9	29.8
					Imports					
Intra-Baltic imports	46.8	67.3	56.1	13.6	66.2	58.4	37.8	41.2	17.5	47.5
… without those from Germany	26.3	56.3	39.1	13.6	54.6	46.9	26.5	13.6	6.6	29.6

a Exports to / Imports from other BSR countries in percent of total exports / imports of the reporting country.

Sources: Eurostat (2016a); Federal'naja Tamoženaja Služba (2016); Statistics Norway (2016). – Own compilation and calculations.

To sum up: only for the Baltic States the BSR (including Russia) is the focal point of their trade relations so far. For Denmark, for Sweden and for Poland relations to the world market substantially exceed the intra-BSR trade. For Finland this is the case only for exports. For Russia and Germany, the BSR is only one of many partners.

3. BSR trade in the light of Russian sanctions and Brexit

3.1 The weight of trade with Russia and the UK

BSR trade has recently been challenged by two incidents: (1) in 2014 the EU sanctions against Russia and Russian counter-sanctions in the aftermath of the Ukraine crisis, and (2) in 2016 the British vote for a "Brexit", the UK's exit from the European Union. The EU sanctions against Russia and the Russian countersanctions coincided with a deteriorating economic situation in Russia since 2012 caused by shrinking oil prices and a sharp devaluation of the Ruble. One is inclined to attribute the lion's share of the apparent slowdown of export and import flows with Russia to the country's economic crisis, less to the sanctions which are not a trade boycott at all and do not affect the trade in main commodity groups seriously. Since, it is the Russian economic crisis that has left its marks in BSR trade statistics.[7]

In contrast, the British Brexit vote of June 23, 2016, could not have left any marks in trade statistics so far, as figures deployed in this article cover the current edge of 2015. Moreover, the actual exit will take several years, and it is not yet predictable how it will take place and which status as a trading partner the United Kingdom (UK) will have vis-à-vis the EU. Nevertheless, it seems plausible that the Brexit might have a special effect on BSR trade relations given the fact that the UK is a close neighbor to the BSR, only separated from it by the North Sea.

To what extent both incidents may harm international trade in the BSR can be predicted approximately by the shares of exports and imports in the individual BSR countries' trade with Russia and the UK. Table 2 displays

7 For details on the sanctions and counter-sanctions see Schrader and Laaser (2017: pp. 101-102).

the shares for 2015, the most recent year which data are available for, a year which already mirrors the Russian crisis.

On the export side, we find that the Western and Northern Baltic Rim countries' exports to the UK is many times higher than the exports to Russia: six times for Denmark, four times in the case of Germany, even 67-times for Norway, and five times for Swedish exports to Russia. For all these countries, the UK is by far the more important export destination. Poland on the Eastern Rim joins this group with a share ratio of more than two times, which implies that the European integration has fostered Polish-British trade relations.

Looking at Finland, the picture already changes: The Russian export share is already somewhat higher than the UK export share, which lags a little behind the UK exports shares of the Nordic neighbors. But the closest export links with Russia are still maintained by Estonia, Latvia, and Lithuania. Although the Russian share decreased substantially even for Lithuania, the country still holds the lead in European countries trade intensity with Russia.[8] In the opposite direction, the UK reaches only slightly more than two percent of Russian exports.

On the import side, in the case of Denmark, Germany, Norway, and Sweden the British weights are higher than the Russian weights, although Russian import shares turn out to be higher than the respective export shares, due to energy and raw material imports from Russia.

Table 2. Baltic Sea Region countries trade with Russia and the United Kingdom in 2015 [a]

Reporter	DK	EE	FI	DE	LV	LT	NO	PL	RU	SE
					Exports					
To Russia	0.9	6.7	5.9	1.8	11.4	13.7	0.3	2.9	--	1.2
To the UK	6.3	2.8	5.1	7.4	5.0	4.5	20.1	6.7	2.2	7.2
					Imports					
From Russia	1.7	6.3	10.9	2.9	8.4	16.3	1.8	7.1	--	3.4
From the UK	4.5	2.7	3.2	4.3	2.3	3.0	6.4	2.9	2.0	5.5

[a]Exports to / Imports from Russia / UK in percent of total exports / imports of the reporting country.

Source: Eurostat (2016a); Federal'naja Tamoženna ja Služba (2016); Statistics Norway (2016). – Own compilation and calculations.

For Finland, the share of imports from Russia is nearly twice as high as the export share and more than three times higher than the British import share. With respect to imports, Poland does not join the Western club. Instead, it exhibits a pattern close to the Finnish. The three Baltic States meanwhile show a heterogeneous picture: Estonia and Latvia seem to have got rid of their former close ties to imports from Russia, with import shares even smaller than Finland shares. Only Lithuania stands out with still more than 16% of its imports accounting for Russia. The Baltic States' imports from the UK are nevertheless altogether significantly smaller and again indicate a lower level of trade integration with the UK. For Russia itself, the UK's impact is nearly the same as on the export side: only 2% are reported for 2015.

From a synoptic perspective, a picture of two different BSR clubs emerges. The Western and Northern BSR countries are more linked to the UK, while the volatility of trade relations with Russia harms these countries less than the looming Brexit. Their "worst case" would be a "hard Brexit" with cutting off British ease access to the Common Market. Poland seems to be a country in between two clubs, as on the export side it relies more

8 See Schrader and Laaser (2015) and Laaser and Schrader (2016) on the Baltic States' links to the Russian market.

on westward shipments while on the import side Russia is more important. In this view, also Finland could be labeled as an "in between"-country. As Eastern club members, the Baltic States seem to be more prone to negative consequences of the declining trade with Russia, although they have managed to constrain their dependencies in recent years.[9]

3.2 Sectoral patterns of BSR trade with Russia and the UK

The previous analysis of BSR trade integration with Russia and the UK already revealed a heterogeneous picture: The BSR seems to comprise two clubs and two countries "in between". The trade intensities broadly follow an East-West pattern which implies divergent trade histories and as a consequence thereof diverging path dependencies which have not been overcome despite EU trade integration. Against this backdrop, it stands to reason that this kind of heterogeneity is also mirrored in the sectoral trade patterns of the BSR countries.

With respect to exports to Russia, the BSR countries' trade is focused on machinery and transport equipment, followed by chemicals and related products with medicinal and pharmaceutical products playing a major role (Table 3, for SITC codes see Box 1 in Appendix). This is especially true for the highly industrialized Western BSR countries Germany, Denmark and Sweden which have a focus on technology-intensive exports. But exports to Russia in such "heavy weight" commodity groups are of minor importance for these Western BSR club members: e.g. Germany's export of road vehicles (SITC 78) constitutes more than 14% of total German exports to Russia ("Russia Export Share") and with its share of more than 18% of German world exports ("World Export Share") the SITC 78 group is Germany's primary export group. However, merely 1.4% of German road vehicles are exported to Russia ("Russia Export Weight") though Russia accounted for 1.8% of German world exports. This means that the importance of Russia is very limited and a dependence on exports to Russia is not observable – particularly because a substitution of export partners is easy in the case of highly competitive products.

It is only Norway which shows a more raw material-intensive export pattern compared with the other Western club members. But again a dependence on Russia cannot be determined: The "Russian Export Weights" are low and the principal Norwegian products exported to Russia are in no sense Norway's export champions.

The Baltic States, being the core members of the Eastern BSR club, also export machineries to Russia besides raw material-intensive products, especially beverages (SITC 11). The main difference to the Western BSR countries is that the "Russia Export Weight" of the main export commodity groups is mostly at the two digit level, in some cases up to more than 60% This means that some Baltic industries like beverages and special machineries are, at least potentially, highly dependent from Russian markets. The question arises whether these products could be also competitive on other world markets. Anyway, these industries do not dominate Estonian, Latvian and Lithuanian world exports.

The same is true for the "in between countries" Finland and Poland: The dependence from Russian markets for the principal export goods to Russia is higher compared with the Western BSR countries. Nevertheless, the "Russia Export Weighs" are lower than for the Baltic States, and the "World Export Shares" do not indicate prominent ranks in the export hierarchies – with the only exception of Finnish paper (SITC 64).

9 See pertinent time series in Schrader and Laaser (2015) and Laaser and Schrader (2016).

However, the analysis of the sectoral import patterns of BSR trade with Russia reveals a much higher degree of potential dependence from Russia as a trade partner (Table 3). Russia is an important supplier of energy products for the BSR countries as a whole. Energy products like petrol and natural gas clearly dominate the imports from Russia. Accordingly, large amounts of Russian petrol and products thereof (SITC 33) are shipped to the BSR countries; e.g. in the case of Finland The "Russia Import Weight" is about 60% and 59% of Finnish imports from Russia ("Russia Import Share") account for this commodity group. But again it has to be noted that Finland is not dependent from Russian petrol because the variety of suppliers on the world market facilitates export substitution. In this case Finnish total imports from Russia would shrink dramatically.

Short-term export substitution is also possible for most of the other raw material imports. The only exception is the import of natural gas (SITC 34) which is grid-bound and for this reason difficult to substitute. This problem affects BSR countries across the "club boundaries" – Germany, Finland, Poland and the Baltic States – although it is conceivable to find medium-term alternative suppliers, develop a new transport infrastructure and/or substitute natural gas by other energy sources. Even so, especially the Eastern BSR countries, including Finland and Poland, currently rely on natural gas from Russia – in 2015 Finland and Latvia imported about 100% of the natural gas needed from Russia.

Table 3. Main commodity groups in BSR trade with Russia in 2015

Country	Exports				Imports			
	SITC 2-digit	Russia export-share[a]	World export-share[b]	Russia export-weight[c]	SITC 2-digit	Russia import-share[d]	World import-share[e]	Russia import-weight[f]
DENMARK	74	13.4	6.6	1.8	33	51.5	5.8	14.9
	59	10.9	2.2	4.3	67	18.6	2.6	11.9
	72	9.1	3.4	2.3	32	6.3	0.2	46.5
	54	8.4	13.4	0.5	08	6.2	1.9	5.6
	87	5.9	2.6	2.0	79	4.8	2.9	2.7
ESTONIA	72	10.5	2.2	31.1	33	40.5	7.8	32.6
	74	10.0	3.1	21.4	34	14.4	1.2	78.6
	53	9.5	1.5	41.6	24	12.2	1.9	40.8
	11	8.6	1.3	44.3	67	5.8	2.9	12.6
	77	7.6	8.3	6.1	56	5.4	0.8	42.3
FINLAND	64	11.9	13.5	5.1	33	58.9	10.7	59.9
	74	8.0	5.5	8.4	34[h]	10.3	1.1	98.3
	72	7.1	6.4	6.4	51	6.4	1.9	37.3
	54	6.7	1.6	24.7	24	5.7	0.8	73.3
	57	6.0	2.0	17.7	32	2.5	0.7	40.7
GERMANY	78	14.4	18.1	1.4	33	52.2	5.6	27.0
	74	11.0	7.1	2.8	34[g]	30.7	3.0	31.7
	77	7.4	7.4	1.8	68	5.7	2.5	6.6
	72	7.2	3.9	3.3	32	2.5	0.5	15.5
	54	6.9	5.7	2.2	67	1.2	2.5	1.4
LATVIA	11	25.2	4.4	66.2	34	33.7	2.9	98.1
	74	11.8	2.7	49.8	67	19.2	3.7	43.8
	72	5.2	1.6	36.2	33	10.2	7.9	10.7
	29	4.6	1.4	5.8	56	8.9	1.2	60.9
	54	4.2	3.0	15.9	63	3.4	1.1	25.5
LITHUANIA	72	11.5	2.6	60.3	33	63.6	15.7	65.9
	74	11.0	3.5	42.8	34	14.6	3.1	76.4
	77	5.9	3.7	22.2	56	3.8	1.4	45.5
	11	5.1	1.1	60.5	27	3.1	1.2	43.5
	84	4.8	2.8	24.0	35	2.7	1.2	38.2
NORWAY	79	30.9	1.7	5.1	33	44.5	3.9	21.0
	67	13.2	1.5	2.5	68	11.3	1.2	17.5
	27	5.7	0.5	3.5	42	8.6	0.5	34.0
	74	4.8	3.0	0.5	52	7.7	0.9	15.2
	77	4.3	1.8	0.7	29	5.2	0.4	21.4
POLAND	74	7.7	3.5	6.2	33	60.2	6.1	69.8
	55	7.0	1.9	10.3	9	17.0	1.4	84.5
	77	6.6	7.7	2.5	34	2.6	0.4	45.6
	69	6.6	4.7	4.0	32	2.4	0.4	44.3
	72	6.3	1.7	10.6	67	2.3	4.1	4.1
SWEDEN	76	15.7	5.5	3.6	33	75.7	8.8	28.9
	78	13.3	11.6	1.4	52	10.7	1.2	31.4
	74	10.1	6.6	1.9	51	2.9	1.8	5.4
	71	9.1	4.3	2.6	32	1.6	0.2	22.2
	72	7.2	3.3	2.7	56	1.4	0.2	21.6

[a] Exports to Russia by commodity group in % of total exports to Russia. [b] Exports by commodity group in % of total exports to the world. [c] Exports to Russia by commodity group in % of total exports by commodity group. [d] Imports from Russia by commodity group in % of total imports from Russia. [e] Imports by commodity group in % of total imports from the world. [f] Imports from Russia by commodity group in % of total imports by commodity group. [g] The imports of unknown origin near-complete correspond to the German imports of natural gas (SITC 34) from Russia which share is 30.7% according to the Statistisches Bundesamt (2016). Hence, the Bundesamt import value of SITC-34 is used. [h] The foreign trade statistics of the Finnish Customs (Tulli 2016) report a share of 10.3% for SITC-34 which suggests that „unknown origin" based on Eurostat (2016a) mainly covers natural gas. Hence, the Tulli import value is used.

Sources: Eurostat (2016a); Statistics Norway (2016); Tulli (Customs Finland) (2016); Statistisches Bundesamt (2016b). – Own compilation and calculations.

The BSR trade with the UK also shows a heterogeneous picture but the weights are distributed in a different manner in this case. As regards the Western BSR countries, the UK is one of the most important trade partners. However, the sectoral patterns are diverging: Germany is the supplier of technology-intensive products again, with the focus on road vehicles, Germany's dominant export group (Table 4). By contrast, Denmark Sweden and Norway mainly appear as suppliers of raw material-intensive goods – the role Russia plays in BSR trade. The common denominator is that the "UK Export Weight" in the main commodity groups is relatively high for all the Western BSR countries. For Norway, the UK is even the principal export partner with 20% of Norwegian total exports flowing to the UK, especially petrol and natural gas. Compared with Russia, the UK is by far the more important destination for Western BSR exports. The UK exports of the "in between country" Finland this time closely resemble the exports patterns of its Nordic neighbors due to raw material intensity and the "UK Export Weight" of the main commodity groups – although Finland's overall UK export share does not achieve the Nordic level.

The UK also evolved to one of Poland's important export partner with a focus on machinery products, completed by labor- and raw material-intensive products among the main export groups. Despite some similarities with Poland, the Baltic States' export patterns are less technology-intensive, the focus is on labor- and raw material-intensive products. The sectoral patterns further mirror foreign direct investments which are supposed to serve Western markets (e.g. SITC 76 "telecommunication").

The BSR imports from the UK are less important, the import intensity is significantly lower than the export intensity. The UK's attractiveness as a trade partner rest upon its high purchasing power combined with deindustrialization during the past decades and a traditionally backward farming sector. Imports of machineries are relevant for all BSR countries, British petrol still plays a role for the Western BSR countries.

Table 4. Main commodity groups in BSR trade with the United Kingdom in 2015

Country	Exports				Imports			
	SITC 2-digit	UK export-sharea	World export-share[b]	UK export-weight[c]	SITC 2-digit	UK import-share[d]	World import-share[e]	UK import-weight[f]
DENMARK	01	10.1	4.4	14.7	33	10.2	5.8	7.9
	33	8.2	5.1	10.1	78	7.2	7.6	4.3
	54	8.2	13.4	3.8	89	5.9	4.5	6.0
	09	6.8	2.0	21.9	77	5.7	5.2	5.0
	03	5.5	3.8	9.0	76	5.3	3.8	6.3
ESTONIA	24	20.7	5.4	10.9	11	12.7	1.9	17.6
	76	15.1	11.7	3.6	72	12.0	3.0	10.7
	82	10.2	4.1	7.0	78	9.8	7.5	3.5
	81	7.3	3.4	6.1	77	9.6	9.9	2.6
	77	7.3	8.3	2.5	89	8.5	4.2	5.4
FINLAND	64	26.7	13.5	10.1	78	14.9	7.7	6.2
	33	15.9	6.7	12.3	79	8.0	4.5	5.7
	24	7.1	3.1	11.7	54	7.8	3.7	6.8
	68g	5.4	3.5	7.9	74	5.0	4.6	3.5
	72	4.5	6.4	3.6	77	4.9	5.9	2.7
GERMANY	78	31.9	18.1	13.1	79	10.0	4.0	10.7
	54	7.9	5.7	10.3	54	9.2	4.5	8.8
	77	5.0	7.4	5.0	78	8.6	9.1	4.0
	74	4.7	7.1	5.0	33	7.3	5.6	5.5
	89	3.5	3.5	7.5	77	6.6	7.6	3.7
LATVIA	24	52.3	9.7	26.7	11	21.6	3.3	15.4
	63	13.8	5.5	12.5	75	5.9	2.0	6.9
	76	3.3	8.7	1.9	76	5.6	7.1	1.8
	69	2.6	3.4	3.8	72	4.7	3.3	3.4
	89	2.6	0.6	3.3	89	4.6	4.4	2.4
LITHUANIA	33	22.5	15.8	6.4	65	6.8	2.3	9.0
	82	12.9	6.0	9.6	75	6.5	1.7	11.7
	56	10.4	4.0	11.7	87	6.5	1.5	13.1
	84	5.6	2.8	9.1	74	6.4	3.7	5.2
	89	4.1	3.7	4.9	77	6.2	4.0	4.6
NORWAY	33	47.8	29.1	33.0	72	12.6	4.2	19.2
	34	35.1	28.0	25.2	74	10.4	5.5	12.2
	03	2.8	8.6	6.6	78	9.8	10.2	6.1
	68	1.9	5.2	7.3	87	9.0	2.8	21.0
	72	1.5	2.1	14.1	69	5.3	4.7	7.1
POLAND	78	14.0	10.7	8.8	78	13.9	8.0	5.0
	77	8.7	7.7	7.7	89	7.6	4.4	5.1
	82	6.1	5.1	8.0	51	6.2	1.9	9.6
	76	6.0	4.8	8.4	54	5.5	2.8	5.8
	01	5.5	2.6	14.2	77	4.6	7.2	1.9
SWEDEN	33	22.6	5.8	27.7	78	15.2	10.9	7.7
	78	10.6	11.6	6.5	33	10.8	8.8	6.7
	64	9.5	6.3	10.8	89	6.0	4.4	7.5
	24	6.5	2.2	20.7	67	5.2	2.8	10.2
	54	5.1	6.0	6.0	54	4.9	2.9	9.5

[a] Exports to the UK by commodity group in % of total exports to the UK. [b] Exports by commodity group in % of total exports to the world. [c] Exports to the UK by commodity group in % of total exports by commodity group. [d] Imports from the UK by commodity group in % of total imports from the UK. [e] Imports by commodity group in % of total imports from the world. [f] Imports from the UK by commodity group in % of total imports by commodity group. [g] Based on Finnish trade data (Tulli 2016) . [a] Exports to the UK by commodity group in % of total exports to the UK. [b] Exports by commodity group in % of total exports to the world. [c] Exports to the UK by commodity group in % of total exports by commodity group. [d] Imports from the UK by commodity group in % of total imports from the UK. [e] Imports by commodity group in % of total imports from the world. f Imports from the UK by commodity group in % of total imports by commodity group. g Based on Finnish trade data (Tulli 2016) .

Sources: Eurostat (2016a); Statistics Norway (2016); Tulli (Customs Finland) (2016). – Own compilation and calculations.

4. BSR trade viewed from a gravity perspective

The results so far reveal some features that remind to common characteristics of trade relations: large and/or rich markets are easily attracting trade flows, while small and/or poor markets are much less attractive. At the same time, short distances do not hamper trade as much as longer ones do. This suggests that applying a technique to BSR trade which is commonly used in trade analyses: a gravity model.

4.1 Some methodological remarks

Gravity models are often used in trade and integration analyses to assess the shaping forces of international trade flows. They assume that gravitational forces to undertake economic interaction stem from high incomes or population figures of trading partners, because these features promise high revenues from business deals with numerous well-funded clients. But transaction costs which may vary with distance can be expected to impede the impact of the gravitational forces on the intensity of trade relations. Various forms of distance may be relevant, not only real geographical distances as a proxy of transportation costs, but also "virtual distances" as exerted by tariff- or non-tariff-trade barriers, different languages, diversities in business cultures, traditions or economic systems. Gravity models date back to Linder (1961), Tinbergen (1962) and Linnemann (1966), but have been further developed over time and remained a common tool not only for trade but also for transport analyses.

In this contribution an uncomplex double-log specification is deployed and performed by pooled OLS regression for the period 2000 to 2015. Dependent variable are logs of trade flows T_{tij}, either exports X_{tij} or imports M_{tij}, of each of the reporting countries:

$$\ln T_{tij} = Const + \beta_1 \ln GDP_j + \beta_2 \ln PCI_j + \beta_3 \ln DIST_j + \sum^{k} \delta_k DUM_k + \varepsilon$$

with subscript t indicating the year of observation (2000 to 2015), i the reporting country, j the respective bilateral trading partner, k the enumerative index of country dummies, and ε is representing the error term.

The reporting countries *i* in our model are all 28 (still) member states of the EU,[10] the trading partners *j* are 194 countries worldwide for which data for the independent variables GDP, the per-capita-income PCI[11] and bilateral distance DIST as main shaping forces could be collected. The group of dummy variables k (= 1, if the inherent condition is met, and =0 otherwise) consists of the variable CONTIG (=1, if *i* and *j* share a common land border), various EU entities (EU15 without UK and DE/Germany, UK and DE for the latter two countries,[12] the new EU-members of 2004, the new EU-members of 2007 and 2013), and RUS for Russia and CIS–RUS for the rest of the Commonwealth of Independent States (CIS) eventually trading via Russian links. The data – in sum 86,912 observations – have been obtained from Eurostat (2016a) for trade data, World Bank (2016) for GDP and PCI data, Deutsche Bundesbank (2016) for exchange rates to translate the Eurostat trade figures to USD, and Mayer and Zignago (2011) for distances and information on common borders.

10 Norway and Russia are excluded from this analysis as reporting countries, because the large trade data set has been collected from Eurostat (2016a) data. Russia is not reporting to Eurostat, while Norwegian trade data available at Eurostat lag behind the actual edge.

11 It should be noted that gravity models can be calculated either with variables GDP and PCI or GDP and population POP or alternatively with PCI and POP, because PCI = GDP/POP (see Laaser and Schrader 2005:, p. 19, footnote 7).

12 The UK has been singled out as one of our objects of observation, and Germany as the dominant exporter and importer in the subsample of BSR-EU-members.

After calculating this model separately for exports and imports, the numerical variables GDP, PCI, and DIST represent the average attracting forces of market size GDP and individual wealth PCI as well as the average hampering force of distance, while the coefficients of the country dummies represent the specific attitude to the partner markets *j* for the whole observation period. In a second step, predicted export and import values are calculated from these "average" equations and subtracted from the real values. The positive or negative differences (residuals) for the individual reporting countries *i* and the highlighted trading partners *j* indicate, whether reporting country *i* is trading with partner *j* more intensely in the respective year or less than the average in the sample. Thus, particular affinities are displayed, and we can identify the intensity of trade with Russia and the UK in the period 2000-2015.

4.2 Gravity estimates for the EU28 as benchmark

Table 5 shows the results of the export gravity equation. The first five numerical variables define the average attracting forces of market size and wealth on export flows and the impeding influence of distance between exporter and destination: GDPs both of reporting and partner countries play the dominant role, a high coefficient above/close to 1 which is highly significant at the 1% level[13] indicates that large markets dominate trade flows. The per-capita-incomes are not equally relevant: that of the reporter is small but significant, and that of the partner is even totally insignificant. Apparently, on average the EU28 members are exporting also to less wealthy countries. At the same time, the highly significant distance coefficient of nearly 1.2 indicates that distance is in fact hampering trade flows of European countries to a non-negligible extent. The CONTIG dummy indicating the trade-enhancing influence of a common land border exhibits a non-negligible and highly significant value. It should indeed be high in this context because the EU28 members are trading intensively with each other via a great variety of common land borders.

For European exporters as a whole the value of the UK dummy, still significant at the 5% level, is higher than the smaller RUS value which is even totally insignificant. This means in the context of the model that European countries are exporting definitely a bit more intensely to the UK than British GDP and PCI as well as the distance between the UK and the exporter would suggest. In contrast, the coefficient of the RUS dummy seems to be zero – European trade relations with Russia are thus on a level which can be expected from Russia's market size and distance from Europe. Hence, the UK seems to be more important as an export destination for Europe than the Russian market. However, the coefficient for the rest of the CIS is positive and significant. This might raise again the relevance of Russia via the intense CIS trade integration. But given the economic dominance of Russia over the rest of the CIS the direct impact of Russia should be greater. In sum, the data suggest that the Brexit might do more harm to European exports than the Russian crisis so far.

13 A value of 0.000 < Probability < 0.009 in the last column indicates statistical significance at the 1% level, i.e. with an error probability of 1% the coefficient in the second column is not zero. 0.010 < Probability < 0.049 indicate significance at the 5% level, 0.050 < Probability < 0.099 at the 10% level. Any probability beyond means insignificance, i.e. the coefficient of the variable tends to be zero and the variable has no influence on the result.

Table 5. Export gravity estimates for the EU28 countries in 2000–2015

Dependent variable: lnXd[a]	Coefficient β	Standard Error	t-Value	Probability>t
$lnGDP_i$ (Reporter)	1.1649	.0046	252.62	0.000
$lnPCI_i$ (Reporter)	.0315	.0099	3.18	0.001
$lnGDP_j$ (Partner)	.9333	.0038	246.70	0.000
$lnPCI_j$ (Partner)	.0055	.0054	1.02	0.308
$lnDIST_{ij}$	–1.1817	.0099	–119.10	0.000
CONTIG	.6481	.0349	18.59	0.000
EU15–UKDE	.1784	.0222	8.03	0.000
UK	.1122	.0481	2.33	0.020
DE	.2723	.0574	4.74	0.000
EUNew2004	.6632	.0234	28.38	0.000
EUNew200713	.3551	.0309	11.48	0.000
RUS	.0667	.0513	1.30	0.193
CIS–RUS	.2167	.0272	7.96	0.000
_cons	–26.8817	.1614	–166.51	0.000

Number of obs = 73626; F (13, 73612) = 19117.94; Prob.>F = 0.0000; R-squared = 0.7860; Root MSE = 1.6918.

[a] Exports of reporter i to partner j in USD.

Sources: Eurostat (2016a); World Bank (2016), Deutsche Bundesbank (2016); Mayer and Zignago (2011). – Own compilation and calculations.

The same procedure – again for the EU28 trade flows as a whole – is applied to imports. The results are displayed in Table 6. All independent numerical and dummy variables included are statistically significant at the 1% level. The numerical variables behave as expected. It is remarkable that the distance coefficient is much smaller for imports than it is for exports, i.e., the hampering impact of distance is less important for imports to Europe than for its exports.

All dummy variables – CONTIG and the various country (group) dummies – show positive coefficients, some even of remarkable size, and they are statistically significant at the 1% level. The EU28 countries are importing more from the selected partners than it would be suggested by both trading partners' market size and the mutual distance between them. However, the comparison of the values of the Russian and UK dummies is most interesting. For European imports, trade flows from Russia appear to be definitely more important than those from the UK – the RUS coefficient has a size of more than twice as high as the UK one. The reason is the impact of energy sources: particularly natural gas and petroleum, as already analyzed in Section 3.2.

Table 6. Import gravity estimates for the EU28 countries in 2000–2015

Dependent variable: lnMd [a]	Coefficient	Standard Error	t-Value	Probability>t
$lnGDP_i$ (Reporter)	1.3358	.0069	193.89	0.000
$lnPCI_i$ (Reporter)	–.6106	.0159	–38.53	0.000
$lnGDP_j$ (Partner)	1.2340	.0052	235.84	0.000
$lnPCI_j$ (Partner)	–.0743	.0083	–8.99	0.000
$lnDIST_{ij}$	–.7534	.0145	–51.98	0.000
CONTIG	1.1146	.0445	25.07	0.000
EU15–UKDE	1.4920	.0311	47.92	0.000
UK	.4749	.0576	8.24	0.000
DE	1.1110	.0576	19.29	0.000
EUNew2004	2.1608	.0315	68.64	0.000
EUNew200713	1.5089	.0418	36.12	0.000
RUS	1.213	.0649	18.67	0.000
CIS–RUS	.5242	.0449	11.68	0.000
_cons	–36.2349	.2242	161.57	0.000

Number of obs = 69949; F (13, 69935) = 15584.84; Prob.>F = 0.0000; R-squared = 0.6867; Adj R-squared = 0.6867; Root MSE = 2.5209.

[a] Imports of reporter i from partner j in USD.

Sources: Eurostat (2016a); World Bank (2016), Deutsche Bundesbank (2016); Mayer and Zignago (2011). – Own compilation and calculations.

4.3 How Russia and the UK determine BSR trade

The results of the gravity estimates for the EU28 trade can be used for identifying the determinants of the BSR countries' trade. For this purpose, a comparison of the real trade figures with the calculated figures from the equation results in Table 5 and Table 6 is performed in the following.

If we take the results of the coefficient estimates displayed in Table 5 and Table 6 as the baseline of trading links of European countries, we can calculate their hypothetical exports and imports, assuming that the average values in the coefficients would be valid for all individual observations of trade flows. If we subtract the logs of these hypothetical exports / imports from the logs of the real trade flows, these "residuals" show in how far the pertinent trade flow follows the European average or is more or less affected. If they are positive then reporting country *i* exports / imports more to / from partner country *j* than the average, and vice versa for negative residuals. Thus countries with positive residuals, particularly over a longer time-span, would be more affected of disturbances in the pertinent trade link than others with smaller or even negative residuals, and differences in size indicate higher or lower affectedness.

Table 7 displays the results of this calculation. It shows the residuals of the eight included BSR countries regarding trade links to Russia and to the UK. As space is limited, only four years have been chosen: 2000, 2006, 2012 (before the Russian crisis), and the most recent year 2015.

Table 7. Residuals of BSR trade with Russia and the UK in 2000, 2006, 2012, and 2015[a]

Reporter	Denmark	Estonia	Finland	Germany	Latvia	Lithuania	Poland	Sweden
Residual	**Exports**							
Russia 2000	+.5880	+1.3067	+.9909	+.5582	+.9452	+1.4580	n.a(b)	–.0968
UK 2000	+.6375	+1.7208	+1.5302	–.8185	+2.1287	+1.6433	n.a(b)	+1.0689
Russia 2006	–.1463	+1.0625	+.4531	+.3380	+.7647	+1.1463	–.2720	–.4497
UK 2006	–.0220	+.4909	+.5925	–1.2432	+.8898	+.7389	+.0202	+.2974
Russia 2012	–.7689	+.9888	–.4875	–.0103	+.9498	+1.1991	–.6332	–1.0788
UK 2012	+.0210	+.4979	+.0927	–1.2769	+.3641	+1.4256	+.2810	+.2030
Russia 2015	–1.1712	+.5494	–.7418	–.2913	+.7954	+1.1500	–.7570	–1.3047
UK 2015	–.5417	+.4146	–.1440	–1.3381	+.6542	+.8333	+.2486	–.1370
	Imports							
Russia 2000	+.2968	+1.9125	+1.0895	+.5738	+1.3620	+2.1456	n.a(b)	+.3171
UK 2000	+.9963	+1.0373	+1.1186	–.7731	+.2946	+.8440	n.a(b)	+1.1816
Russia 2006	–.6743	+1.1714	+.2431	–.2803	+.0835	+1.1326	–.9017	+.1052
UK 2006	+.2462	+.7040	+.5408	–1.2654	+.0375	+.3544	–1.0419	+.4784
Russia 2012	-1.8137	–.1004	–.3861	–.8594	–.4094	+.8663	–1.1702	–.3061
UK 2012	+.1756	+1.4145	+.1025	–1.3000	+.3990	+.4895	–1.0077	+.5286
Russia 2015	–.7333	–.04454	–.5736	–.9055	–.1695	+.6445	–1.3360	–.4702
UK 2015	–.2506	+.6939	–.2276	–1.6738	+.1519	+.5113	–1.0544	+.0450

[a] Logs of real Exports to / Imports from Russia / UK minus logs of calculated exports/imports from the equations in Tables 5 and 6. (b) In 2000 Poland did not yet report to Eurostat, and has not provided retrospective data after accession in 2004 as other new members as Estonia, Latvia, and Lithuania have done.

Sources: Eurostat (2016a); World Bank (2016), Deutsche Bundesbank (2016); Mayer and Zignago (2011). - Own compilation and calculations.

Some of the results are predictable, some others are striking. Beginning with the Nordic countries, it is plausible that both Denmark and Sweden exhibit higher positive UK-residuals (or lower negative residuals) than Russian residuals for exports as well as for imports in all years. In case of both countries the results indicate that the UK is clearly the more important trading partner. Any "hard Brexit" would affect them much more than the Russian crisis has done so far. The same seems to be true for Finland, although the actual export and import shares (Table 2) are higher for Russia. But only the import residuals of 2000 in Table 7 are more or less identical, while in all other cases the UK residual is higher or less negative. It helps to explain this result if Finland's location is considered, i.e. the proximity to Russia and the medium term distance to the UK, as well as the average shaping forces of European trade flows given by the equations. Controlling in this way for Finland's neighborhood to Russia, a "hard Brexit" wood hurt the country, too, as it is true for its Western Scandinavian Neighbors.

The results for the three Baltic States indicate that they do not behave as a group. The only common feature is the dominance of the UK export-residual in 2000. In that year the three Baltic States were exporting more than proportionally to the UK compared to the European average; the same was true for exports to Russia, but to a lesser extent, as the lower RUS residual indicates. For Estonia, this picture changed from 2006 on. Only in the most recent year both residuals converged again so that the dependence on the Russian market for Estonian exports began to decline. Latvia was leaning on the UK still in 2006, but in 2012 and 2015 Russia was dominating as export destination, although in 2015 the difference between the Russia and UK residual declined, too. In contrast, Lithuania exhibits higher RUS values with the exception of 2012, with an increasing difference in 2015. Hence, its position as strongest exporter to Russia in the EU28 is corroborated by these calculations. On the import side, Estonia and Latvia apparently managed to curb their dependence on Russian

imports which had been still visible in 2000 and 2006. The newer values of 2012 and 2015 indicate more than proportional imports from the UK, while imports from Russia were less than proportional compared to the European average, given the individual countries' market size and location. Lithuania again behaved differently: Russian imports dominated the time series throughout the observation period. For all the Baltic States, the UK export and import residuals have been positive during the whole observation period. This means that even these countries have something to lose if a "hard Brexit" would occur.

Poland shows a much higher degree of dependence on exports to the UK, because all UK export residuals are clearly positive while Russian residuals are all negative. Again, it joins the Nordic fraction of potentially Brexit-hurt countries. In contrast to the unweighted view on import shares the gravity analysis also shows at least a slight dominance of imports from the UK, as all UK import residuals are negative, but are closer to zero than the Russian residuals with the exception of 2006.

Germany turns out to be a special case. Although the shares of exports to and imports from Russia is definitely much lower than UK shares (Table 2), the gravity analysis shows that Russian residuals are either positive or at least less negative than the U.K. residuals for both exports and imports. In the first years of the observation period Germany was trading with Russia more than proportionally compared to the European average (as market size and location would suggest). This changed in the years after 2006: Russian residuals became more and more negative. In contrast, German UK residuals were significantly negative during the whole period. One is inclined to conclude from a synoptic view on both shares and residuals for Germany: Shares tell us that Germany clearly has to lose from a "hard Brexit", and residuals tell us that it might turn out worse, if only the gravitational forces governing European trade flows would dominate.

5. The perspectives of BSR trade

The analysis of the international trade relations in the Baltic Sea Region reveals that the Baltic Rim countries are integrated in a number of different ways into the international division of labor. Today's heterogeneity of the BSR countries becomes obvious in the light of challenges by the Russian economic crisis and the sanctions in the course of the Ukraine conflict as well as by the looming Brexit. By analyzing these incidents, the BSR can still be separated into two clubs: a Western club with the Scandinavian countries Denmark, Norway and Sweden as well as with Germany, and an Eastern club with the core members Estonia, Latvia and Lithuania, and also with Russia as member. Finland and Poland appear to be "countries in between" having partly closer links both to Russia and the UK. The BSR is not a homogeneous area of trade integration, but it is shaped by diverging path dependencies. Against this backdrop the Western BSR club would be much more affected by a "hard Brexit" than the Eastern club which did not develop comparably close trade relations with the UK. In the case of trade with Russia, the former Soviet division of labor and the integration into the former Council of Mutual Economic Assistance still has an impact on the Eastern BSR countries' trade relations. Even Finland's traditional role as an "in between country" is not surprising in view of its close neighborhood to Russia.

But the importance of these traditional trade relations is diminishing in the era of globalization. Even Russian energy exports lost a lot of its importance. The substitution of suppliers and sources has been facilitated in the course of globalization. All the Baltic Rim countries have realized that regional integration is only second best compared to the integration into global markets.

The Baltic Sea neighbors have in common that their focus of trade integration is not the tiny Baltic Sea Region. In the era of globalization the gravitational forces of large and wealthy markets even in far distant regions rather determine the BSR trade flows. The Baltic Sea serves as a bridge or connecting link between regions, it does not appear as an internal market of its own with above the average trade relations between the Baltic Rim countries. Already in the Middle Ages the trade association of the "Hanse" was not solely focused on intra-BSR trade, but linked far distant trade regions with each other. Following this tradition the Baltic Rim countries should be advocates of free trade agreements promoting the removal of barriers to trade.

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Appendix

Box 1: Selected Commodity Groups of the Standard International Trade Classification (Rev.4)	
SITC	
01	Meat and meat preparations
03	Fish, crustac., molluscs and prep. Thereof
08	Feeding stuff for animals
09	Miscellaneous edible products
11	Beverages
24	Wood, lumber and cork
27	Crude fertilizers and crude minerals
29	Crude animal and vegetable materials
32	Coal, coke and briquettes
33	Petroleum, petroleum products
34	Gas , natural and manufactured
35	Electric current
42	Fixed vegetable fats and oils, crude, refined or fractionated
51	Organic chemicals
52	Inorganic chemicals
53	Dyeing, tanning and colouring materials
54	Medicinal and pharmaceutical products
55	Essential oils and resinoids etc.
56	Fertilizers
57	Plastics in primary forms
59	Chemical materials and products, n.e.s.
63	Cork and wood manufactures
64	Paper, paperboard and manufact. thereof
65	Textile yarn, fabrics, made-up articles
67	Iron and steel
68	Non-ferrous metals
69	Manufactures of metals, n.e.s.
71	Power generating machinery and equipment
72	Machinery for special industries
74	General industrial machinery and equipment
75	Office machines, data processing machines
76	Telecommunications apparatus and equipment
77	Electrical machinery and apparatus
78	Road vehicles
79	Other transport equipment including ships
81	Prefabricated buildings
82	Furniture and parts thereof
84	Articles of apparel and accessories
87	Professional and scientific instruments
89	Miscellaneous manufactured articles, n.e.s.
9	Commodities and transactions not classified elsewhere in the SITC

Source: United Nations (2017); own compilation.

Logistics and transport in the Baltic Sea region

Lauri Ojala

Executive summary

The transport sector in the BSR is significant even in a European context: out of EU-28 total, the transport sector in BSR EU Member States accounts for 27% of all transport and logistics enterprises (311,000 in the BSR), 33% of the turnover (€450 billion), and 34% of employees (10.5 million).

Transport infrastructure investment in Norway is 2 to 2.5 times higher per capita compared to other Nordic countries, and almost 5 times higher compared to all other BSR countries. In Denmark, Sweden, Finland and Germany the expenditure is at USD 250 to USD 450 per capita, while in other BSR EU Member States and Russia per capita expenditure is around USD 200, with Poland having the highest GDP share of transport infrastructure investments using the 5-year average figures for 2010-2014.

Norway's per capita transport sector emissions of CO2 (about 28 tonnes/capita) appear to be the highest in the BSR, while the transport sector's share of all CO2 emissions is the highest in Sweden (over 50%).

Germany (worldwide 1st) and Sweden (3rd) were at the top of World Bank's Logistics Performance Index (LPI) 2016, followed by Finland (15th), Denmark (17th) and Norway (22nd) out of 160 countries surveyed. Russia was ranked 99th and Belarus 120nd, roughly the level which these two counties have persistently occupied in the LPI. Other BSR countries are found between ranks 29 (Lithuania) and 43 (Latvia).

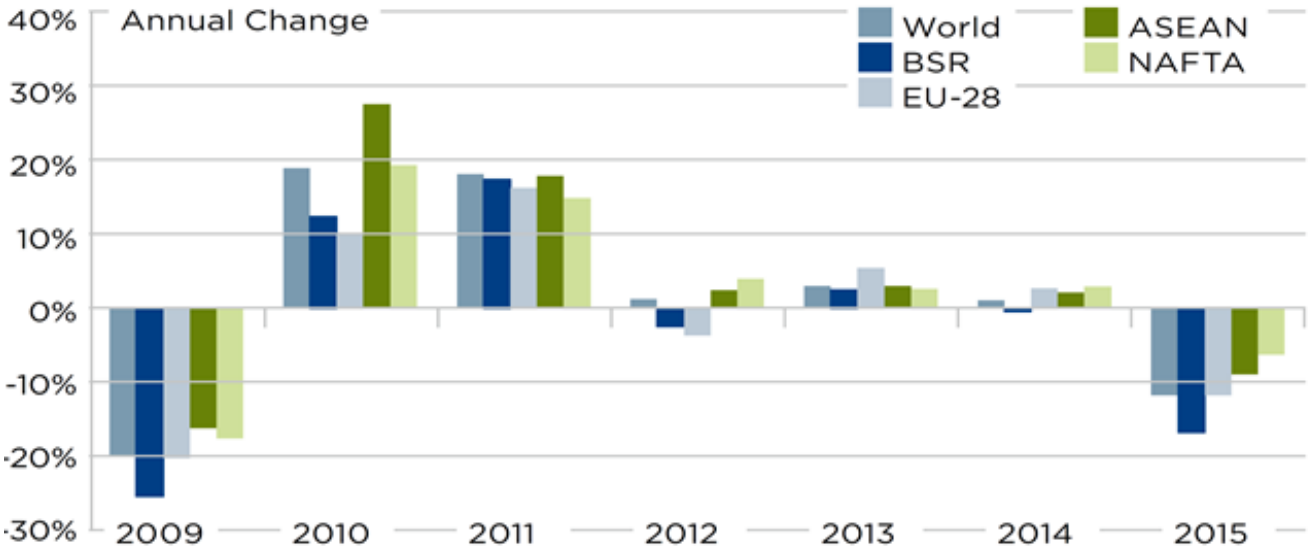
In the novel Air Trade Facilitation Index (ATFI) and E-Freight Friendliness Index (EFFI), which measure the service performance level of air freight, the top three countries are Sweden, Finland and Denmark, while Russia and Belarus occupy very low ratings. These findings are in line with, for example, the LPI.

The BSR EU member States occupy the whole spectrum in the EU Transport Scoreboard 2016, which is a comprehensive transport sector composite indicator launched by DG MOVE at the European Commission. It covers the following four policy areas: 1) Internal Market; 2) Investment and Infrastructure; 3) Energy Union and Innovation; and 4) People. Out of EU-28, Sweden is rated 2nd, followed by Germany (3rd), Finland and Denmark (both 5th), Estonia (9th), Latvia (13th) and Lithuania & Poland (both 22nd).

1. Introduction

Demand for logistics services is always derived demand. This means that the actual transport performance typically measured in tonnes or tonne-kilometres reflects the level of overall economic development. Furthermore, the impact of changes of economic activity – and especially those of merchandise trade – is typically amplified in logistics services, i.e. logistics demand changes more than that of economic activity. The logistics markets in the Baltic Sea Region is no exception to this general principle.

Figure 1. Annual growth of export value 2009-2015 in the World, EU-28 and the Baltic Sea Region[1]



Source: Ketels & Pedersen 2016; data source WTO 2016.

In the big picture, the relative share of the Baltic Sea Region of world trade has been declining since 2008, when the BSR's share of services trade peaked at about 6.4% of world total, and had remained at 5.0% during 2005-2008. In 2015, by contrast, these relative shares had fallen to about 5.2% for services trade, and 4.8% for merchandise trade, respectively (Ketels & Pedersen 2016, 22).

The volume of merchandise trade of the BSR countries, measured in monetary terms has barely reached the pre-crisis level of 2008, and the volume has, in fact, decreased significantly in 2015 compared to the year before (Figure 1). The developments in 2016 have shown no significant overall improvement despite the growing economies especially in Sweden and Germany. By contrast, the economic and political uncertainties with respect to Russia affect BSR transport and logistics significantly, especially for transit and transshipment cargoes.

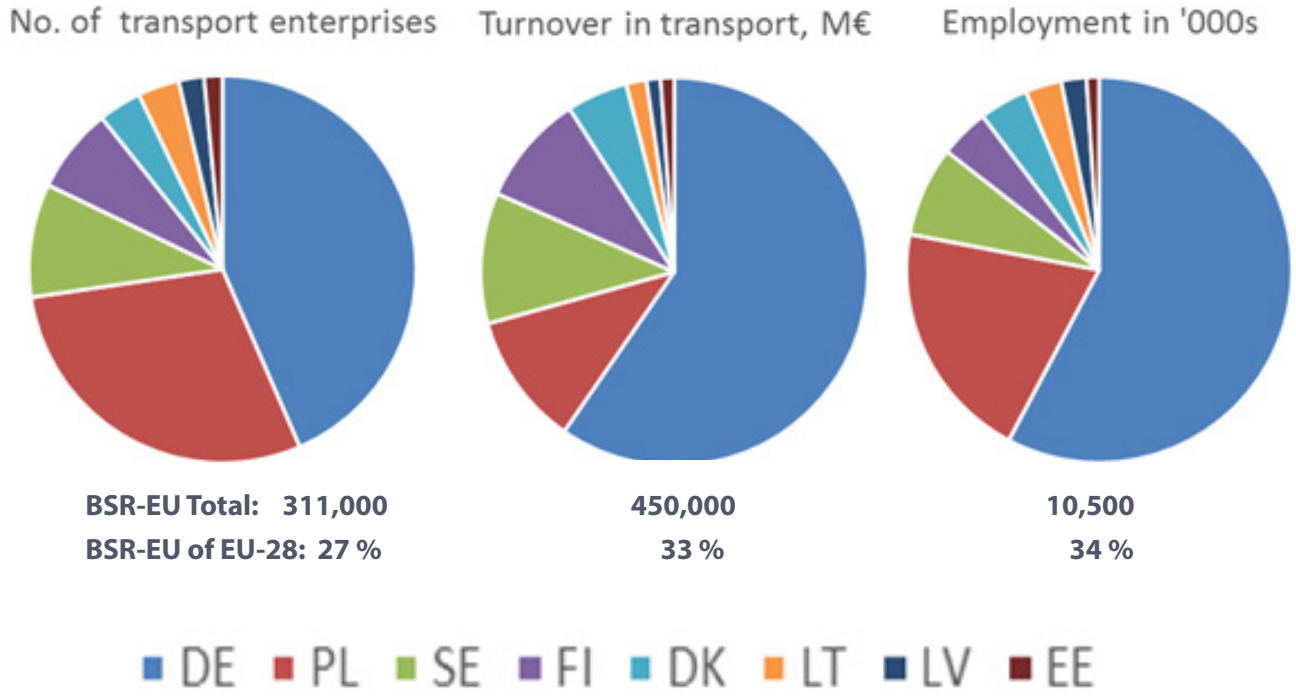
2. Outline of the transport and logistics sector in the Baltic Sea region

2.1 Transport and logistics sector in BSR countries

The BSR has a significant transport sector mainly thanks to the very large transport and logistics industry in Germany. Many BSR-based logistics firms serve also markets well beyond the region, and some are operating also globally, such as the German-based DHL and DB Schenker, and the Danish A.P. Moller Group, and especially its Maersk container shipping activities.

1 Here, the BSR includes Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden as countries, and northern Germany, northern Poland and most parts of Russia's Northwestern Federal District (for a more detailed definition, see Ketels & Pedersen 2016).

Figure 2. Size of the transport sector in Baltic Sea Region EU Member States[2]



Source: Eurostat 2016.

Out of EU-28 total, the transport sector in BSR EU Member States account for 27% of all transport and logistics enterprises, 33% of the turnover, and 34% of employees, as indicated in Figure 2. A more detailed breakdown by type of service and country for the BSR EU Member States for year 2013, which is the latest available EU statistics on these indicators is given in Appendix 1.

In road transport of freight and passengers in 2013, Poland had the most enterprises providing these services out of BSR EU countries. In all other sectors and types of service provision, Germany was clearly the largest "player", with the exception of sea transportation, where Danish firms employed an equal number of seafarers than those in Germany; the turnover in sea transport was almost as high, too (Appendix 1).

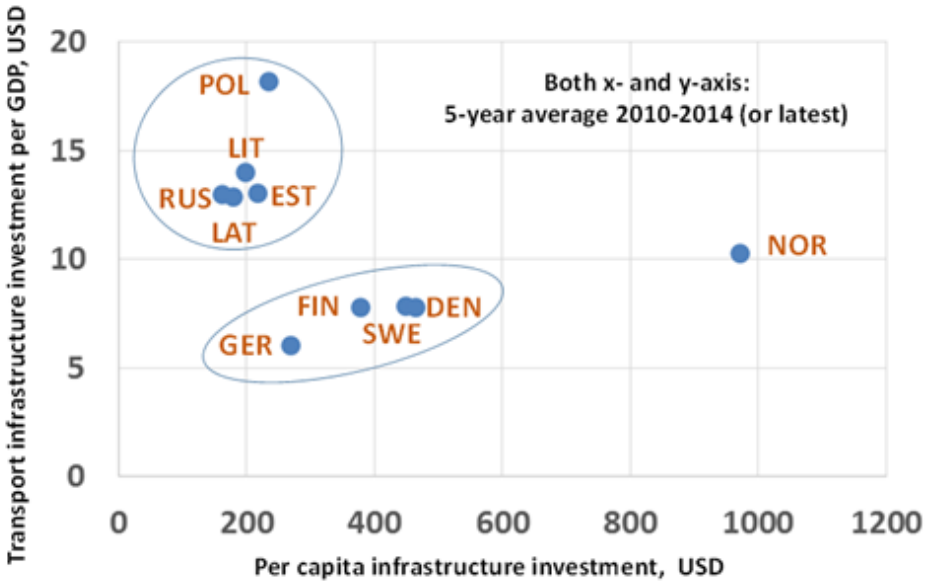
2.2 Indicators of transport sector investments, emissions and modal shares in the BSR

The International Transport Forum, a transport sector "think tank" of the OECD, released a new visualisation tool of selected sectoral data series of ITF member countries on March 8, 2017 (ITF 2017). The tool makes it possible to compare trends across countries, create rankings or show data on a map. 19 indicators for more than 50 countries cover topics including CO2 emissions, road safety, infrastructure investment, modal shares and the transport network.

The data is provided by national statistical offices and/or transport authorities, and the dataset includes also data from a number of non-OECD countries such as Russia and Belarus. Some selected indicators from the ITF tool are presented in this section.

2 Here, the BSR EU Member States data is for the whole country.

Figure 3. Transport infrastructure investments per GDP and per capita in USD in BSR countries as 5-year average per annum[3]



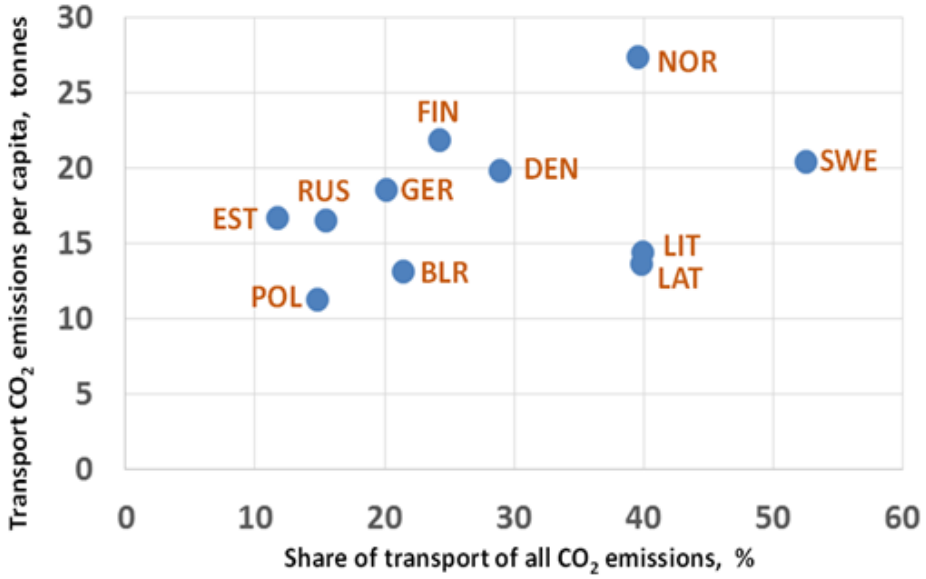
Source: ITF 2017.

When considering the latest available data for a 5-year period on transport infrastructure investment, the BSR countries tend to appear in two clusters (Figure 3). Norway is an outlier with 2 to 2.5 times higher per capita expenditure compared to other Nordic countries, and almost 5 times higher compared to all other BSR countries. However, given its very high GDP in real terms, this burden falls in the middle range among BSR countries. Denmark, Sweden, Finland and Germany comprise one cluster, where the expenditure is at USD 250 to USD 450 per capita, and between values 5 and 10 on the X-axis. Other BSR EU Member States and Russia form a second cluster, where the per capita expenditure is around USD 200 and between 13 to 18 units along the x-axis, with Poland having the highest GDP share of transport infrastructure investments.

Figure 4 is a cross-tabulation of transport sector's share of all CO2 emissions and CO2 emissions per capita in tonnes for both passenger and freight transport. Norway is above other countries in per capita emissions, possibly due to a rather high share of domestic air transport, while the transport sector's share of all CO2 emissions is the highest in Sweden.

3 Data is for the whole country, and refers to investment expenditure in inland transport infrastructure (rail, road and inland waterways). Expenditure includes new construction and extension of existing infrastructure, incl. reconstruction, renewal and major repairs of infrastructure, but excludes maintenance expenditures. X-axis: investments in 1,000 units of GDP in current USD, and y-axis: investments in current USD per capita.

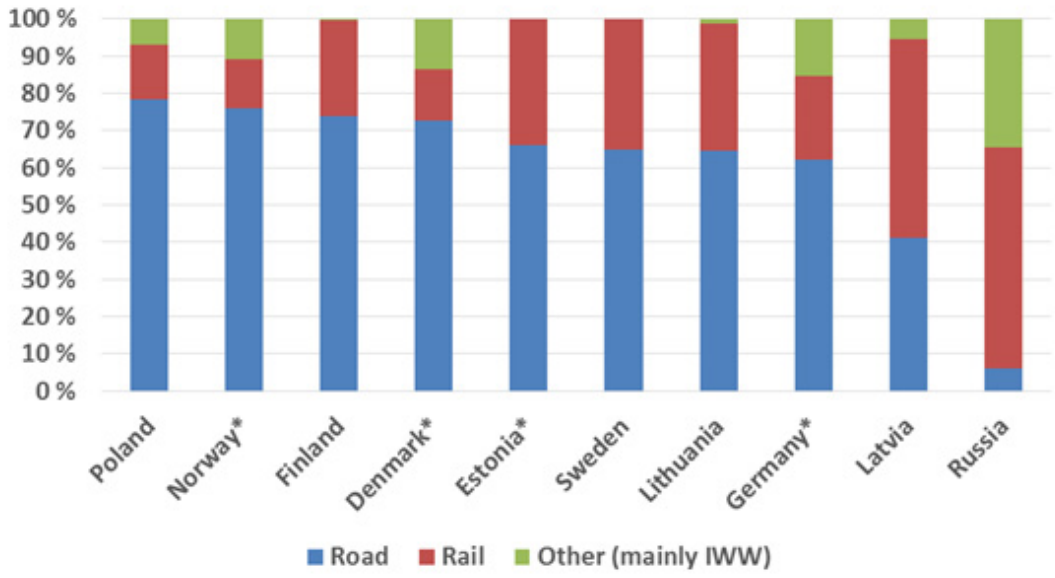
Figure 4. Transport sector's share of all CO2 emissions in per cent (x-axis), and transport sector CO2 emissions per capita in tonnes (y-axis)



Source: ITF 2017.

Figure 5 illustrates the modal share in inland freight transport, where road transport dominates with over 60% in all other BSR countries except Latvia and Russia. In the two latter, rail transport has a significant share, and in Russia, inland waterway transport accounts for approximately 1/3.

Figure 5. Modal shares in inland freight transport[4] in BSR Countries in 2014 (*) or 2015



Source: ITF 2017.

4 Share of inland freight transport. Inland freight transport is any transport of goods using a railway vehicle, a road motor vehicle or a vessel on a given railway network, on a given road network or on navigable inland waterways (IWW) respectively.

2.3. Some key indicators of competitiveness and logistics performance in the BSR

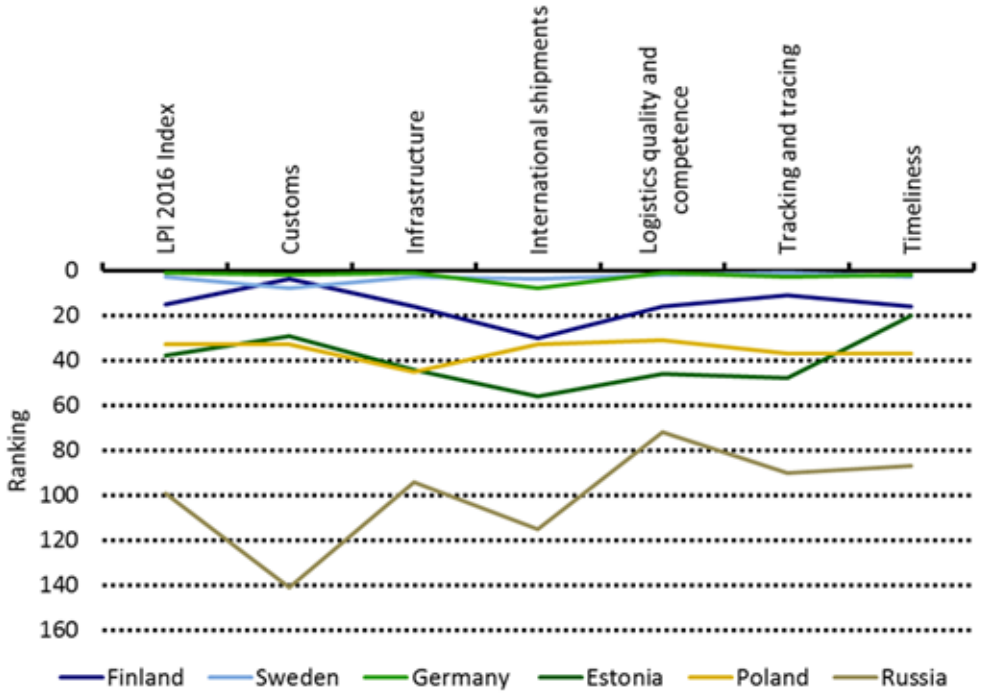
Table 1 summarises the latest available rankings of selected BSR countries in a number of key competitiveness and logistics performance indicators. This provides useful information on the operational and business environment in the region also from logistics operations point-of-view.

Logistics Performance Index (LPI) that has been published since 2007 by the World Bank compares countries from the point of view of logistics performance. The LPI is based on a worldwide survey among logistics and freight forwarding professionals, and it is a robust indicator measuring countries performance in trade logistics. In essence, it provides a collective understanding on how "easy" or "difficult" it is to organize import and export shipments to a certain country, especially for manufactured goods using unitized transport, such as road, rail or air freight (Arvis et al. 2016).

In the latest LPI 2016, Germany was again ranked first in the overall LPI, and the four Nordic countries (SE, FI, DK, and NO) were all among the top 22 of the surveyed 160 countries. Also Lithuania (29th), Poland (33rd), Estonia (38th) and Latvia (43rd) were well placed, whereas Russia (99th) and Belarus (120th) were clearly lagging behind in this respect. The consistently low scores, and consequently rankings of Russia and Belarus are mainly attributable to very low scores in dealing with customs and other border agencies (Arvis et al. 2016).

The international part of the Logistics Performance Index consists of six components, including customs and other border formalities, transport and information technology infrastructure, traceability of consignments and on-time deliveries. While interpreting the results, it should be noted that this ranking, which is based on the survey data collected from logistics professionals, is more like an approximate than an exact score from the statistical point of view. Figure 6 presents rankings of selected BSR countries in LPI 2016 for overall ranking and for the different components of the index.

Figure 6. The overall ranking and its components of selected BSR countries in Logistics Performance Index 2016 out of 160 countries surveyed



Source: World Bank 2016.

United Nations Conference on Trade and Development (UNCTAD) **Liner Shipping Connectivity Index (LSCI)** depicts countries' connectivity to container line traffic. Index ranking is assigned in relation to the score of the country that was ranked the highest in 2004. With the score of 9.64 Finland, for example, was ranked the 86th among 157 countries in 2016. China has consistently held the top place, with the score 167.48 in 2016. When interpreting the LSCI index results, it has to be taken into consideration that the database does not include information on ro-ro traffic. For this reason, countries that rely heavily on ro-ro traffic such as Estonia, Norway and Finland (and countries outside the BSR such as Ireland or Albania) are ranked very low, even if ro-ro-shipping is a very important mode of transport for them (UNCTAD 2014; 2015 a-c).

Table 1. Selected BSR countries in international rankings of competitiveness and logistics performance

		Finland	Sweden	Germany	Estonia	Poland	Russia	Countries included
Logistics Performance Index	2014	24	6	1	39	31	90	160
	2016	15	3	1	38	33	99	160
Liner Shipping Connectivity	2015	88	20	6	123	25	33	157
Index	2016	86	22	7	121	27	36	157
Enabling Trade Index	2012	6	4	13	26	48	112	132
	2014	5	9	10	28	45	105	138
Doing Business	2015	9	11	14	17	32	62	189
	2016	10	8	15	16	25	51	189
Global Competitiveness	2014-2015	4	10	5	29	43	54	144
Index	2015-2016	8	9	4	30	41	45	140
World Competitiveness	2015	20	9	10	31	33	45	61
Yearbook	2016	20	5	12	31	33	44	61
KOF Index if Globalization	2015	10	6	27	24	23	53	207
	2016	11	8	27	26	23	45	207
Corruption Perceptions	2014	3	4	12	26	35	136	175
Index	2015	2	3	10	23	62	29	168
Social Progress Index	2015	7	2	14	23	27	71	133
	2016	1	6	15	23	30	75	133

2015 KOF Index of Globalization; 2016 KOF Index of Globalization; Doing Business 2015; Doing Business 2016; IMD 2016; Social Progress Imperative 2015; Social Progress Imperative 2016; Transparency International (2014); Transparency International (2015); UNCTADstat 2016b; World Bank 2014; World Bank 2016; World Economic Forum 2012; World Economic Forum 2014a; World Economic Forum 2014b; World Economic Forum 2015

The **Enabling Trade Index (ETI)** by World Economic Forum (WEF) assesses foreign trade performance based on seven pillars, which each include several indicators. The pillars evaluate for example domestic and foreign market access as well as availability and use of information technology. In addition to the WEF's own survey data, previously collected survey data and statistics related to foreign trade transport, border crossing and customs operations have been used in the comparison. The ETI Index also uses information from LPI and LSCI indicators that have already been presented above. In 2014, Finland was ranked 5th among 138 countries in the ETI comparison (World Economic Forum 2014a; 2014b).

World Bank's **Doing Business Index** is conducted mainly with national interviews and assesses general preconditions and obstacles for doing business within a certain country. This means that the index is particularly useful when following up the development within that country over time. For the same reason of data collection methodology, its scores and rankings are rather problematic when countries or their

development paths are compared against each other. Nevertheless, it is one of the widest used overall business environment indicators. By and large, the findings resonate well with the other indicators presented here also for the BSR countries (Doing Business 2016).

The WEF publishes also **Global Competitiveness Index (GCI)**. The index is based on 12 pillars, which include for example health and primary education, performance of economic and social institutions as well as innovation. In 2015-2016, Germany, Finland and Sweden are found among the top 10 countries out of 140, but also other BSR countries, including Russia, are ranked fairly high in the GCI (World Economic Forum 2015).

The **World Competitiveness Yearbook (WCY)** by Swiss IMD ranks the countries based on competitiveness. The ranking evaluates economic performance, infrastructure as well as efficiency of administration and businesses. In 2016, the ranking covered 61 countries, and BSR countries performance tends to be largely in line with WEF's GCI, perhaps with exception of Finland's relatively low ranking (20th) in the WCY (IMD 2016).

KOF Swiss Economic Institute publishes **KOF Index of Globalization** (KOF 2015 and 2016), which measures globalization on three dimensions: economic, political and social. Economic dimension measures trade and investment flows, political dimension political cooperation between countries and social dimension sharing of information and ideas. The scale of the index is 1-100. In KOF Index of Globalization 2016, Sweden was ranked 8th and Finland 11th among 207 countries, followed by Poland and Estonia ahead of Germany. In 2016, The Netherlands was placed at the top place receiving an index score of 90.70.

Corruption Perception Index (CPI) produced by Transparency International is based on professionals' opinions and measures perceived levels of public sector corruption on a scale of 0-100. Level zero indicates highly corrupt and hundred nearly corrupt-free. The 2015 comparison covered 168 countries, of which Finland was ranked the 2nd scoring 90. The first place was given to Denmark, which received the score of 91 (Transparency International 2015).

Social Progress Index is produced by Social Progress Imperative. Index focuses on three components: basic human needs, foundations of wellbeing and opportunity. Countries are given points on a scale of 0-100 on each area, hundred being the highest score. The index score is calculated as an average of all three components. For example in 2016, Finland was at the top with an index score of 90.09 (Social progress imperative 2015; 2016).

In addition to the indicators presented in Table 1, another useful one is T**he DHL Global Connected-ness Index (DHL GCI),** which is composed of a large number of existing globalisation indicators around the world on the movement of goods (trade), people, investments and information. GCI takes a look at the depth of international interactions (of trade, people, investments and information), their geographic distribution (breadth) and their direction¬ality (outward versus inward). Depth measures countries' international flows relative to the size of their domestic economies. Breadth measures how closely a country's distribution of international flows across its partner countries matches the global distribution of the same type of flows (Ghemawat & Altman 2016).

On the aggregate level, the overall DHL GCI combines depth and breadth measures of the index. In the latest available DHL GCI published in 2016 covering the year 2015, the leading Baltic Sea countries are Denmark (9th), Germany (7th) and Sweden (11th). Slightly behinds these, you will find Norway (16th), Finland (28th)

followed by Estonia (43rd), Latvia (48th), Lithuania (52nd), Russia (67th) and Belarus (104th) (Ghemawat & Altman 2016). These rankings correlate rather well with the LPI, for example.

3. Measuring air cargo performance: empirical evidence on the BSR

In addition to the indicators presented above, there is a clear need for additional metrics to inform discussions on policy changes and reforms that could help improve the air cargo environment. Against this background, this section presents three very recent quantitative metrics of air cargo performance, which were developed using very large datasets commissioned by the International Air Transport Association IATA (Shepherd & Raj 2016).

The first, the Air Connectivity Index (ACI), is drawn from previous research by Arvis and Shepherd (2016; and Arvis et al. Forthcoming). The other two were first presented by Shepherd and Raj (2016): the Air Trade Facilitation Index (ATFI), and the eFreight Friendliness Index (EFFI). Shepherd and Raj (2016) also use these metrics to provide an extensive analysis of Global Value Chain (GVC) integration across countries, which discussion goes beyond this paper.

The reason why this novel set of air cargo indicators is presented here, is that these provide an unprecedented view on logistics performance of one of the most challenging modes of freight transport, namely air cargo.

3.1 The Air Connectivity Index (ACI)

The first indicator considered is the ACI by Arvis and Shepherd (2016), who developed this indicator as a summary measure of a country's position in the global air transport network. Countries with a higher ACI score have stronger air connections to a wider range of destinations than countries with a lower ACI score. They also show that a higher ACI score, which evidence stronger connectivity, is robustly associated with deeper integration into the world trading economy.

The ACI is based on available data on bilateral scheduled air services. It includes passenger, cargo, and mixed services. Belly cargo on passenger flights is typically thought to account for at least half of global air cargo, the rest being handled by dedicated freight services. The ACI therefore has some relevance to air cargo performance. However, its main limitation is that it only uses data on scheduled services, and therefore does not include unscheduled services and cargo flights undertaken by express operators. It is presented here for its indicative value, whereas the following air cargo two indicators, ATFI and EFFI, capture more directly the state of air cargo performance on a country level.

The ACI is an index ranging from zero to 100, with a higher score indicating greater connectivity. It is available for 2007-2012 in two papers, Arvis and Shepherd (2016) and Arvis et al. (Forthcoming), where it has been calculated for 186 countries and territories.

3.2 The Air Trade Facilitation Index (AFTI)

The considerations of speed and reliability are essential for air cargo, where time is a key quality of service: goods may be perishable, or they could be high value to weight ratio goods destined for a supply chain operating on a just-in-time protocol. With these insights in mind, the objective of the ATFI is to capture the

dimensions of trade facilitation that are most important to air cargo, and so supplement existing indicators that deal with trade facilitation more generally, such as the LPI.

The ATFI draws on a number of data sources, and is a weighted average of underlying series. The aim is to capture a large amount of data from different sources, focusing on the aspects of trade facilitation that are most important from the perspective of air cargo, and particularly the use of information and communication technologies (ICTs) to facilitate air cargo transactions. The underlying data will be aggregated using a weighted average methodology, based on expert judgment, and formulated in consultation with IATA as follows:

1. Global Express Association's Customs Capability Database (25%)
2. OECD's Trade Facilitation Indicators (25%)
3. Signature of the 1999 Montreal Convention, or equivalent domestic legislation (30%)
4. Signature of the Revised Kyoto Convention (10%)
5. Notification of selected Category A Articles under the WTO Trade Facilitation Agreement (TFA) (10%).

The output of data aggregation and analysis is an ATFI with higher scores indicating better performance, ranging between 0 and 100 and expressed as a percentage covering 124 countries. The top ranked countries are all active trading nations with well-developed industrial sectors. They consistently figure well in related indices, like the World Bank's LPI.

3.3 The eFreight Friendliness Index (EFFI)

While the ATFI provides a general indicator of the trade facilitation environment surrounding air cargo, another important aspect of air cargo performance relates to the ability to undertake transactions electronically. Electronic processing of cargo transactions has clear savings in time and cost for exporters and importers, and is spreading throughout the world as countries develop the necessary capacities. The purpose of the EFFI is to capture the state of those capacities at the present time.

The EFFI is based on a similar approach as for the ATFI, but with a narrower dataset. The core of the Index is new data supplied by IATA. One part of it covers e-Air Waybill (eAWB) use, disaggregated by bilateral country corridor. Those data are aggregated by origin and destination countries to provide an indicator of the extent to which eAWBs are used relative to total AWB transactions over a given period. The second part of the IATA dataset is information on eFreight transactions relative to the total number of AWBs. This second indicator captures a broader range of information than just eAWB use, including the ability to run the whole transaction electronically. Data are again provided bilaterally, and are aggregated by origin and destination country. In addition to the IATA data, the EFFI includes indicator 2 from the Customs Capability Database above. Weights for the EFFI are as follows:

1. IATA eAWB Penetration (35%).
2. IATA eFreight Usage (35%).
3. Does Customs accept and process electronically the data required for release of shipments in advance of their actual arrival so that they can be released either prior to or immediately after arrival? (Customs Capability Database; 30%).

As in the case of the ATFI, the weights are based on expert judgment, formulated in consultation with IATA. The output is an EFFI with higher scores indicating better performance, ranging between 0 and 100 and expressed

as a percentage. The Index covers 135 countries, and as for the ATFI, reweighting has not been applied if some data points are missing, so as to preserve cross-country comparability.

3.4 The three air cargo performance indicators combined

Table 2 summarises the three indicators, and given the nature of Air Connectivity Index (ACI) with data from the year 2012, it is not surprising countries with very frequent and numerous scheduled air connections come to the top. Germany ranked 3rd worldwide in the ACI, followed by Russia (20th) and Denmark (25th).

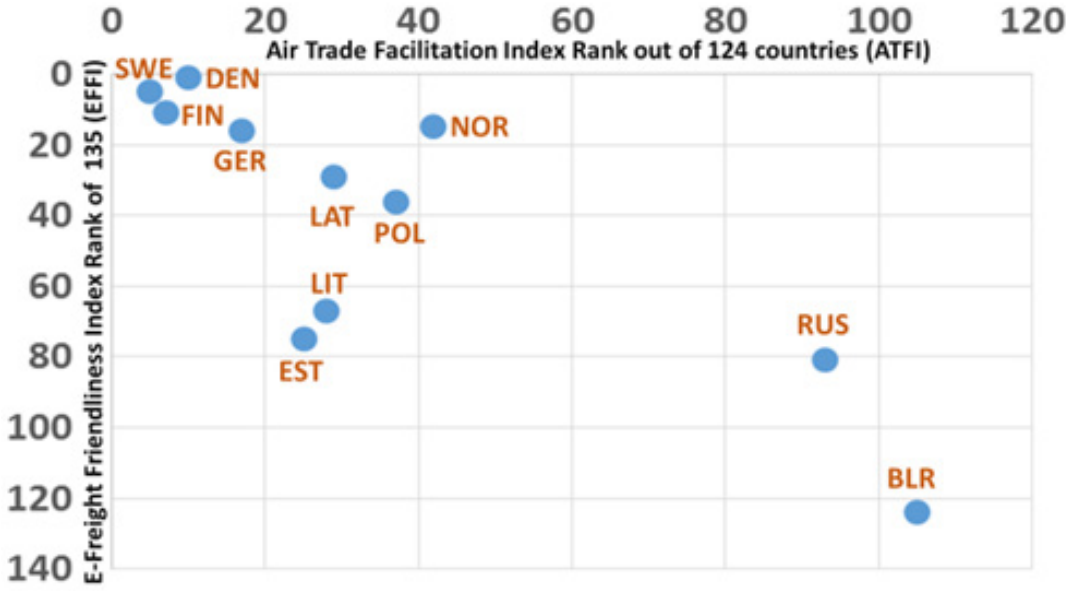
Given the nature of Air Trade Facilitation Index (ATFI), and E-Freight Friendliness Index (EFFI), it is equally evident that countries with very expeditious customs procedures, a highly developed regulatory framework, and a high degree of usage of electronic Air Waybills come to the top. This means the top three countries in the combined ATFI and EFFI coordinate system are Sweden, Finland and Denmark, while Russia and Belarus occupy the lower right-hand side corner of the graph (Figure 7). These findings are also very much in line with, for example, the scores and rankings found in the World Bank's LPI.

Table 2. BSR countries in Air Cargo Performance Indicators

	Air Connectivity Index (ACI) for 2012		Air Trade Facilitation Index (ATFI)		E-Freight Friendliness Index (EFFI)	
Top Country with score & rank	*United States*		*Austria*		*United Arab Emirates*	
	13,8	1	98 %	1	47 %	1
BSR Country	**Score**	**Rank out of 154**	**Score**	**Rank out of 124**	**Score**	**Rank out of 135**
Germany	7,0	3	90 %	17	36 %	16
Russian Federation	4,1	20	44 %	93	1 %	81
Denmark	3,8	25	94 %	10	42 %	2
Poland	3,4	32	85 %	37	31 %	36
Estonia	3,4	34	87 %	25	2 %	75
Sweden	3,3	40	96 %	5	40 %	5
Norway	3,2	47	82 %	42	36 %	15
Latvia	3,0	53	87 %	29	32 %	29
Finland	2,9	56	95 %	7	37 %	11
Lithuania	2,9	58	87 %	28	6 %	67
Belarus	2,5	60	32 %	105	0 %	124

Data source: Shepherd & Raj 2016.

Figure 7. BSR country rankings in the Air Trade Facilitation Index (ATFI; x-axis) and E-Freight Friendliness Index (EFFI; y-axis), out of 124 and 135 countries, respectively



Data source: Shepherd & Raj 2016.

4. BSR EU member states in the EU Transport Scoreboard 2016

The EU Transport Scoreboard provides a comprehensive set of indicators for assessing transport and also logistics performance of EU Member States. The EU Transport Scoreboard was first released in spring 2014, and the second, updated edition was launched on October 27, 2016 (EU Transport Scoreboard 2016). It compares the quality of transport in EU Member States based on indicators grouped into 4 different categories relevant for transport and logistics as follows:

- Internal Market
- Investment and Infrastructure
- Energy Union and Innovation
- People

The summary rankings of the BSR countries among EU-28 in the EU Transport Scoreboard 2016 are presented in Table 3.

Table 3. BSR EU Member States in the EU TRANSPORT SCOREBOARD 2016

EU TRANSPORT SCOREBOARD 2016	SE	DE	FI	DK	EE	LV	LT	PL
Overall country rank out of EU-28	2	3	5	5	9	13	22	22
Expenditure per head on transport-related items 2014 (€)	2 500	2 600	2 400	2 500	1000	800	1200	800

Source: EU Transport Scoreboard 2016.

Country-by-country evaluations of BSR EU Member States in the EU Transport Scoreboard 2016 in each of the four categories are presented in Appendix 2. This provides a more nuanced picture of the relatively large differences among BSR countries in their overall rankings.

5. Conclusion

The main purpose of the paper was to present some of the most recent data available on the transport sector and logistics activities in the BSR. The differences among BSR countries in the level of their performance, investments, emissions and other key indicators in freight transport and logistics underline the diversity of the region.

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Appendix

Appendix 1. Selected transport sector indicators of BSR EU Member States in 2013 (the highlighted fields indicate the largest value in each category)

Employment by Mode of Transport in 2013(in 1 000) (*)

	Total	Road freight	Road (pass.)	Railways	Pipelines	Inland water transport	Sea transport	Air transport	Warehousing and support activities	Postal and courier activities
EU-28	10 521	2 938	1 991	560	29	40	165	350	2 636	1 813
DK	147	33	23	*7*	*0*	0	21	9	31	23
DE	2 062	410	385	48	3	8	21	58	626	503
EE	38	15	*4*	*2*	0	*0*	*1*	0	12	4
LV	75	24	13	4	0	0	1	1	26	6
LT	109	53	15	11	0	*0*	*1*	0	20	9
PL	721	294	132	55	4	1	2	5	130	98
FI	148	45	*33*	*9*	*0*	1	*8*	*5*	29	*22*
SE	270	76	69	10	*0*	1	13	*9*	48	*43*

Number of Enterprises by Mode of Transport (*)

EU-28	1 134 016	563 598	344 141	865	244	9 600	11 641	4 366	139 242	60 300
DK	11 246	5 150	2 913	16	5	21	303	63	1 384	1 391
DE	90 871	35 852	24 848	151	36	936	2 175	519	15 952	10 403
EE	4 761	2 873	459	7	0	5	37	9	1 282	89
LV	6 560	3 310	975	26	1	19	46	21	1 901	261
LT	10 776	4 891	3 259	5	0	14	11	14	1 800	782
PL	135 210	77 141	42 789	142	5	374	263	297	10 979	3 220
FI	22 129	10 370	9 001	5	2	79	252	82	1 980	358
SE	29 486	15 006	8 802	55	*0*	478	767	298	3 645	435

Turnover by Mode of Transport in 2013 (million €)(*)

EU-28	1 372 792	311 181	124 766	73 108	17 098	7 113	105 809	138 184	486 113	109 400
DK	49 764	5 453	2 350	*1 169*	*25*	71	25 394	3 033	10 145	2 127
DE	268 368	39 194	27 874	11 067	3 565	2 137	26 411	20 736	109 000	28 384
EE	5 118	1 259	*160*	*164*	0	*29*	*501*	127	2 786	92
LV	5 286	1 389	*195*	*449*	*70*	19	68	*345*	2 657	95
LT	7 614	3 260	259	464	0	*2*	*173*	139	3 193	123
PL	41 833	20 281	3 653	2 607	938	245	371	1 839	9 935	1 965
FI	22 946	6 024	*2 240*	*827*	*165*	*113*	*1 810*	*2 997*	6 399	*2 371*
SE	49 090	11 191	8 015	2 019	*0*	159	3 562	*3 572*	17 526	*3 047*

Source: Eurostat, estimates (*in italics*) https://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2016_en

Notes:

(*) Data refer to transportation and storage activities (including postal and courier services, removal services).

(**) Including all urban and suburban land transport modes (motor bus, tramway, streetcar, trolley bus, underground and elevated railways)

The above figures refer to those companies whose main activity lies in the mode concerned.

Economic activity according to NACE Rev. 2 classification

Appendix 2. Evaluations of BSR EU Member States in EU TRANSPORT SCOREBOARD 2016

1. Internal Market

In **Denmark**, both the rail freight and the rail passenger market are open to a certain degree of competition. However, in the rail freight segment, the market share of competitors of the main undertaking has slightly decreased from 27% in 2012 to 24% in 2014. Denmark records a relatively high number of pending court cases regarding alleged infringements of EU law in the road transport sector, but otherwise very few infringement cases. Its transposition rate of EU transport legislation stands at 98%.

In **Estonia**, the rail market shows an average level of competition. In the passenger segment, the market share of competitors decreased significantly in 2014 as a result of restructuring of domestic operations. Estonia had very few pending court cases concerning alleged infringements of EU transport law at the end of July 2016, and a very good record in transposing EU transport directives into national law. Estonia has the second highest employment share in high growth transport enterprises across the EU.

The **Finnish** rail market is a monopoly both in the freight and in the passenger segment. At the end of July 2016, Finland had a number of pending court cases for an alleged infringement of EU law in the area of road transport. Finland has transposed 98% of all EU transport directives into national law. The share of employment in high growth transport enterprises in Finland has slightly decreased, and is now below EU average.

In **Germany**, the degree of competition in the rail market is growing both in the freight and in the passenger segment. The number of pending court cases because of an alleged infringement of EU transport law is relatively high as regards road, rail and air transport (figures from the end of July 2016). The transposition rate of EU transport directives into national law has gone down to 97%. The share of people employed in high growth enterprises in the transport sector in Germany has decreased below the EU average.

In **Latvia**, the market shares of competitors of the main rail operator are 21.5% for the freight segment and 11% for the passenger segment. Latvia had very few pending court cases about alleged infringements of EU law in the area of transport at the end of July 2016 and a near perfect 99% score for transposing EU transport directives into national law. The employment share in high growth transport enterprises is amongst the highest in the EU and growing.

Lithuania tops the EU ranking for the employment share in high growth transport enterprises, an indication of a lively transport sector. It has transposed 98% of EU transport directives into national law. At the end of July 2016, Lithuania had relatively few ongoing court cases concerning an alleged infringement of EU transport law to deal with. The rail market, both for freight and for passengers, is still run exclusively by the principal undertakings.

In **Poland,** the market share of competitors of the main passenger rail operator is the second highest in the EU. The market share of competitors of the main freight operator is also quite high and growing further. Poland is still among the countries with the highest number of pending court cases concerning an alleged infringement of EU law, especially as regards road, rail and air transport (figures from the end of July 2016). The share of employees in high growth enterprises has grown to 11%, above EU average.

In **Sweden**, the market share of competitors of the main rail freight operator is the highest in the EU (55%). The number of court cases because of an alleged infringement of EU transport law has generally remained very low as of the end of July 2016. However, there are a number of pending proceedings as regards aviation. Sweden scores a perfect 100% as regards the transposition of EU transport directives. The employment share in high growth transport enterprises has carried on decreasing slightly over the past few years, but is still well above EU average.

2. Investment and Infrastructure

Denmark's transport infrastructure is rated positively by respondents to a survey of the World Economic Forum, in particular its road and port infrastructure. However, the timeliness of shipments declined between 2014 and 2016. The level of completion of the TEN-T Core Network is very different depending on the transport mode: Whereas the road network is 82% complete, high-speed rail needs to be developed significantly.

Ratings for **Estonia**'s transport infrastructure have improved across all modes of transport, with its port infrastructure ranking clearly above the EU average. Ratings for the Estonian air transport infrastructure are getting closer to the EU average. Between 2014 and 2016, Estonia has improved the timeliness of shipments considerably. However, Estonia is amongst the Member States with low completion rates of its TEN-T Core Network.

The quality of **Finland**'s rail, port and air infrastructure is rated among the best in the entire EU, maintaining last year's level. Ratings for Finnish roads have slightly decreased over the past two years. Finland has improved the timeliness of shipments to a level rated above EU average. It has completed its TEN-T Core Network for high-speed rail and inland waterways (bearing in mind that Finnish high-speed rail covers a very small section of the rail network). Completion rates for the road network and for conventional rail stand at 72% and 44% respectively.

Germany gets high ratings for its transport infrastructure, especially for its airports. Ratings for German roads have gone down slightly but stay well above the EU average. Germany is also doing very well as regards the timeliness of shipments. The TEN-T Core Network is completed for Germany's inland waterways and nearly so for its conventional rail network. As regards high-speed rail and road, the completion rate is close to 60%.

Ratings for **Latvia**'s transport infrastructure are close to the EU average, except for its roads, which are rated poorly. The timeliness of shipments declined between 2014 and 2016. It is now below the EU average. Latvia has completed 88% of its TEN-T Core Road Network, but its rail network needs a lot of development.

Between 2014 and 2016, **Lithuania** has improved the timeliness of shipments above the EU average. Ratings for the quality of transport infrastructure are stable above the EU average as regards road and rail infrastructure and slightly below the EU average for ports and air transport infrastructure. These results can be expected to improve with further progress in the completion of the TEN-T Core Network. Only the network for inland waterways is 100% completed.

Ratings of the quality of transport infrastructure in **Poland** are getting closer to the EU average across all modes of transport over the last reporting period. Poland's TEN-T Network currently stands at 33% completion for the road core network and at 23% for rail. The timeliness of shipments declined to slightly below EU average between 2014 and 2016.

Swedish transport infrastructure is rated slightly above EU average for roads, ports and airports and slightly below EU average for railroad infrastructure. Sweden scores second best in the EU as regards the timeliness of shipments. Sweden's TEN-T Core Network for inland waterways is complete and the Core road and conventional rail networks are more than 50% complete. However, high speed rail needs development.

3. Energy Union and Innovation

Denmark ranks second in the EU for the availability of charging points for electric vehicles. According to provisional 2015 data of the European Environmental Agency, it has increased the share of new cars using alternative fuels. The share of renewable energy in transport fuel consumption is close to EU average and rising. However, the amount that private companies invest in transport research and development in Denmark is low in EU-wide comparison.

In **Estonia**, the share of renewable energy in transport fuel consumption is the lowest in the EU, and the share of new cars being registered that use alternative fuels is below the EU average. The share of electrified railway lines is also low. However, drivers spend relatively little time in traffic jams.

Car drivers spend less time in road congestion in **Finland** than in any other EU country. The share of renewable energy used in transport fuels has risen sharply and is now the highest in Europe. Finland is also among the EU top 5 performers as regards the number of charging points for electric vehicles. However, the share of new cars using alternative fuels is below 1%. More than half of the railway lines in Finland are electrified. Private expenditure in research and development for transport is relatively low.

Germany is ahead of all other EU Member States as regards private investment in research and development in the transport sector. It ranks above the EU average for the share of renewable energy in fuel consumption for transport and clearly below the EU average for the share of new cars using alternative fuels. The amount of time drivers in Germany spend in traffic jams is slightly above average.

In **Latvia**, the share of renewable energy in transport fuel is relatively low, without any significant increase over the past few years. The number of new cars using alternative fuels and the number of charging points for electric vehicles are also low. Latvia has one of the lowest shares of electrified railway lines in the EU. Drivers in Latvia spend less time in traffic jams than drivers in most other EU countries.

Lithuania has few charging points for electric vehicles and few new cars that use alternative fuels. The share of renewable energy in transport fuel consumption is below the EU average. However, drivers in Lithuania spend around 8 hours less per year stuck in traffic than the European average.

Poland has a relatively low number of charging points for electric vehicles, but a growing number of new cars that use alternative fuels. More than 60% of Polish railways are electrified. The share of renewable energy in fuel consumption is close to the EU average, but has not increased over the past years.

Sweden has the second highest share of renewable energy in transport fuel (19.2% versus an EU average of 5.9%), and it is in fourth place in the share of new cars using alternative fuels. Three quarters of Swedish railway lines are electrified. The amount of time that car drivers spend in traffic jams in Sweden is low.

4. People

Denmark has maintained an excellent road and rail safety record. The share of women employed in the transport sector decreased from 23% in 2014 to 20% in 2015 and is now below the EU average. Consumer satisfaction with all means of transport is close to the EU average, with a slight positive tendency as regards urban and air transport and a slight negative tendency as regards rail transport.

Estonia has made a lot of progress in improving its road safety score. In 2015, the number of road fatalities per capita corresponded to the EU average. Estonia has a bigger share of women employed in transport than the EU average. However, the share of women went down from 28% in 2014 to 25% in 2015. Consumer satisfaction with transport in Estonia has gone up for all modes, with Estonia now in the group of EU top performers as regards satisfaction with urban and rail transport.

Finland's results for road safety are better than the EU average. The number of fatalities on Finnish roads went up from 42 per million inhabitants in 2014 to 49 in 2015. However, as Finland is a relatively sparsely populated country, it is to be expected that figures fluctuate from year to year. The share of women employed in transport corresponds to the EU share. Consumer satisfaction with transport is high and improving further across all means of transport.

Germany performs better than the EU average as regards road safety. However, its performance has deteriorated over the past two years. The number of rail fatalities is very low. The share of women employed by transport companies in Germany is three percentage points higher than the EU average. Consumer satisfaction with all means of public transport is high, with a further clear improvement between 2013 and 2015.

In 2015, **Latvia** managed to bring the number of fatalities on its roads down below 100 per million inhabitants. However, its road safety performance still needs considerable improvement towards the EU average (52 deaths per million inhabitants). Consumer satisfaction with all means of transport is close to the EU average, and Latvia is amongst the top 5 EU performers as regards the share of women employed in transport.

Consumer satisfaction with rail transport in **Lithuania** is the highest in the entire EU. Lithuania's road safety performance has improved compared to the previous reference period, but the number of road fatalities per million inhabitants is still among the highest in the EU. Lithuania ranks at the bottom of the table for its rail safety performance. The share of women employed in the transport sector is above EU average.

Consumers in **Poland** are more and more satisfied with urban and air transport, above EU average, and satisfaction with rail transport, which was the lowest in the EU in 2013, has increased a lot. As regards road safety, Poland has made continuous progress, but still reports a higher number of road fatalities than the EU average (77 per million inhabitants compared to the EU average of 52). Its rail safety performance has slightly improved as well. The Polish transport sector employs 20% women, compared to an EU average of 22%.

Sweden has maintained its position among the three top performers in road safety. The share of women employed in the transport sector corresponds exactly to the EU average (22%). Consumer satisfaction with transport in Sweden has gone up between 2013 and 2015. It is however below EU average for all modes of transport.

Inward and outward foreign direct investment in the Baltic Sea region[1]

Kalman Kalotay

Executive summary

This article reviews the main characteristics of both inward and outward foreign direct investment (FDI) in the Baltic Sea region. Among other questions, it explores the extent to which intra-regional flows have gained in importance over recent years. It highlights that both inflows and outflows have failed to recover quickly after the Great Recession of 2007–2009, due to problems in the Eurozone and the crisis of the Russian economy. Nevertheless, the Baltic Sea region remains a group that relies much on inward and outward FDI in economic development. It is also shown that for some of the economies, intra-grouping investment ties are important. These ties are particularly close between some neighbours and with large economies, especially Germany and Sweden.

1. The context of FDI flows

This article follows the most common definition of the Baltic Sea region, which includes Denmark, Estonia, Finland, Latvia, Lithuania, Norway,[2] Poland, Sweden, the Mecklenburg-Vorpommern and Schleswig-Holstein Länder of Germany, as well as the North-western region (the Federal City of St. Petersburg, and the Kaliningrad, Leningrad, Novgorod and Pskov oblasts) of the Russian Federation.[3] However, given the nature of FDI data – they are too imperfectly broken down to sub-national levels – in our analysis we are obliged to take the whole territory of Germany and the Russian Federation in consideration. The Baltic Sea region thus defined was home to almost 300 million people in 2015 (4% of world population) and produced US$6.6 trillion of nominal gross domestic product (GDP) in the same year (9% of the world total), according to preliminary data from UNCTAD's Statistical database. In other words, the GDP per capita of the Baltic Sea region (about US$22,200 in 2015) was more than twice as high as the world average (about US$10,200 in the same year).

FDI patterns in the Baltic Sea region are shaped by the geography of this group of countries: they occupy the Northern wing of the European Union/European Free Trade Association (EU/EFTA) region, plus the Western, relatively developed and urbanized part of the Russian Federation. It is a diverse group, consisting of traditional high-income countries with a strong welfare State (Denmark, Finland, Germany, Norway, and Sweden), as well as transition economies whose welfare State was substantially reduced during the transformation to market economy but that nevertheless managed to join the group of high-income countries (Estonia in 2006, Poland in 2009, and Latvia and Lithuania in 2012), with the exception of the Russian Federation, which is classified as higher middle income.[4] Nevertheless, important differences in levels of GDP per capita persist between the Western part of the Baltic Sea region, in which the GDP per capita ranged between US$41,000 (for Germany)

1 The views expressed in this chapter as those of the author and do not necessarily reflect the opinion of the United Nations.

2 Norway is included in the region because a short segment of its coastline belongs to the Baltic Sea, and has strong historical, cultural, political and economic links with other Baltic Sea countries, especially Denmark and Sweden.

3 There is no overall agreement about whether Belarus and Iceland also belong to the Baltic Sea region. Therefore, they are not included in this analysis.

4 For three years (2012–2014), the Russian Federation was also categorized as high income but was reclassified to upper middle income in 2015.

and US$78,000 (for Norway) and the Eastern part, in which the GDP per capita ranged between US$9,000 (for the Russian Federation) and US$17,000 (for Estonia). For that reason, we will continue applying an East-West differentiation in FDI patterns.

In this article, equal attention is paid to inward and outward FDI because they both play an important role in the economic development of the Baltic Sea region. This is not surprising because they are different channels of integration into the international economy, both needed to improve competitiveness. As for the Baltic Sea region, it will be shown that, with the exception of very few years, is a typically net capital exporting group, whose outflows tend to exceed inflows.

The analysis of this article acknowledges the use of the findings of extant literature on both facets of FDI. It should be stressed that the number of studies focusing on individual countries is significantly higher than that of studies focusing on the group as a whole or on intra-grouping cooperation. These studies generally indicate that there is a good potential for FDI in the region thanks to the solid macroeconomic bases of the individual national economies and high GDP per capita in some of them. However, they also note the relative exposure of the Baltic Sea region to external shocks, which can cause fluctuations and instability in FDI (cf. Kalotay & Sulstarova 2013).

Studies on FDI in the region also stress the interdependence of Baltic Sea countries, due to their geopolitical situation. As Liuhto (2005) noted about one of the main reasons, "the Baltic Sea is Russia's most important route for transporting oil abroad, which strengthens the region's importance in the EU-Russian energy-related co-operation". He also stressed the special FDI links of individual countries: Danish capital in Lithuania and Latvia, Finnish capital in Estonia, and Swedish and German capital all over the Baltic Sea region etc. In 2005, it was possible to note the emergence of Russian FDI in the region, too. Later on, it became particularly large in some countries, such as Finland (Liuhto & Aro 2017), but also in Germany and the Baltic States (Liuhto 2012). Other studies (e.g. Kuznetsov 2012) have also found strong, although unbalanced, corporate links in the region: the three small Baltic States are very important intra-grouping capital importers, Sweden is a major capital exporter, while in other countries, other aspects of intra-regional cooperation are more important than intra-regional FDI. In particular, "the integration of Russian business in the Baltic part of the European integration area is still rather weak despite Russia's considerable foreign direct investment in the Baltic States" (p. 11). In terms of "the place of the Baltic States on the corporate world map" (Kuznetsov 2015, p. 25), a clear-cut connection is found between the effect of Baltic neighbourhood on FDI and the geographical distribution of corporate activities in the region. Companies following a multilevel strategy usually see the Baltic Sea region as an important component of their "Europe" divisions (or "home markets" in case of a Baltic Sea headquarter).

All studies note the importance of the political factor in shaping FDI, especially in light of the sanctions imposed on the Russian Federation after the Crimean and East Ukrainian crisis (Kalotay 2014; Kuznetsov 2015; Liuhto 2016). These sanctions slow down, in particular, FDI flows to the Russian Federation from the Baltic Sea region partners, but also the expansion of Russian firms in the region, despite the relative resilience of Russian outward FDI.

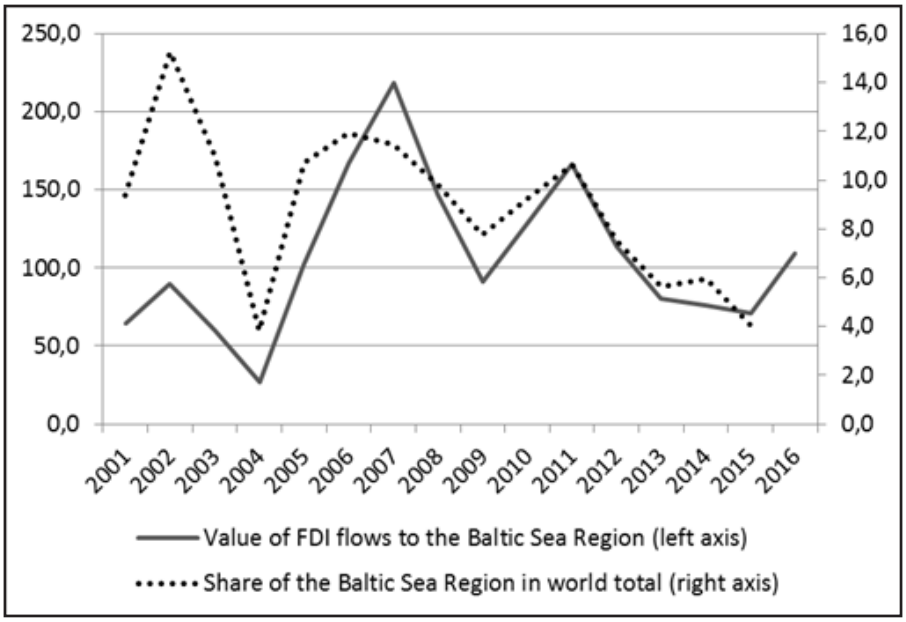
2. Overall dynamics of foreign direct investment in the Baltic Sea region

FDI plays a major role in today's world economy, linking the production and consumption of national economies through the activities of geographically dispersed firms under common ownership and control. This observation applies to FDI inflows to, and outflows from, the Baltic Sea region, too. However, since the onset of the Great Recession, which affected the world most hardly between 2007 and 2009, both inflows and outflows of the region have struggled to recover to their pre-crisis levels. As it will be shown, the region was a relative laggard in terms of overcoming the effects of the Great Crisis, partly belying the optimistic forecasts of the early 2010s for a quick recovery (cf. Kalotay and Sulstarova 2013). The pre-crisis levels of FDI are not expected to be surpassed before the end of the current decade.

The relative sluggishness of FDI recovery in the Baltic Sea region can be explained by specific negative factors, such as the fallout of the protracted Eurozone crisis, and the 2014 Russian currency crisis (Kalotay 2015), whose effects were multiplied by the economic sanctions introduced in the aftermath of the Crimean and East Ukrainian conflict (Kalotay 2014). It has to do less with the economic fundamentals of the Baltic Sea economies, which tend to be solid.

Data on FDI flows indicate that inward FDI was more hardly hit than outward FDI. Inflows reached their peak (US$ 218 billion) in 2007, accounting for more than 11% of global inflows (Figure 1). They declined by 58% (to US$91 billion) by 2009. After the crisis, a recovery of inflows started in 2010–2011. However, that fragile recovery was broken by another, four-year long decline (2012–2015). Preliminary estimates based on projections indicate that in 2016 FDI inflows finally grew again. However, the projected value (US$109 billion) is only half of the pre-crisis peak. The sluggishness of inflows resulted in a sliding back of the Baltic Sea region in world comparison. By 2015, they accounted for only 4% of global flows (more on less on par with their participation in global population but less than half of their share in world GDP). As expected, over the period of 2001–2016, the largest economies – Germany, the Russian Federation, Sweden and Poland, in that order – dominated the inflows of FDI (Table 1).

Figure 1. FDI flows to the BSR and their share in world total, 2001–2016 (billions of US$ and %)



Note: The values for 2016 are based on projections.
Source: Author's calculations, based on UNCTAD and national data.

Table 1. FDI inflows of the Baltic Sea economies, 2001–2016 (millions of US$)

Economy	2001	2002	2003	2004	2005	2006	2007	2008
Germany	26 402	53 522	32 377	-10 193	47 449	55 654	80 212	8 127
Russian Federation	2 808	3 425	7 755	15 284	14 375	37 442	54 922	75 856
Sweden	10 914	12 273	5 396	12 215	11 626	27 532	28 846	36 888
Poland	5 579	4 030	3 982	12 140	8 203	14 577	19 836	12 283
Norway	2 123	791	3 471	2 544	2 181	10 526	7 988	10 251
Finland	3 732	8 046	3 319	2 827	4 750	7 652	12 451	-1 144
Denmark	11 523	6 637	2 611	-10 716	8 671	9 249	7 348	-588
Estonia	539	289	928	957	2 799	1 334	2 311	1 830
Lithuania	446	725	180	774	1 028	1 817	2 015	1 965
Latvia	105	210	279	608	706	1 664	2 324	1 264
Total	64 171	89 948	60 298	26 439	101 788	167 447	218 253	146 730

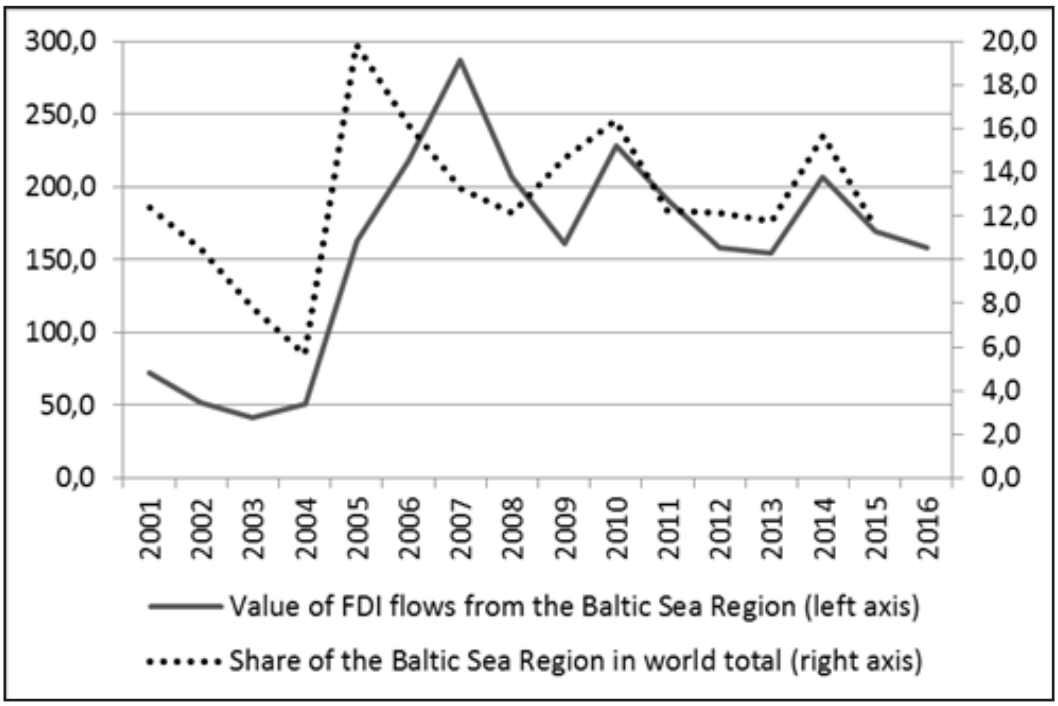
Economy	2009	2010	2011	2012	2013	2014	2015	2016
Germany	23 805	65 642	67 514	28 181	11 671	880	31 719	42 846
Russian Federation	27 752	31 668	36 868	30 188	53 397	29 152	9 825	20 947
Sweden	10 093	140	12 923	16 334	4 858	3 561	12 579	15 988
Poland	10 039	12 796	15 925	12 424	3 625	12 531	7 489	11 619
Norway	16 641	17 044	15 250	18 774	3 949	7 987	-4 239	21 804
Finland	718	7 359	2 550	4 154	-169	17 302	8 290	-6 104
Denmark	410	-9 157	11 437	414	1 051	3 474	3 642	853
Estonia	1 839	1 509	1 005	1 565	546	507	208	541
Lithuania	-14	800	1 446	700	469	-157	863	344
Latvia	94	379	1 453	1 109	903	595	643	123
Total	91 379	128 180	166 371	113 843	80 300	75 832	71 020	108 961

Note: The values for 2016 are based on projections.

Source: Author's calculations, based on UNCTAD and national data.

FDI outflows followed similar ups and downs. Their all-time highest absolute level (US$ 287 billion) was recorded in 2007, when the Baltic Sea region accounted for more than 13% of global inflows (Figure 2). Somewhat paradoxically, the highest share of the group in world FDI outflows (almost 20%) was recorded two years earlier, in 2005. The crisis hit outbound FDI slightly less than inbound FDI. Baltic Sea region outflows declined by 44% (to US$161 billion) by 2009. After the crisis, outflows bounced back in 2010 but declined again in 2011–2013. A second recovery was started in 2014 but again broken in 2015–2016. This trend of continued decline in absolute values broken only in two years resulted in a loss of the importance of the Baltic Sea region in world outflows. By 2015, they accounted for only 11.5% of global outflows. Over the period of 2001–2016, only four economies – Germany, the Russian Federation, Sweden and Norway, in that order – accounted for more than 90% of the region's FDI outflows. The share of Germany alone was 45% (Table 2).

Figure 2. FDI flows from the Baltic Sea region and their share in world total, 2001–2016 (billions of US$ and %)



Source: Author's calculations, based on UNCTAD and national data.

Over the fifteen-year period 2001–2016, the Baltic Sea region was a net outward investor (FDI outflows exceeding inflows), with the notable exceptions of 2002 and 2003. The cumulative inflows of the group over the period 2001–2016 amounted to US$1.7 trillion, and cumulative outflows to US$2.5 trillion. The ratio between the two was close to 1.5 in favour of outflows.

The growth and concentration of inward FDI in the region were associated with several structural and cyclical factors. Among the former are sustained technological efforts, deepening cross-border division of labour, the EU-wide regionalization of markets, privatization and deregulation of services, and their opening up to FDI. Not surprisingly, the lion's share of FDI flows to the Baltic Sea region traditionally originated in developed countries. During 1995–2000, they accounted for 94% of FDI inflows. EU countries alone represented 57% in that period. Traditionally, intra-Baltic Sea FDI played a privileged role (Liuhto 2005, Baltic Rim Economies Report 2005). In section 4, this chapter will provide updated information on the importance on intra-Baltic Sea FDI.

Table 2. FDI outflows of the Baltic Sea economies, 2001–2016 (millions of US$)

Economy	2001	2002	2003	2004	2005	2006	2007	2008
Germany	39 890	18 942	5 569	20 311	74 542	116 679	169 321	71 507
Russian Federation	2 502	3 484	9 550	13 663	16 747	29 840	43 849	56 735
Sweden	7 301	10 600	21 112	22 220	27 712	26 672	38 841	30 363
Norway	807	5 761	6 063	5 316	23 678	20 685	10 436	20 404
Denmark	13 361	5 700	1 138	-10 365	13 143	14 453	13 112	15 273
Finland	8 370	7 371	-2 279	-1 080	4 223	4 805	7 203	9 297
Poland	-211	136	-300	166	1 347	3 857	1 680	1 859
Estonia	202	132	155	269	663	1 017	1 684	1 142
Lithuania	7	17	38	263	346	291	597	336
Latvia	14	3	45	105	128	171	369	244
Total	72 244	52 146	41 091	50 868	162 528	218 471	287 093	207 159

Economy	2009	2010	2011	2012	2013	2014	2015	2016
Germany	68 541	125 451	77 930	62 164	40 362	106 246	94 313	49 408
Russian Federation	34 450	41 116	48 635	28 423	70 685	64 203	26 558	48 886
Sweden	26 202	20 349	29 861	28 952	30 071	8 564	23 717	25 383
Norway	19 165	23 239	18 763	19 561	7 792	18 254	19 426	28 206
Denmark	3 688	1 381	11 254	7 355	7 176	8 410	13 214	14 920
Finland	5 681	10 167	5 011	7 543	-2 402	-563	-10 538	-11 103
Poland	1 806	6 147	1 026	2 901	-451	1 974	2 901	2 179
Estonia	1 375	167	-1 454	1 054	431	-230	306	262
Lithuania	198	-6	55	392	192	59	-10	-314
Latvia	-62	19	61	192	411	286	16	145
Total	161 044	228 031	191 143	158 536	154 266	207 204	169 902	157 972

Note: The values for 2016 are based on projections.

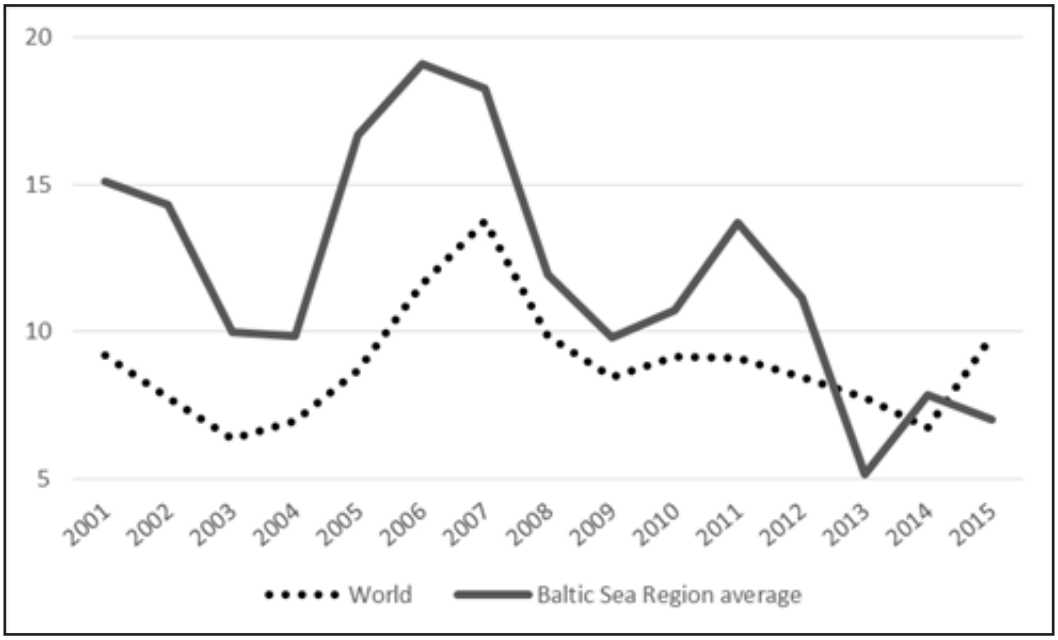
Source: Author's calculations, based on UNCTAD and national data.

3. Importance of FDI in economic development

To better understand the development impact of FDI, the findings of the previous section based on absolute numbers have to be adjusted to the very different sizes of the 10 Baltic Sea region economies. In terms of population, there are more than 100 times of difference between the Russian Federation (the most populous country) and Estonia (the least populous one), and in terms of GDP, there are almost 150 times difference between Germany (that has the largest GDP, close to US$3 trillion) and Estonia (that has the smallest GDP, US$22 billion). The most straightforward way to normalize FDI flows to the size of individual economies is to compare them to gross fixed capital formation (GFCF). However, it has to be noted that not all FDI in transformed into GFCF, and therefore sometimes this indicator overestimates the contribution of foreign investors.

With those reservations in mind, a general observation about Baltic Sea economies is that they tend to rely more on inward and outward FDI than the average of the world. In terms of the ratio of inward FDI flows to GFCF, in 2001–2016, the unweighted average of the Baltic Sea region exceeded the world average in each year, with the exception of 2013 and 2015 (Figure 3). Over time, both the world average and the average of the Baltic Sea region varied sharply. In both groups, they reached high levels before the Great Recession (14% and 19%, respectively), then declined and fluctuated subsequently. In general, data for the latest years indicate a weakening of reliance of Baltic Sea economies on FDI.

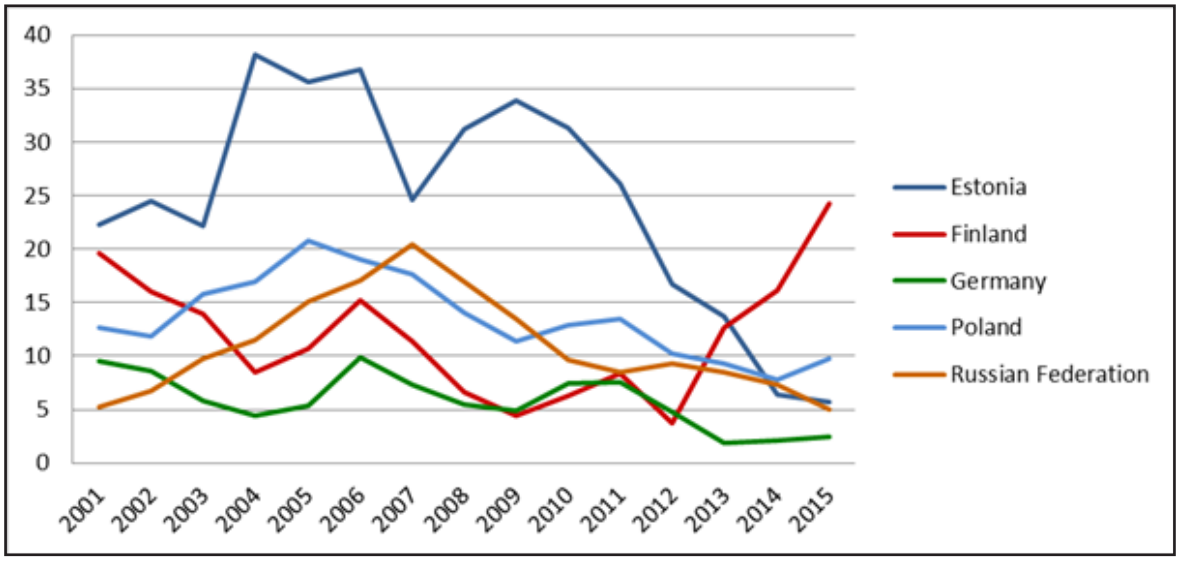
Figure 3. Ratio of FDI inflows to GFCF in the Baltic Sea region and in comparison with the world average, 2001–2015 (%)



Note: Unweighted average of the Baltic Sea region economies.
Source: Author's calculations, based on UNCTAD data.

A closer look at the four major economies (Finland, Germany, Poland and the Russian Federation), as well as Estonia, the country that traditionally used to be the most inward FDI-dependent in the region (Figure 4) prove that, in general, the dependency of Baltic Sea economies on inward FDI tended to diminish over time. To eliminate the effect of year-to-year swings, we analysed the trends of these five economies with the help of three-year moving averages.

Figure 4. Ratio of FDI inflows to GFCF in selected economies, three-year moving averages, 2001–2015 (%)

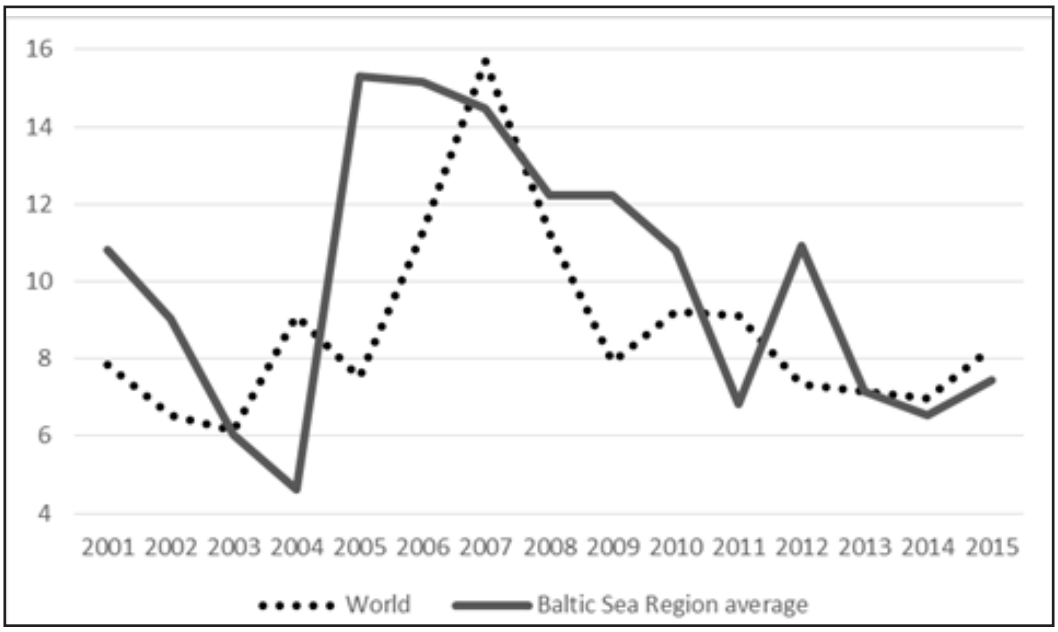


Note: Unweighted average of the Baltic Sea region economies.
Source: Author's calculations, based on UNCTAD data.

The decline of the inward FDI to GFCF ratio has been the most spectacular in Estonia. The country had very high ratios until 2010 (an exceptional ratio of 60% in 2005 and still 36% in 2010), then the ratio declined sharply, and in 2015, fell below the world and Baltic Sea average (4%). In three other economies (Germany, Poland and the Russian Federation), a similar trendline, but with less salient extremes, can be detected: rising inward FDI per GFCF ratio until 2007, and a declining one afterwards. Finland broke that trend as its ratio saw a rise in recent years, due to very high raw levels in 2014 and 2015.

In the case of the ratio of outward FDI to GFCF, which indicates to what degree economic activities are related to assets owned by MNEs abroad, the unweighted average of the Baltic Sea region economies exceeded the world average in eight years, was below the world average in six years, and the two ratios were equal in one year (2013). In 2005 and 2009, the performance of the Baltic Sea region was stronger than the world average (Figure 5). The ups and downs of the two trendlines were similar. However, the decline in the world average started after 2007, while the decline in the average of the Baltic Sea region started earlier, after 2005.

Figure 5. Ratio of FDI outflows to GFCF in the Baltic Sea region and in comparison with the world average, 2001–2015 (%)

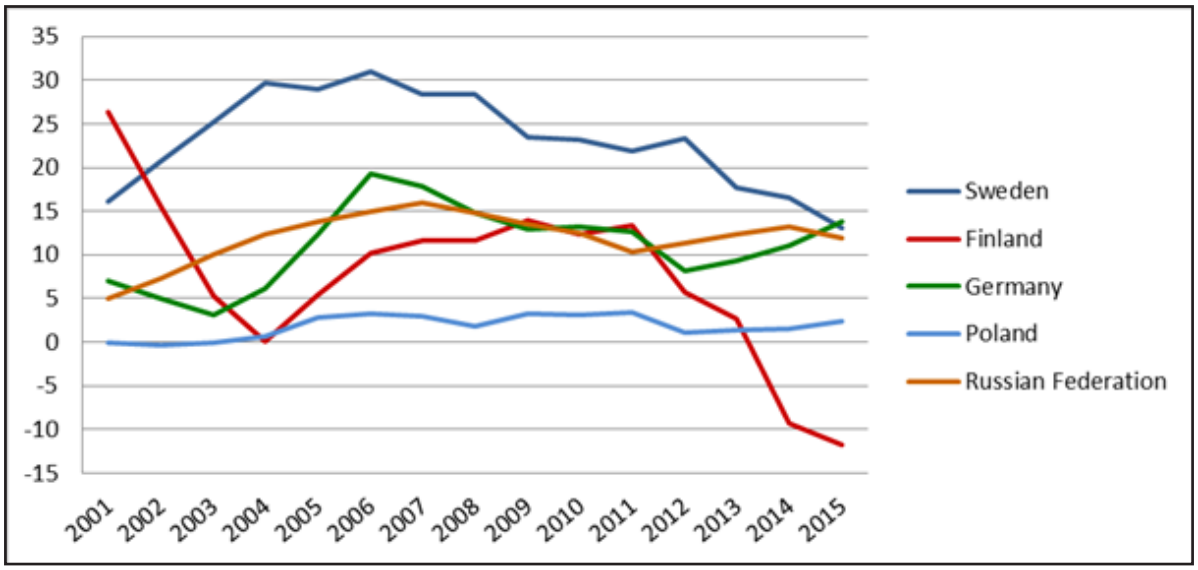


Note: Unweighted average of the Baltic Sea region economies.
Source: Author's calculations, based on UNCTAD data.

Looking at the three-year moving average of the ratio of four major economies (Finland, Germany, Poland and the Russian Federation), as well as Sweden, the country that is (another) traditional major capital exporter in the region (Figure 6) reveal the outward FDI flows of which of these economies explain most of the decline. In Sweden and in Finland, the decline was the most salient (especially in Finland, in which the outflows turned to negative in 2013–2015), while ratio was somewhat more resilient in the Russian Federation, and it even increased in Germany over time. The latter finding corroborates the observation that German capital is increasingly an engine of growth in Europe. The subsequent section will also show that indeed, Germany plays a pivotal role in intra-Baltic Sea FDI flows.

In conclusion, the Baltic Sea region economies are usually FDI intensive. Some of them have relied more on inward, others on outward FDI, and some of them saw important changes in their reliance on FDI. In general, the relative importance of FDI has decreased over time, especially after the Great Recession.

Figure 6. Ratio of FDI outflows to GFCF in selected economies, three-year moving averages, 2001–2015 (%)



Note: Unweighted average of the Baltic Sea region economies.
Source: Author's calculations, based on UNCTAD data.

4. Evidence on intra-Baltic Sea region FDI cooperation

Recent methodological developments in FDI statistics allow us to derive more exact conclusions on the real importance of intra-Baltic Sea FDI. One of them is the application of the directional principle. The other is the exclusion of the special purpose vehicles (SPV), which do not constitute real productive capacity building, only financial engineering. However, these innovations still exclude only part of the 'indirect FDI' (Kalotay 2012), as the new methodology does not necessarily show the ultimate beneficiary investors. Another price of the more precise methodology is that many countries have only shorter time series, covering recent years. With those reservations in mind, we can draw important conclusions on the current state of intra-Baltic Sea FDI.

It is possible to calculate the share of the Baltic Sea region in the FDI inflows and outflows of four economies (Estonia, Germany, Lithuania and the Russian Federation) over the period 2007–2015 (Table 3). These longer term series show that Germany is at the centre of intra-Baltic Sea production networks. FDI flows were also important between neighbouring countries, or countries with traditional economic links between each other.

Table 3. Share of the Baltic Sea region in the FDI flows of selected economies, 2007–2015 (%)

Economy	Share of Baltic Sea partners in inflows	Key sources of inflows	Share of Baltic Sea partners in outflows	Key targets of outflows
Estonia	63.8	Sweden, Finland	46.8	Latvia, Lithuania
Germany	-0.1	Denmark	11.2	Poland, Russian Federation
Lithuania	42.8	Sweden, Germany	52.1	Latvia, Estonia
Russian Federation	9.8	Germany	4.2	Germany

Source: Author's calculations, based on national and OECD data.

Intra-grouping cooperation was particularly important for Estonia: 64% of the inflows originated in other Baltic Sea economies and 47% of the outflows targeted the Baltic Sea region. Lithuania had also very high percentages: 43% in inflows and 52% in outflows. In the case of the Russian Federation, Baltic Sea partners

accounted for 10% of inflows and 4% of outflows. For Germany, Baltic Sea partners accounted for 11% of outflows but their share was slightly negative in inflows (as divestments exceeded new investments in the calculation of net numbers). The tabulation of results also indicates the names of the key partner countries. In Estonia's inflows, Sweden and Finland dominated, in the inflows of Lithuania, Sweden and Germany. In the inflows of the Russian Federation, Germany was a major partner. As for the inflows of Germany, although they were generally negative, Denmark was still an important source of capital. In the outflows of the two small Baltic States, they were each other's important partners. For the Russian Federation, Germany was not only an important inward FDI partner but also an important outward FDI partner. In the outflows of Germany, Poland and the Russian Federation were key target destinations.

For 2013–2015, it is possible to analyse the geography of FDI for nine Baltic Sea economies (with the exception of Norway, see Table 4). However, it was not possible to calculate shares in the outflows of Finland, which were negative overall. It is also to be noted that shares may be higher than 100% if in other relations, divestments dominated. In general, these series, due to their shortness, reflect a high degree of volatility, and have to be treated with more caution that longer-term data.

Some of the shares of the Baltic Sea region were negative due to divestments. Nevertheless, even in economies in which the ratios were negative, main partners were indicated in case they had positive values. Germany was a recurrent key partner (in the inflows and outflows of Poland, the Russian Federation and Sweden, and in the outflows of Denmark). The rest of the list of key partners consists of neighbouring counties. In the case of the countries for which data for the longer period was also available, some geographical shifts can be observed between the two periods. In the case of Estonia's inflows, the Russian Federation replaced Sweden among the key sources of FDI. In the outflows of the country, Finland became the key destination, replacing the two other small Baltic States. In the outflows of Germany, Sweden replaced the Russian Federation as a key destination. In the outflows of Lithuania, Poland replaced Estonia among the key host countries. However, Germany kept its strategic place in the inflows and outflows of the Russian Federation.

Table 4. Share of the Baltic Sea region in the FDI flows of selected economies, 2013–2015 (%)

Economy	Share of Baltic Sea partners in inflows	Key sources of inflows	Share of Baltic Sea partners in outflows	Key targets of outflows
Denmark	59.6	Sweden, Norway	27.9	Germany, Finland
Estonia	32.9	Russia, Finland	47.0	Finland
Finland	30.1	Sweden	-	-
Germany	-12.0	-	12.6	Sweden, Poland
Latvia	48.2	Russia	83.2	Lithuania, Russia
Lithuania	-60.9	(Sweden)	100.6	Latvia, Poland
Poland	-0.6	(Germany)	-34.3	(Germany)
Russian Federation	2.4	Germany	4.3	Germany
Sweden	126.2	Germany	43.2	Norway, Germany

Source: Author's calculations, based on national and OECD data.

5. Conclusions

This article has examined the ups and downs of inward and outward FDI since 2001 in the Baltic Sea region. It has been shown that after the Great Recession, the resumption of FDI growth has been sluggish and volatile. The region is still waiting for a recovery to the levels of the pre-crisis flows. Nonetheless, both inward and outward FDI continue to be important factors in economic development, with the latter playing a more dominant role in the majority of countries (but not in the three small Baltic States or Poland). Also for some countries, especially the smaller ones, intra-Baltic Sea region FDI links are of capital importance. Germany, and to some degree Sweden are privileged sources of inward FDI partners for many other countries. Mutual links between neighbouring countries with cultural affinity also tend to be strong. The prospects of FDI in the Baltic Sea region are cautiously optimistic, due to strong fundamentals in various countries. However, some countries still face structural problems, especially the ones that started their transition to market economy only a generation ago. As for the Russian Federation, its FDI patterns are shaped and sometimes constrained by the fact that the country continues to rely on natural resources exports. Another factor holding back the expansion of FDI is the negative impact of political and structural problems of intra-EU and pan-European cooperation.

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Escape from isolation

Taavi Veskimägi

1. From regional to global

"What got you here won't get you there" is a sentence that comes from the title of a book by an American executive coach Marshall Goldsmith. It is an universal idea, which can be applied well in a world where constant change is the new reality in every field of life. Without a doubt, it is suitable to describe what is going on in the field of energetics today. The global energy system is undergoing revolutionary changes in terms of both substance as well as technological aspect. We depend on these trends in a good and bad sense. John Kotter, one of the most famous leadership experts in the world, says in his book *Leading Change* that continuous readiness for change and ability to adapt are becoming the main success factors. And not only the ability to adapt – it is important to try to create new jobs and well-being in the Baltic Sea region based on global trends in energetics. It is our shared challenge to create new value and offer the world the best we have thanks to our knowledge, skills, and experience in energetics.

2. Global trends in energetics

Firstly, energetics is moving from local to global. Market liberalisation, new technologies, and fuels have liberated the development of the energy sector from the restraints of national borders. This is something that works in our favour. The energy sector can grow outside of the Baltic region in these new circumstances. For example, there is no such thing as the Nordic-Baltic market anymore when it comes to selling electricity; there is a common and increasingly integrated market from Gibraltar to Nordkapp.

Our shared ambition must be to move from regional to global and not to see the energetics sector in the Baltic Sea region as a secondary and merely local energy supplier, but instead as an export sector that is capable of offering all services and products created here on much bigger markets. The energetics sector must break out of the borders of the Baltic Sea region.

Secondly, energetics is moving from central to dispersed distribution. As it is nowadays, energetics is characterised by the asymmetry of processes. Local nation-based energetic arrangements are moving towards global market-based arrangements, however, at the same time the weakening of the centralised systems and strengthening of local solutions can be clearly seen. Local small-scale electricity production is more and more stepping on the heels of centralised grids and production. If the previous understanding was based on centralised power plants like Olkiluoto, Forsmark or Narva power plants and the total consumption of the nations, then now every household and company must be viewed separately and a unique solution that best satisfies the needs of each consumer must be found.

Thirdly, the energy industry is being digitally revolutionised. The use of information and communication technologies when managing energy systems has grown immensely. What kind of work can/should be done by digital technologies? If we can answer this question, we can create new platforms and applications that can be scaled globally into large energy systems. This is where many truly attractive value propositions may arise from, starting from large-scale integration of renewable energy with the grid, development of energy storage technologies up to using consumer flexibility to remotely control home appliances based on price signals.

All this presupposes the availability of data as real-time as possible, the capability to move large quantities of data, and high demands on cyber safety and protection of personal data.

In my view, electrical grid digitalisation will serve as the basis for the vision for the Baltic Sea energy sector development, which transcends the national or corporate boundaries, to be a frontrunner in global energy sector digitalisation.

3. Estonian-Finnish common energy infrastructure

Elering and Fingrid finished the construction of the second Finnish-Estonian electricity transmission connection EstLink 2 in 2014. This project is a prime example of the importance of having a common understanding for a project to succeed. To keep a technically complex 320 million euro investment involving two countries in schedule, which was set exactly five years prior, is an accomplishment on its own, carried out thanks to fraternal relations between Estonia and Finland.

After the EstLink 2 project was finished, the transmission capacity between the countries was 1000 MW and we could talk of an Estonian-Finnish common electricity market. The consumers in Tallinn or Harju County are supplied with electricity by both Olkiluoto power plant in Finland and Narva power plant in Estonia. This arrangement requires trust. The cooperation between Elering and Fingrid has shown this trust to exist. The main prerequisite has been the stance that everything that was promised to be done will be done.

We are planning to repeat the same success story on the natural gas market. We have started constructing the natural gas pipeline Balticconnector between Estonia and Finland to open the natural gas market and this has become a reality. The Baltic-Finnish natural gas market cannot be established without the Balticconnector.

Picture 1. New energy infrastructure in the Baltic Sea Region

The two-year-long cooperation between the countries has been fruitful. In 2016, Elering signed a cooperation agreement with the Finnish developer to construct a submarine pipeline and a 200 million financing agreement with the European Commission with the objective to finish the 300 million Estonian-Finnish natural gas connection by 2020. The Balticconnector will connect the Estonian and Finnish natural gas networks with a 150 km natural gas transmission pipeline, which runs under the sea for 80 km and has compressor stations on both sides of the Gulf of Finland.

The project cannot be viewed separately, but instead in connection with creating the natural gas market in the Baltic-Finnish region. In addition to the connection between Finland and Estonia, it is necessary to strengthen the connections between Estonia and Latvia up to the proposed Lithuania-Poland GIPL connection and Klaipeda LNG terminal. The changes will serve the interests of the consumers and producers and increase the security of supply. Balticconnector provides Finland access to Inčukalns and Klaipieda gas storage facilities and, in fact, access for the whole region to the Western European natural gas market of high liquidity. We have witnessed a positive effect on natural gas prices in the region after only a few changes. And more importantly, the Gazprom's and Russia's natural gas monopoly have been broken, many suppliers have entered the market, the supply chains have diversified, and natural gas is not to be discriminated due to energy security reasons. Natural gas has become as reliable energy source as any other.

4. Fully integrated Nordic electricity market

Electricity is a commodity the importance and meaning of which can be understood best when it is missing. This is from the perspective of people's everyday lives as well as from a more general viewpoint of a nation's economic growth. The effect of the security of supply to a country's economic development and electricity prices has been studied worldwide. The results are unquestionable: the most expensive electricity for the consumer is energy not served. Seemingly cheap electricity that does not cover the costs related to electricity production and transmission usually turns out to be a lot more expensive in the end. The real price quickly becomes evident through reduced reliability of the electrical system and constant power outages.

Many people from former Soviet Union countries remember empty store shelves. Even if something was available, it was of low quality, unattractive, and unusable. This was the result of regulated planned economy. The electricity economy is no different. Regulated electricity prices due to which electricity producers are forced to sell their production at a loss do not motivate the producers to invest in higher production capacity. This results in electricity deficit. However, in order to keep the electricity system working, the supply and production must be balanced. If the production is insufficient, some consumers must limit their consumption; if this is not done, the electricity system just shuts down.

The best thing that keeps the lights burning at homes is a functioning electricity market. When it comes to the energy market, we are distinguished from some part of Europe by the belief in the market. We share the same value that better electricity prices for the consumers and better selling options for the producers ensure a well-functioning market. The market ensures investments to production capacities that are the most cost efficient and technologically efficient when it comes to environment and security requirements. Nothing gives better indications for investments and sets the prices better that an effective market. All subsidies are, of course, a distraction. May it be fossil fuel or renewable energy dotation. The intensifying fight in Europe to reduce the subsidies, which are too much of a burden to consumers, must be the centre of our activity when developing the local market.

There is no point in talking of connections, especially of international connections, if we do not talk about the market. Connections without a working market mechanism are pointless. The benefits gained from the common market and good connections by all the consumers in the region allow leaving unprofitable power plants that would only be necessary for security of supply unbuilt.

5. Natural gas market will follow

Many things in life remain undone because they are never started. Sometimes, it is necessary to start even if you know the goal but not the road that you need to take to get there. From time to time, it is necessary to burn the bridges behind you to be mentally more motivated to achieve the goal. Fridtjof Nansen said that you should burn the boats behind you, so this way no one wants to turn around and you are dedicated to going forward, when describing his plan of crossing Greenland on skis.

In contrast to the electricity market, where a well-functioning regional market has been established, the natural gas market is yet to be liberalised and opened to competition. We at Elering also burned the bridges when we bought the Estonian natural gas transmission network from the owners of Eesti Gaas, including Gazprom, with the purpose of repeating the success we had achieved when opening the Estonian electricity market to competition and establishing Nordic-Baltic common electricity market. Constructing the Balticconnector had become inevitable.

It is vitally important to connect Finnish, Estonian, Latvian and Lithuanian markets, which are small in the sense of natural gas consumption, in order to achieve a market with functioning competition. Finnish or Baltic markets do not qualify as gas markets separately. Our goal in developing a common market is to establish strong infrastructure (hardware) and harmonised market rules (software). It must be possible to trade natural gas freely and effectively on the Baltic-Finnish market, across national borders.

6. Do we trust the neighbours?

Regional market and a regional network with strong international connections require regional solutions when assuring security of supply. This is the most economically sensible approach for the society. For example, the power plant on River Daugava is as reliable as the Narva power plant when it comes to security of supply to the inhabitants of Valga. It is important to understand that Eesti Energia is only one market participant among other electricity producers. The security of electricity supply is not guaranteed for Estonian consumers by Narva power plants but all power plants and connections in the region.

The concept that there is only one market and grid in Europe will lead us to a situation where the Estonian electricity market no longer exists. Estonia with the Nordic and Baltic countries forms a well-integrated Baltic Sea region electricity market, which in turn is a part of the pan-European electricity market. There are hours where the price of electricity is the same from Portugal to Nordkapp.

If we construct cross-border connections paid by the consumers, it would be wrong and too costly to let the same consumers pay for non-competitive production capacities in Estonia, just in case. If we want to follow the 110% production capacity requirement, then this will make electricity more expensive for our consumers by six euros per megawatt-hour.

The recent discussion on electricity production in Estonia clearly showed that we have no intrinsic faith in the functioning of the Nordic-Baltic electricity market. Apparently, it is great to have a market, but security of electricity supply via a working market does not sound credible to either left-wing or right-wing politicians. The European Union regulations are specifically based on the logic of ensuring the security of supply in member states through functional markets. The common market and common network would seemingly give us a 25% reduction in required investments in electricity production, compared to a situation whereby every country would maintain a domestic balance of consumption and output.

The smaller the system, the less efficient the investment is in terms of the consumption load of the country. This is where Estonia reaches an important and high-cost choice: do we continue with the strategy, which states that while integrated markets and interconnections are nice to have we still need to have all the production capacity in our "back yard" just in case? From the security of supply viewpoint, is a power station in Finland worse than a power station in Estonia? That approach is seemingly based on the belief that in some non-wartime crisis, the other Nordic and Baltic countries may become so self-centered that treaties would cease to work. This is a fundamental issue. Do we believe that there can ever be a situation where Finland would shut off our power?

7. What's next? Digitalisation of energy systems

Estonia's and Finland's digital agendas are similar and our success stories have been recognised more widely. This momentum should be realised further by looking for synergies that could potentially arise from joint actions and solutions. In this, the energy sector is an emerging opportunity. Elering intends to be the frontrunner in digitalisation of the energy system, but this cannot be done without partners.

Now there is no return from smart grids. We are going through a set of principal shifts where the deepening processes of regionalisation on global level and decentralisation in the form of distributed generation and smart communities on local level run in parallel; a high level of renewables needs to be integrated into the network; flexibilities from generation, storage and demand are increasingly needed; different software applications and automated control solutions are more easily available and affordable. Also, consumer awareness is improving, whereby consumers are not forced to buy electricity and gas from monopolistic incumbents but instead are free to choose between many suppliers providing combined services involving elements of energy savings and demand response, all based on dynamic price signals and actual needs. Clearly, information and communication technology is the enabling factor here.

As our response to this trend, Elering is developing a smart grid platform called Estfeed that allows network companies, energy producers and consumers to interact more efficiently and make the data collected during energy consumption understandable and usable for end users. It started in 2012 when within just a few months we developed a central data hub containing hourly readings from every single electricity meter. Then the aim was to ensure neutral access to metering data for all consumers and generators, as well as facilitate supplier switching in order to be prepared for full market opening a year later.

Now the objective of the Estfeed platform is to create a comprehensive smart grid that allows market players to interact securely and transparently. Estfeed brings together data sources and applications. Data sources range from electricity, gas and district heating smart meter readings to weather forecast and energy day-ahead prices. Estonia completed a full roll-out of smart electricity meters in 2016. Estfeed is a portal that gives

developers a chance to access this information flow. By interpreting and combining data, they can create useful applications for themselves or their customers (end consumers). The aim of the applications is to create efficiency, either for cost optimisation or for end consumers.

Estfeed is an integrated part of the Estonian public information exchange platform called X-Road, which has also been deployed by the Finnish government for some public functions. X-Road translates into high security standards. Elering as a transmission system operator is a neutral party and is therefore well placed to provide that kind of data exchange service to the public in a reliable and independent manner. The growing importance of information and communication technologies is becoming central in running the energy system.

8. Synchronising the Nordic-Baltic electricity systems

We northerners understand that every year there comes a day when you step outside in the morning and realise that everything has changed. The spring has come. There may be winter storms and cold weather form time to time but nature moves undeniably towards the spring. This is the trend. It is the trend that counts.

The Estonian and Baltic energy system moves away from the sphere of influence of the Russian energy system with unstoppable force. In order to guarantee energy security in the region, we must turn our energy system from east to west and come out of isolation – break away from Russia and merge with Europe. Integrating the Baltic electricity system with the Nordic system is the next step in a line of steps that the Baltic states have made in joining the European Union, NATO, OECD, Eurozone and other unions that guarantee the interests of the region are considered the best way possible.

This step also has a much broader meaning, the same way that joining the Eurozone did; it was not only an economical and financial step, but had a wider meaning of strengthening the security, taking part in Europe's policy making, and sharing the same values. Desynchronising form the Russian electrical grid is not a unique step. The same was done by Hungary, the Czech Republic, Slovakia, and Poland in 1995. In 2002, Romania and Bulgaria left the Russian electrical grid.

At the moment, the Baltic electricity system is in the same grid with Latvia, Lithuania, Belarus and Russia. It is a complete system, an organic whole. For the past seven years, we have worked intensively to disconnect the Estonian energy system from the east and reconnect it with the west. It is necessary to reduce the systemic risks of energy security.

We have worked with different possibilities for realising this idea. The first solution would be to synchronise the Baltic electricity system with Central Europe, but Poland is dragging their feet here. Now, we have turned our eyes to the Nordic countries with whom we share a common electricity market and cables. And most importantly, a common understanding of the development of the electricity market and electrical grid. Synchronised work with the Nordic countries is possible from the technical viewpoint, but is certainly unconventional and would pose a great technical challenge. Possible technical complexity has been the main hindering factor when developing this scenario.

9. Thinking beyond borders

Few days ago, when spring arrived, I began to wonder why not view the projects of the Helsinki-Tallinn tunnel, and desynchronisation of the Baltic electrical system from Russia and synchronisation with the Nordic countries jointly? The realistic date for both projects is after 2030. If we use the service tunnel of the proposed tunnel to lay electrical cables and build substations, we will connect the Baltic States with the Nordic countries. I asked Elering's engineers for their opinion on this. The feedback was positive and in principle, it would be possible.

Connecting the electricity systems this way, in particular constructing the Tallinn-Helsinki tunnel, is a costly project, which makes deciding more difficult and tends to push the works into distant future. Combining the projects could significantly increase the chances of realisation for both of the projects. There is, undoubtedly, a lot to analyse but we could potentially create a synergy that would reduce the societal costs and help to bring both of the large projects forward in time.

10. The axis of our shared life

This heading is borrowed from a speech *All that is beneficial to Estonia is beneficial to Finland* by former Estonian president, Lennart Meri[1].

The Estonian-Finnish energetics vision could be to offer the best solutions in the world when it comes to digitalising the energetics sector and to constructing the Finnish-Estonian energy infrastructure as one entity.

The common infrastructure of the Gulf of Finland strengthens our positions as a global development centre in an ever-growing competition. Carried by this idea, we have established two EstLink connections between Estonia and Finland, and a common electricity market with Fingrid OY; at the moment, we are preparing to construct an Estonian-Finland natural gas connection and common natural gas market with Baltic Connector OY by 2020. We also are working towards synchronising the Nordic-Baltic electrical systems by 2030.

When we opened the EstLink 2 connection between Estonia and Finland, we could say that the 80 km distance between Helsinki and Tallinn shortened by a few kilometres. Using the same logic, the Balticconnector will shorten the distance between Estonia and Finland by at least another five kilometres. Looking further ahead, if we can desynchronise the Baltic electric systems from Russia and synchronise it with the Nordic countries – ideally by using the service tunnel of the proposed Helsinki-Tallinn tunnel – then Finland's coastline will be visible as soon as between the Naissaare and Aegna islands. These are good projects that can be done with an easy heart.

1 Lennart Meri at a formal reception in the honour of Martti Ahtisaari, the President of The Republic of Finland, during his visit to the Republic of Estonia on 31 May 1994 (https://vp1992-2001.president.ee/est/k6ned/K6ne.asp?ID=4233)

Nord Stream 2: energy for Europe through the Baltic Sea

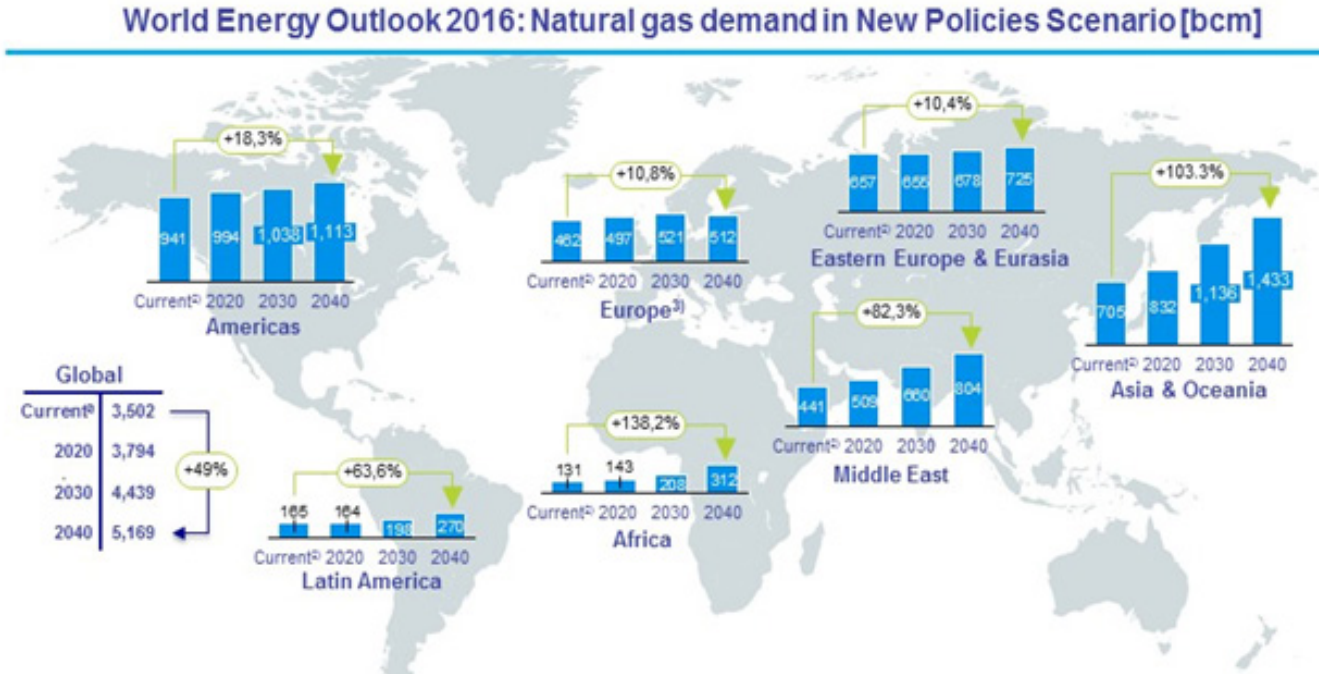
Tapio Pekkola

Nord Stream 2 will be a very competitive, modern gas pipeline system serving the EU's energy needs and contributing to its future energy security. It will also benefit the economy of the Baltic Sea region, creating work, infrastructure and business opportunities. The gas will flow from Russia's Baltic coast along twin 1,200 km pipelines through the Baltic Sea, without interim compression, to Germany's Baltic coast, where connecting pipelines will link it to the EU internal energy market.

The downstream transport of gas supplied by Nord Stream 2 to the European gas hubs will be secured by the NEL pipeline and newly planned EUGAL pipeline, with a capacity of 51 billion cubic metres, bcm), developed simultaneously by separate transmission system operators.

From the pipeline's landfall on Germany's Baltic coast the gas can be transported through the EU gas network onwards to the hubs in North-Western Europe, where domestic supply is decreasing most rapidly. The other part of the gas by Nord Stream 2 will feed further into the European market via the Central European Gas Hub in Baumgarten, Austria. This hub offers the ideal physical connectivity with surrounding countries, and can handle large flows to various markets, including Central, East, South-East and South European countries, boosting their markets for natural gas to a comparable level of liquidity and competitiveness as markets in North Western Europe.

Picture 1. Global gas demand is set to grow by about 50% by 2040. It is increasing demand competition



[1] Demand growth leads to increased need for LNG because production and consumption locations further diverge from each other. I.e. Asian region is among the largest consumers globally but has close to no natural gas resources itself or in proximity of a pipeine, [2] Current 2014, [3] Europe includes a different sample of countries compared to EU 28 e.g. Eastern Europe is not included here
Source: IEA WEO (2016).

1. Importance for Europe

With this pipeline Nord Stream 2 will be advancing the reliability, sustainability and affordability of gas supply to Europe and will reinforce the long-term security of energy supply. Nord Stream 2 aims to compensate for the continuing decline in the EU's domestic production of natural gas and to safeguard against supply risks.

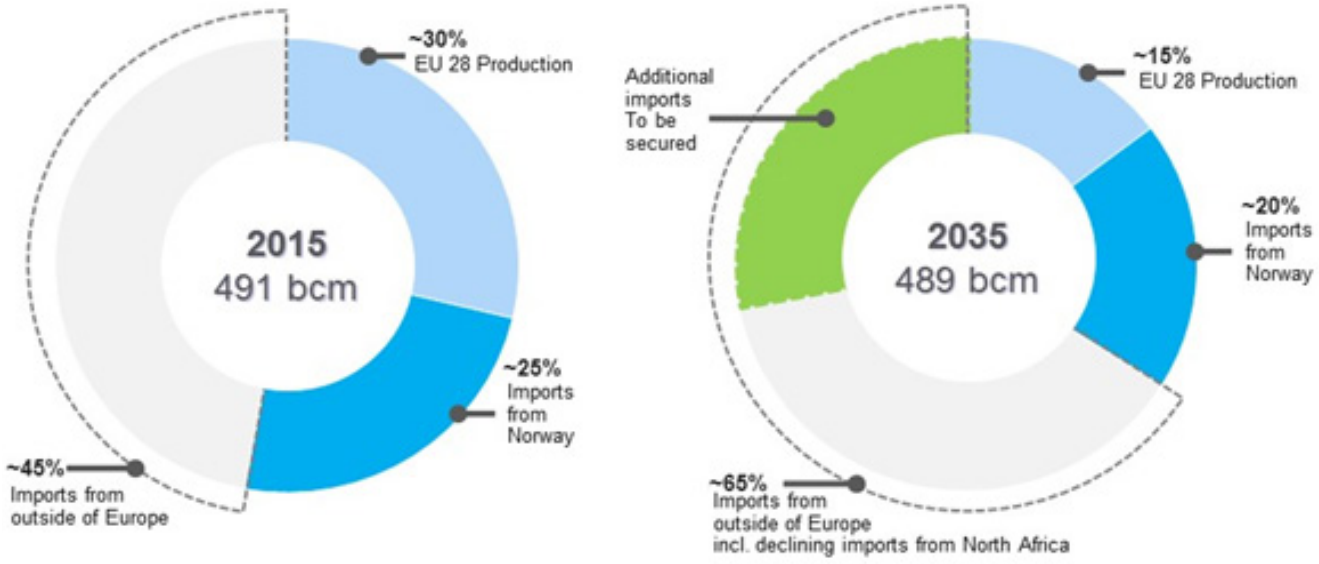
The context of the decision to develop the Nord Stream 2 project is the expected evolution of the EU energy market.

The EU's domestic gas production has fallen in recent years, and it is expected to further decline within the next 20 years by approximately 50%, or 70 bcm, while traditional suppliers from Norway (-25 bcm) and North Africa (-30 bcm) will not be able to continue supplying Europe at today's level. At the same time, gas demand in the EU is projected to remain steady.

This means that additional infrastructure will be necessary in order to fill the resulting medium-term "import gap" of about 100 to 120 bcm and secure against supply-side and demand-side risks, also occasionally in the shorter term. The import gap will be filled both by LNG and piped gas from Russia. The respective share in imports will be set by the market. Nord Stream 2 will provide the capacity to supplement other supply options, not replace them. It will be a very competitive and reliable way to transport additional gas to the market from Europe's long-term energy partner.

The ability of Nord Stream 2 to deliver up to 55 bcm per annum (bcm/a) of gas will support and stimulate the free flow of energy across the EU. It will supply the EU's common internal gas market from which all EU countries can procure gas under competitive market conditions.

Picture 2. Estimated European gas production and need



Note: Total demand includes all gas sourced from European market, EU countries plus Switzerland and western imports by Ukraine.
Source: Based on Prognos 2017.

2. EU-wide perspective

Looking at the situation from an EU-wide perspective, another major benefit for Europe will be that Nord Stream 2 will help to strengthen the internal market for the benefit of all EU countries. The best guarantee for security of supply is a functioning competitive internal market for gas from which all EU countries can obtain gas supplies. As well as additional gas supplies to the internal market, this requires liquid hubs and infrastructure to help energy cross borders.

The additional Nord Stream 2 supply route will facilitate the use of existing capacity and trigger development of new infrastructure (cross-border interconnectors, reverse flow etc.) in the region. This would allow all EU countries to benefit from a well-supplied internal EU market rather than relying only on individual direct supply pipelines from outside the EU.

The new project will support the security, affordability, and sustainability of energy in Europe, aligning with the objectives of the Energy Union Communication by the EU. The EU's strategy has been divided into five thematic policy areas, called "mutually-reinforcing and closely interrelated dimensions". As can be seen from this article, Nord Stream 2 will make a contribution in all five policy areas:

1. Energy security, solidarity and trust
2. A fully integrated European energy market
3. Energy efficiency contributing to moderation of demand
4. Decarbonising the economy
5. Research, innovation and competitiveness

3. More competition and competitive pricing

This is because the emerging more inter-connected EU internal energy market will mean that gas can flow to wherever the market demands it. Increased supply – from whatever source – will produce greater liquidity at the hubs and lead to greater competition – for the benefit of energy consumers.

Greater liquidity in the EU internal market for gas will stimulate competition and competitive pricing. For this to happen it will be important to ensure access to sufficient gas supply for EU industries. Nord Stream 2 will respond to this need by creating new import capacities for new volumes of gas to help meet part of the EU's future demand. The planned 8 billion euro pipeline system will clearly be a strong competitor.

It is noteworthy that some of the most vigorous opposition to the Nord Stream 2 project comes from countries that currently benefit from fees for the transit of Russian gas or have existing or planned pipelines or LNG terminals for which they may fear that Nord Stream 2 could be a competitor.

Picture 3. Gas European transit system

Source: International Energy Agency and BEIS.

4. More flexibility

In the recent past the majority of gas contracts were linked to the price of oil, often with strict take-or-pay obligations. Over the past five years or so changed market conditions have led the EU's main suppliers including Gazprom to review contract terms with many key customers, introducing more flexibility, discounts and an element of spot pricing.

The combination of increased supply options, increased interconnection and reverse flow in the EU's internal gas market is leading to more market pricing and more competition. Over time this will lead to lower prices for consumers and better competitiveness for industry and European business.

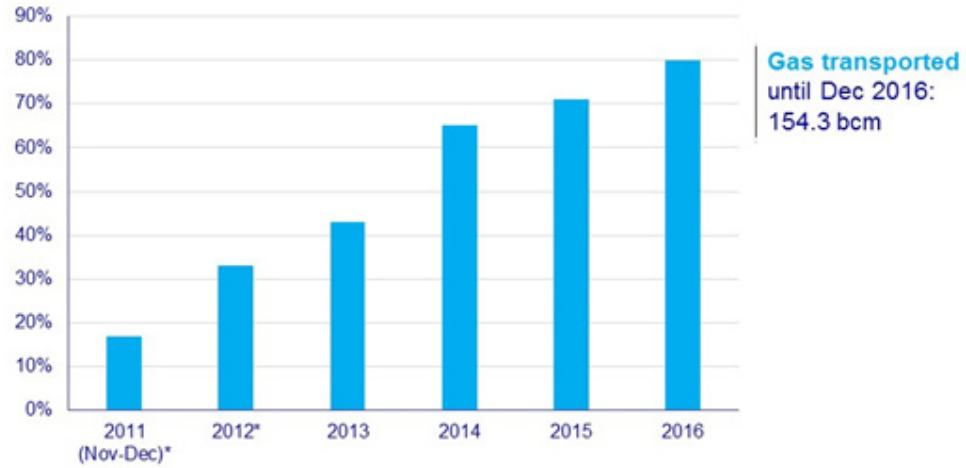
The increased interconnectivity has led to greater price alignment everywhere in Europe. There is now little difference between energy prices in 'mature' and 'developing' markets. For example, natural gas prices in the Czech Republic have already converged with German gas hub prices and this trend is expected to continue with the development of interconnectors in other (still 'disconnected') Member States in Southeast Europe.

5. Importance for Europe's energy supply

The Baltic Sea took on great importance for the future of the continent's energy supply when line 1 of Nord Stream came on-stream in November 2011 and line 2 in October 2012. Crucially the project came in on budget and on time, and a unique monitoring system subsequently established that the environmental impact of

construction was minor, localised and short-term only. By 2015 the pipeline was achieving a capacity utilisation of over 70%, rising to 80% in 2016.

Picture 4. Nord Stream pipeline operating at 80% capacity



* Based on 27,5 bcm per year, all other figures based on 55 bcm

The Baltic Sea region has also seen significant developments in LNG as a way of importing gas from further afield. For example, in the same year that the first of Nord Stream's two lines came on stream Poland started construction of its €950 million LNG terminal at Świnoujście. The terminal has an unloading jetty for large LNG tankers, two storage tanks and regasification train. The terminal's initial regasification capacity is 5 bcm/a, and with the construction of the third tank its capacity is due to expand to reach 7.5 bcm/a satisfying approximately 50% of Poland's annual gas demand.

Market developments in recent years mean that consumers in Europe currently have a wide choice of alternative gas supplies – both in the form of LNG and pipeline gas, and they appear to welcome the increased competition.

However despite ample LNG for world markets, the EU imports only around 10% of its demand at the moment – which is a result of how the price of gas for pipes and LNG moves. By the end of 2016, total regasification capacity in the EU and Turkey (23 terminals in the EU-28 and two in Turkey) stood at 216 bcm. This is theoretically equivalent to 40% of EU demand and 55-60% of EU gas imports - though in reality bottlenecks mean that the gas cannot always be available where it is needed. In 2016 Norway and Algeria respectively actually exported 107 bcm and 34 bcm to the EU.

This is the competitive market in which gas from Nord Stream 2 will compete and – in so doing- will be in tune with the EU's Energy Union principles and will help to fulfil the targets of the Energy Union. Especially putting the market to work and creating interconnectors and reverse flow and making the grid more effective, all of which means security of supply, lower prices and better capacity in the market.

6. EU filling the gaps

Looking to the future: the EU has decided to support many "Projects of Common Interest" (PCI) to improve the working of the EU energy market. This is helping to produce the already-mentioned more diversified inter-connected EU internal energy market which will stimulate more competition and greater use of spot pricing and trading at the hubs.

EU support is also addressing the Baltic energy island issues, for example the proposed Estlink electricity interconnector between Finland and Estonia. The EU will also contribute 60% of the €444 million budget for GIPL (Gas Interconnection Poland-Lithuania), the completion of which is scheduled for 2021. Lithuania commissioned its own floating LNG terminal in 2015.

The European Commission has allocated €187.5 million for construction of the offshore pipeline Baltic Connector between Finland and Estonia (capacity of 2.6 bcm/a). When completed in 2019, it will connect the Finnish gas grid to gas grid of the Baltic States. Once GIPL will be completed in 2021, these countries will all be connected to the European gas grid.

In Finland, an LNG terminal was opened in Pori in 2016, and the next one will be opened in Tornio. These terminals will not be connected to the Finnish gas grid. However, the planned Hamina LNG terminal will be connected to the national Finnish grid. These terminals will provide gas mainly for industry and traffic use.

However from the broader continent-wide perspective an even bigger requirement has emerged: the EU's climate change commitments will lead to a key role for gas at a time when gas production in the EU and Norway will be declining, leading to a requirement for substantial additional gas imports. Gazprom and five of Europe's largest energy companies have again chosen the Baltic Sea route to meet part of this additional gas import requirement. Between them Nord Stream 2 and LNG will be able to fill this "import gap". The market will decide the shares.

7. Energy and the Baltic Sea region

In recent years the Baltic Sea region has seen a massive change in its energy profile. Before 2011 the main energy concern in the Region were for the Baltic States, which were "energy islands". The Region's economies were only gradually picking up after the great financial crash and ensuing recession.

As much as 80% of Russian gas exported to the EU still came through the aged Soviet-era pipelines in Ukraine and plans to build a major 1,200 kilometre gas supply route through the Baltic Sea were thought by many to be over-ambitious: a privately-financed €8 billion investment, technical challenges such as munitions from World War II, the unique environment of the Baltic Sea, complex timing, permitting and project management issues and so on.

The Baltic Sea Region comprises nine countries. The five through whose waters /territorial or economic zones the first Nord Stream pipelines pass all approved the plans, the other four opposed the project and – to a greater or lesser extent - tried to prevent it being built.

A similar outcome could have been expected for Nord Stream 2, but this time round stronger political opposition to the new project emerged.

However the project company and its backers remain confident that all the necessary permits will be granted, so project development continues apace. Construction is due to start in 2018, and the new pipeline system is scheduled to be fully operational by the end of 2019.

8. EU climate change goals

The EU's 2030 climate and energy framework sets three key targets for the year 2030: at least 40% cut in greenhouse gas emissions compared to 1990 levels, at least a 27% share of renewable energy consumption, and at least 27% improvement in energy efficiency. An ample supply of natural gas will have a key role to play in achieving these targets over the coming decades.

According to the European Commission, the EU is on track towards meeting its EU 2020 targets in greenhouse gas emissions (i.e. -20% by 2020 compared to 1990). The key target for 2030 is to achieve a 40% cut in greenhouse gas emissions compared to 1990.

Gas is a highly efficient source of energy and emits by far the lowest CO2 of all fossil fuels when burned. The European Commission explicitly promotes a higher share of heat produced from high-efficiency combined heat and power (CHP). Natural Gas is an ideal partner for highly efficient CHP.

The EU has also set a target of at least 27% for the share of renewable energy consumed in the EU in 2030. Natural gas is an enabler of renewable energy sources: renewable energy sources are still intermittent and need to be backed up by reliable power generation, especially in electricity production. Gas is perfectly suited to working in tandem with renewables in a balanced energy mix, to provide secure, sustainable EU power supplies.

9. Transition to a low-carbon economy

Gas supports the competitiveness of EU industries: increased use of gas will allow the EU to achieve enormous cuts of greenhouse gas emissions while minimising the cost of these policies to EU industries. By 2030, potential savings may amount to €690 billion. Lower costs of transitioning to a low carbon economy will ensure that EU industries remain competitive on the international market.

The need for gas imports is bigger in North West Europe than elsewhere in Europe, and growing (from 32 bcm in 2015 to a projected 95 bcm in 2025). Southern Europe is facing a less problematic situation when it comes to the gas gap, but the developed gas market also serves Southern interests: more gas will be available from better-functioning hubs.

Uncertainties surrounding the future of the Southern corridor and the volumes that it will actually deliver increase the need to concentrate on other sources and supply routes. Shah Deniz is now expected to deliver about 8 bcm/a to Italy and 2 bcm/a to Bulgaria and Greece.

Gazprom's exports to the EU28 in 2016 are estimated at around 153 bcm. As EU-28 gas demand increased by around 6% to 447 bcm last year, according to figures from Eurogas, this means that the share of Russian gas in Europe's consumption went up to around a third. Most of the increase in Europe's gas imports (around 30 bcm in 2016) was covered by Russia (some 20 bcm).

10. Cutting greenhouse gas emissions

Providing sufficient supplies to the internal market will help keeping CHP available at affordable prices, while achieving efficiency of over 80%, fuel savings of 20%, and carbon emissions savings of 30%.

The advantages of gas for the reduction of greenhouse gas emissions are obvious: e.g. replacing coal with gas in electricity power production is the cheapest and fastest way of achieving carbon emissions. With 55 bcm of Nord Stream 2 gas can reduce roughly 160 million tonnes of CO_2 emissions which means 14% cuts emissions in power generation. Coal still occupies 26%, while gas amounts to only 15% in power generation.

It follows that Europe needs affordable gas to compete against cheap coal; otherwise, there will be more use of coal and more emissions. By providing new import capacity for additional volumes of gas, Nord Stream 2 will contribute to sufficient availability of gas.

11. 200,000 24-tonne pipes

Each of Nord Stream 2's two pipelines will have a design capacity of 27.5 billion cubic metres a year. Each line will require approximately 100,000 24-tonne concrete weight coated steel pipes laid on the bed of the Baltic Sea and have a constant internal diameter of 1,153 millimetres. The pipes will be welded together and laid on the seabed by specialist pipe-laying vessels along a carefully designed route agreed with the authorities. Each of the twin pipelines will be laid in three sections, which will then be joined together underwater using a process called hyperbaric tie-ins.

Picture 5. Pipes in the Kotka yard

Nord Stream 2 – like the first Nord Stream project – will transport gas supplied via the new Northern gas corridor in Russia from the fields on the Yamal peninsula, in particular the supergiant field of Bovanenkovo. The production capacity of the Yamal peninsula fields is in the build-up phase, while producing fields from the previously developed Urengoy area that feed into the central gas corridor have reached or passed their production plateau. Russia's Northern corridor and Nord Stream 2 are efficient, state-of-the-art systems, with an inlet pressure of 220 bar to the offshore system. Gas travels the full 1,200 km distance thanks to this 220

bar pressure generated at the Portovaya compressor station near Vyborg. The pipeline has a constant internal diameter of 1,153 mm (approx. 45 in.), but the system was designed to have three different design pressure sections (220, 200, and 177.5 bar) and pipe wall thicknesses (34.4, 30.9 and 26.8 mm) corresponding to the gas pressure drop over the long journey from Russia to Germany.

12. Technical challenges

Like Nord Stream, the Nord Stream 2 pipeline will be designed, constructed and operated according to the internationally recognised certification DNV-OS-F101, which sets the standards for offshore pipelines. Nord Stream 2 AG has engaged the Norwegian company DNV GL, the world's leading ship and offshore classification company and a world-leader in independent assurance and expert advisory services, as its main verification and certification contractor. DNV GL will verify all phases of the project and confirm that the pipeline is successfully pre-commissioned.

The most extreme technical challenges facing the developers of Nord Stream 2 were solved by Nord Stream: how to build two of the world's longest (1,200 km) large-diameter pipelines without interim compression and plot a route and laying schedule through the Baltic Sea with its munitions from World War II, changing sea conditions, winter ice, wildlife breeding seasons and so on. The fact that Nord Stream 2 builds on the solutions and lessons learned from the first Nord Stream should reassure the authorities.

13. Optimal route

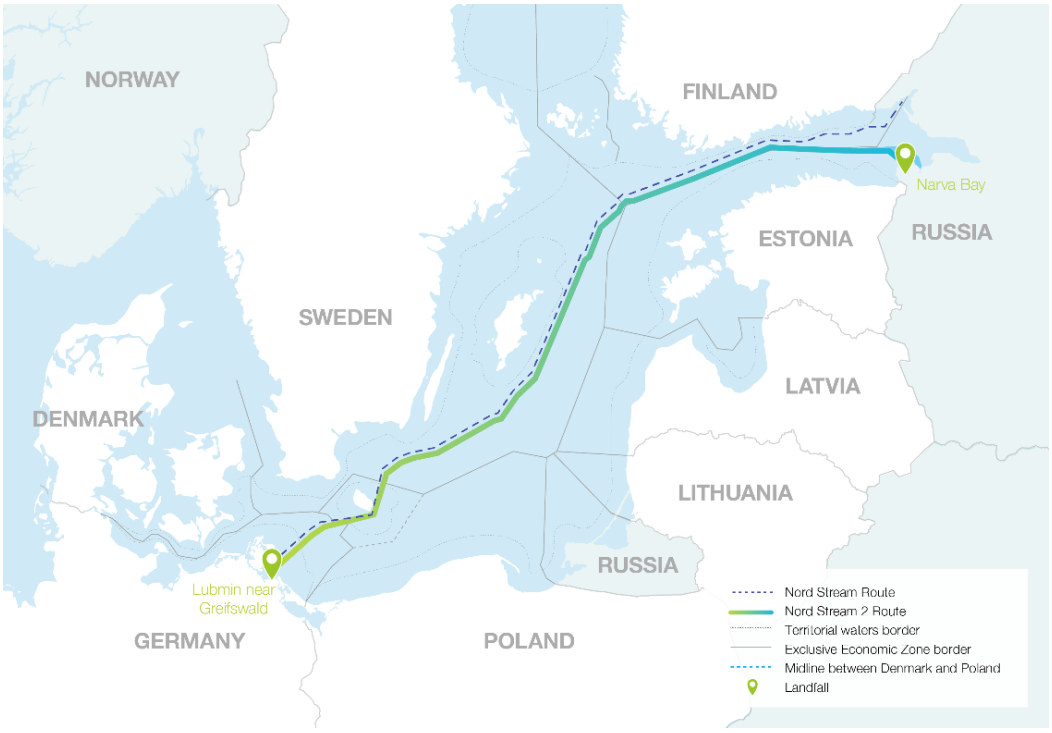
The whole pipeline route needs to be surveyed from Russia to Germany. The route was originally mapped over a width of 1.5 kilometres. The pipeline is planned to have a 50 metre security corridor around it, i.e. 25 metres on each side of the pipeline, and there will need to be a safe distance from the two existing Nord Stream pipelines. This distance will vary based on authority requirements and seabed topography.

The surveys provide baseline information for engineering, route optimisation, the Environmental Impact Assessments (EIAs) and permitting, as well as playing a key role during munitions clearance and pipeline construction. A range of surveys at each stage of the project cover everything from the sea shore to depths of more than 200 metres in the middle of the Baltic Sea, so a range of vessels and equipment is required.

The early stages of the project have involved assessing all relevant local circumstances and route constraints (engineering and environmental) in order to find an optimal route through the Baltic Sea with a minimal distance:

- Engineering constraints include water depths for installation and repair, minimum pipeline bend radii, separation requirements, criteria for cable and pipeline crossings, distance to and crossing of shipping lanes and seabed roughness.
- Environmental route constraints include protected and sensitive areas, existing and future users of the Baltic such as infrastructure, shipping, military, fishing and exploitation of natural resources, cultural heritage and so on.

Picture 6. Planned Nord Stream 2 pipe line route through the Baltic Sea



14. Award-winning logistics

The first Nord Stream project also developed an award-winning logistics operation using harbours strategically chosen around the Baltic Sea to weight-coat and store the 200,000 pipes for delivery over the shortest distances to the pipe-laying vessels with minimum environmental footprint.

A similar logistics operation has been developed for Nord Stream 2. However this time round the project's logistics partner will not be able to use the efficient port of Slite, as planned. The concrete weight-coating of the steel pipes will be done in Kotka, Finland, and Mukran, Germany.

These ports will also be used for pipe storage, along with the ports of Hanko, Finland, and Karlshamn, Sweden. Project-related operations will provide a positive economic stimulus to the regional ports and contribute to their long-term development by providing additional business and jobs.

The project's logistics partner Malaysian based Wasco Energy estimates that it will employ at peak production close to 300 persons in Kotka and in the same order of magnitude in Mukran coating plants during the project. It will also provide indirect employment via sub-contracting many activities needed to support the operations of the coating plants and storage yards, ranging from handling of the pipes to cleaning the plant(s). It also increases the use of accommodation, restaurant and other services.

15. Environmental monitoring

Nord Stream's Environmental and Social Monitoring Programmes demonstrated that the pipeline construction did not cause any unforeseen environmental impact in the Baltic Sea. All monitoring results over several years have confirmed the findings of the environmental impact assessments and verified that construction-related impacts were minor, locally limited and predominantly short-term.

All measured parameters have been within the set limits, or much lower. For example:

- Nord Stream cleared over 100 munitions along the route. The sediment released in Finnish waters was only 10% of what had been estimated.
- Researchers conducted tests on mussels which act as natural filters. They showed no negative effects on water quality – i.e. no pollution.
- Sea mammals and birds were not affected during construction. This was partly a result of the way that Nord Stream had planned the construction schedule.

Several of the specific monitoring programmes were so successful that national authorities have decided to close them out 1 to 2 years earlier than planned. The results reflect the effectiveness of the impact minimisation measures built into the project design and project implementation. The Nord Stream 2 project company has taken on board the findings and lessons learned from the first Nord Stream project.

All this information is also required for the essential environmental impact assessments (EIAs) and permit applications.

As with Nord Stream, the Nord Stream 2 project company has engaged the Danish group Rambøll A/S to co-ordinate all the EIAs and permitting. This includes the UN Espoo process, which effectively covers the whole Baltic Sea region, and all applicable EU directives – which are passed into national law and regulations.

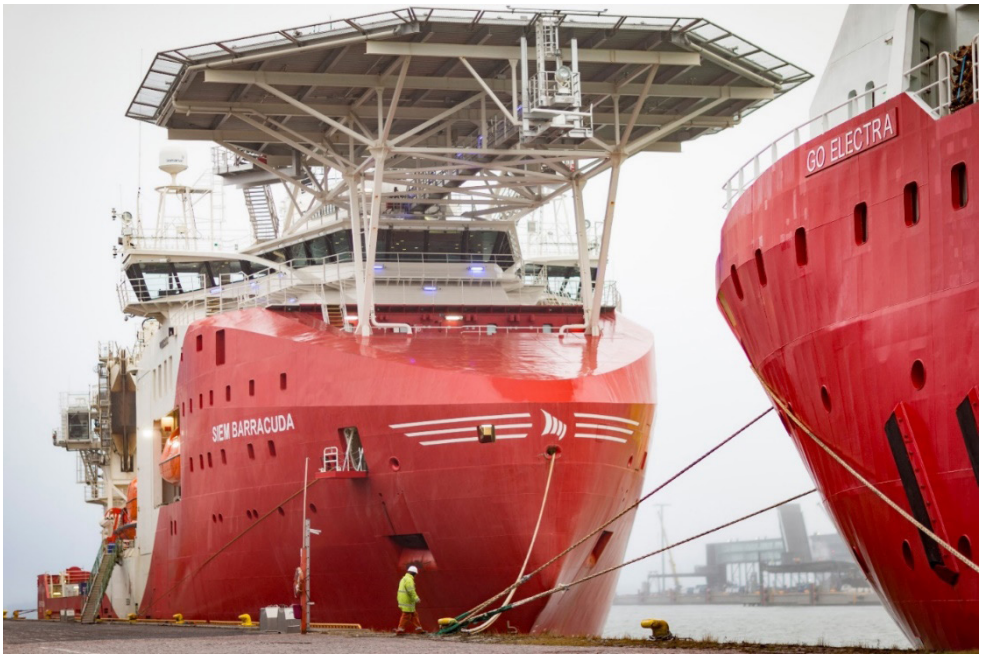
16. Data and Information Fund (DIF) portal

The Region has also benefitted from the Nord Stream project's commitment to HELCOM's Baltic Sea Action Plan (BSAP) and its priorities. As such, it is dedicated to contributing to the BSAP and wishes to actively participate in the improvement of the status of the Baltic Sea, and is supporting environmentally oriented studies by sharing its seabed survey and environmental project data with the scientific community through its Data and Information Fund (DIF) portal.

Nord Stream had gathered a wealth of unique environmental and seabed survey data along the route of the pipelines. The DIF portal contains data collected for pipeline route design as well as for the project's environmental impact assessments and environmental and social monitoring during construction, for example data from seabed survey campaigns 2005/2006, seabed survey data for the 2-kilometre anchor corridor of the final route, and data from environmental baseline surveys and from environmental monitoring during pipeline construction.

The Nord Stream DIF can be used by academic, research, educational and governmental persons and organisations. The data gathered by Nord Stream are unique as they come from the only available large- scale study conducted with same parameters from the Southern coast of the Baltic Sea to the Northern coast of the Gulf of Finland.

Picture 7. Survey vessels in Helsinki



Nord Stream 2's approach to assessing and mitigating potential environmental impacts will be similar to that of Nord Stream.

17. Project well-advanced

As of today Nord Stream 2 has already reached important milestones. It has awarded the most significant contracts, such as pipe manufacturing to German and Russian companies Europipe, OMK and Chelpipe. Malaysian-based Wasco Energy has been contracted to be the project's coating and logistics partner, and just recently the off-shore pipe-lay contract was awarded to Allseas.

The Nord Stream 2 project brings important business contracts to 198 suppliers in 17 countries providing services and materials such as seabed surveys, environmental planning and monitoring, gravel and rock placing and so on.

The project is already well-advanced: by end-2016 over 300,000 man/hours and 27,000 vessel operating hours had already been devoted to surveying the seabed. This has so far involved contractors from five countries – including United Kingdom, Sweden, Denmark, Germany and Russia - using 21 different vessels surveying a cumulative 45,000 km! In addition more than 900 seabed samples have been taken to confirm the geology of the seabed.

Picture 8. Sea bed studies, laying down ROW in Gulf of Finland

The technical data acquired through the surveys are critical to ensuring the safe installation and operation of the pipeline, with minimum environmental impacts. The surveys provide essential input to engineering, permitting, environmental management and monitoring, financing and insurance, quality control, construction and operations.

18. Clear set of established rules

The implementation of projects like Nord Stream 2 is based on a clear set of established rules, following the rule of law. The competent authorities of the countries through whose territorial and/or economic zones the pipelines will pass and under whose jurisdiction the project falls (Russia, Finland, Sweden, Denmark and Germany) will decide about the approvals that are needed for the implementation of Nord Stream 2. This will involve cross-boundary consultations with neighbouring countries in the region under the UN's Espoo process.

Furthermore the legal framework is absolutely clear: Nord Stream 2 complies with all applicable national rules, European laws as implemented in the EU Member States.

Picture 9. Nord Stream 2's legal framework

The EU's so-called Third Energy Package (TEP) mandates – among other things – the unbundling of ownership of the gas and the pipelines that transport it in the internal market. It does not apply those parts of pipelines that are outside the EU, such as TAP or the pipelines from North Africa, Transmed and Galsi. Neither should it be used to scupper Nord Stream 2!

The construction of gas infrastructure is not subject to any sanctions, so at the end of the day the EU is unlikely to prevent anyone from seeking to build infrastructure or supply the EU, as long as they comply with all applicable legislation.

The competent authorities will ensure full compliance with applicable EU law, national legislation and international conventions. Any legitimate concerns will be raised and addressed during this process. The existing Nord Stream pipeline has shown that such projects can be implemented in full compliance with all laws and with minimal environmental impacts.

19. Most efficient connection

Our project is a commercially viable project without taxpayer subsidies. It will provide a direct link between the world's largest gas reserves in Russia and the European gas market, connecting with the EU grid in Germany, from where the gas will eventually move freely to other markets. Nord Stream and Nord Stream 2 represent the most efficient connection from Russia to Western Europe.

Competition will be fierce in the EU's increasingly diversified interconnected internal market. It is wrong to claim – as some do - that the Nord Stream 2 project would "increase dependence on Russia." It is the buyer's choice where they source their energy, and Russian gas accounts for only 6% of the EU's total energy consumption and about one third of its natural gas consumption.

With gas production declining in the EU and Norway over the coming decades, Nord Stream 2 will compete with LNG and other energy sources to meet part of the resulting demand for increased gas imports for many years to come.

The future of the Baltic Sea region

Urpo Kivikari

1. The rebirth of a functional Baltic Sea region

The Baltic Sea links the countries around its rim and brings them closer together, thereby creating a natural region. In the late 1980's, reforms such as Perestroika and Glasnost in the Soviet Union, and the remarkable changes in other socialist countries around the Baltic Sea, led to anticipation of the possible rebirth of a functional Baltic Sea region. At the beginning of the 1990's, the Baltic Sea region (BSR) 'woke up' to a completely new reality. The Baltic coast was no longer home to East-West adversaries, but simply neighbours pursuing common interests and tackling common problems concerning this area.

The BSR entered an entirely new phase, when all its countries identified themselves as market economies and democracies, or at least defined these as their goals. Another dramatic change was the later accession of all Baltic Sea states – except Russia – to the European Union. Within the Baltic Sea region, two worlds suddenly merged into a single meso-region, which became a pioneer and example to other parts of Europe. A meso-region can encompass both entire countries and one or more regions within individual countries. The evolution of the Baltic Sea area in Europe following the dissolution of the Eastern and Western blocs can be described in terms of such a process.

Meso-regions come about as a result of mutual interests and networking among states, corporations, enterprises and other players. In literature on cultural geography, the BSR is termed a meso-region more regularly than any other European area. Explanations for the BSR's development as a meso-region are not hard to find. Various problems and phenomena can by no means be contained within national borders; environmental issues are examples of present-day concerns that are simultaneously national and international. Pollutants spread by air and water irrespective of administrative boundaries. Furthermore, the development of transport systems becomes more functional when national projects are harmonised in one or more meso-regions. In many cases, energy generation and distribution are best handled internationally. At the same time, internationalisation of business networking is crucial to maintaining and improving the competitiveness of national economies and companies.

Environmental and economic questions have taken priority over other issues on the BSR's agenda. For the sake of the environment and human welfare within the BSR, closer alignment is needed between ecological and economic interests. The BSR also needs to become more economically competitive, under the pressure of globalisation.

Within national governments and parliaments, common BSR projects have to compete with numerous other ways of spending public money. BSR endeavours and co-operation therefore need to be made attractive and convincing to possible participants. BSR states, enterprises and other organisations have created strategies and visions for their possible integration within the Baltic area. The EU 'has rewarded' such activity by adopting the EU Strategy for the BSR, within which the EU refers to the BSR as a 'macro-region'.

The functional nature of the BSR renders it impossible to characterise the region using a single description. This clearly creates difficulties in terms of brand and identity building. However, highlighting the fact

that functionality lies at the core of regional identity is more important than achieving a straightforward geographic definition, which would not suit all purposes. Interests defining the region and pertaining to economic relations, transport, environmental protection, and social and cultural platforms are fundamental to achieving a properly functional BSR. With a high number of administrative bodies now serving a plethora of organisations, it is clear that the Baltic Sea region will never have a king, president, parliament, its own legislation or 'sacred' frontiers strengthening its identity and refining its brand.

What we can say about the future of the Baltic Sea Region? I have been monitoring the development of the BSR since the 1980's. Through the years, certain persistent issues have emerged. In this article, I present a few such issues that certainly represent noteworthy future challenges.

2. Ecology and economy - preferential spheres in the Baltic Sea region

In the last decades, environmental and economic questions have taken priority over other issues on the BSR agenda. While substantial progress has been made in solving environmental problems and creating a common market around the Baltic Sea area, much remains to be done, particularly in the alignment of ecological and economic aspects and activities.

We know that, aside from economic benefits, the ecological situation is increasingly important to the well-being of the population living in the BSR. A fairly one-sided approach, based on the perspective of the natural sciences, has been taken to studying and managing the environmental problems faced by the Baltic Sea. Although this perspective is undoubtedly helpful in detecting and eliminating existing pollution, it should be borne in mind that practically all environmental problems are caused by a range of economic activities and all economic activities cause environmental problems. The sources of pollution are agriculture, industry, transport, housing and other activities related to either production or consumption.

For advance prevention, it would be important to step up the investigation of environmental problems from the economic perspective, i.e. to study how the activities of companies, other organisations and individuals might be effectively redirected to render them more environmentally friendly.

The wedding of the ecology and economy into a happy alignment of interests is needed for the sake of the BSR's environment and welfare.

3. Deepening economic integration

The BSR has operated under the impact of diminishing barriers to trade, increasing integration and advancing globalisation. Although some friction points still hinder trade in goods and services, the Baltic Sea region has already come fairly close to realising the ideal of free trade. Germany is the largest trading partner of most countries in the region. Except in the case of Russia's trade flows, the share of intra-industry trade is fairly high in mutual trade.

National domestic markets have given way to the BSR as a new domestic market, which is under intensifying competitive pressures from outside. More companies have published strategies in which the BSR is defined as their domestic market. National borders no longer constitute a barrier to internationalisation or impose unreasonable costs on such a process. This means that supply and demand within adjacent market economies

tend to be merged when profit-seeking companies aim to sell high or buy low, or are seeking advantageous locations for their various operations.

All countries favour capital inflows in the form of foreign direct investment. A considerable percentage of these investments consists of movements of capital between the Baltic Sea states. Direct investments from abroad have been particularly significant to the internationalisation and competitiveness of former socialist countries since, in addition to capital, such investments have brought new technology, management skills, corporate cultures, readiness for risk-taking and marketing channels abroad almost free of charge to the host countries. Investments have also had important spin-offs within the target countries. While foreign direct investments can replace trade in goods, in many cases it can also create such trade.

There has been a steady increase in the migration of labour from other BSR countries. In fortunate cases, labour movement benefits all of the parties concerned: both immigrants and the two countries involved. But the outcome is not always as expected. For example, free movement of labour does not necessarily lead to narrowing wage gaps between two countries. Emigration may cause a labour shortage and economic losses in the country of departure.

The temporary or permanent acquisition of foreign labour is seldom a question of merely purchasing work input. In general, for geographic and other reasons, workers do not commute back and forth between countries on a daily basis. Migrants tend to enter countries in order to live there, often accompanied by their families and relatives. There is therefore a need for both the permanent and temporary integration of migrants and their families. Failure to do so will lead to frustration in terms of the aspirations of foreign workers and their families and children.

On last years the exceptional inflow of refugees from outside Europe to EU member countries have caused disharmony and disintegration tendencies in the EU. The disintegration development has prevailed also in all-European relations after Russia's military attacks on Georgia and Ukraine.

The Baltic Sea region needs to be capable of enhancing the region's economic competitiveness and the welfare of its population during a period of complex integration tendencies and under the pressure of globalisation.

4. Common versus national interests

In the photograph taken at the end of Baltic Sea Summits, high-level decision-makers look satisfied with the resolution of their meeting. However, even the journey home, accompanied by the prospect of dealing with a domestic political agenda, may be sufficient to put them into a more sombre mood.

Within national governments and parliaments, common BSR projects must compete with numerous other ways of spending public money. Governments clearly find less political resistance to putting money to purely domestic use than spending additional money on international activities. The funding of BSR projects is only guaranteed if every country involved considers the activity sufficiently profitable compared to domestic alternatives. The above-mentioned (Section 2) closer alignment of economic aspects and environmental issues might serve the important goal of encouraging the coastal states to regard the BSR as useful and important.

Of course, the BSR cannot be treated as a colony or other type of dependency from which riches are sent to a mother country. It is perhaps best compared to a garden that will not thrive unless all parties tend their own plots – the welfare of the institutional, technical and ecological environment within each country – and invest in co-operation.

The challenge is to make BSR endeavours and co-operation attractive and convincing from the national point of view of potential participants.

5. The Baltic Sea region – a pioneer as a meso-/macro -region

Unlike any other European meso-region – excluding the Black Sea region – the Baltic Sea region has an inland sea as its core. While it also has other unique features, this natural geographic characteristic explains the fact that only the BSR, albeit with varying borders, has established itself on all European meso-region maps.

Since the beginning of the 1990's, the Baltic Sea countries, and enterprises and several other organisations, have created strategies and visions for their integration within this area. The EU has noted this systematic development trend: in 2011 the EU 'rewarded' the BSR for its exertions and achievements by adopting the European Union Strategy for the Baltic Sea Region. This is the EU's first macro strategy, followed by the EU strategy for a few other regions.

The goal is to develop the entire region surrounding the Baltic Sea into a globally leading region in a number of aspects. The strategy began by identifying four main pillars of action. These are related to environmental issues, prosperity and attractiveness, accessibility, and safety and security. On occasions, when drafting an evaluation of the macro-regional approach as requested by the European Council, the Commission draws on its experiences in implementing the EU strategy for the BSR. Within this strategy, the EU refers to the BSR as a 'macro-region', thereby emphasising its importance in comparison to the common use in the literature of the term 'meso-region'.

Due to its cohesion and identity, the BSR could serve as an example to other European meso-/macro-regions which remain at the potential phase. In the Black Sea region, two EU member states and other countries, including Russia, now face very severe problems and share common benefits within their mutual relations. The EU could use the experiences gathered from the BSR in promoting the creation of a functional region in South-East Europe. Of course, the BSR will need to compete more vigorously in Brussels for attention and financing as regionalisation proceeds within Europe.

The challenge is to maintain and develop the BSR's peculiar position as a pioneer European meso/macro-region.

6. The coexistence of two unions

The Baltic Sea region is made up of eight EU countries and Russia. Because the BSR is not among Russia's highest foreign policy priorities, Russia lacks a special BSR strategy. Nevertheless, environmental issues and energy generation and distribution in particular, as well as commodity trading, closely connect Russia with other countries in the region.

Russia's presence in the BSR has entailed the appearance of another union in the area in addition to the EU. A few years ago, together with Belarus and Kazakhstan, Russia founded a Customs Union. This Union has extended by getting new members and deepened its integration. Today it has the name the Eurasian Economic Union and is more or less comparable with the EU. There is little likelihood that current EU member states will move from one union to the other and the EU has neither the need nor the possibility to continue expanding along the Baltic Sea coast. Each step forward in warm neighbourly and other relations between the EU and Russia would serve co-operation and unity within the region.

Unfortunately, Russia's occupation of Crimea and the war in eastern part of Ukraine have deteriorated remarkably relations between Russia and the EU. These development naturally cast a shadow on The BSR, too.

Although Russia's development and policies naturally fall under its own jurisdiction, through their own policies the EU and its member states can influence Russia's readiness to contribute to the BSR's stronger integration and identity. It is to be hoped that Russia's membership of the World Trade Organization will also be beneficial to the BSR. As the most important producer and supplier of energy in the region, Russia plays a special role in the production of light, heat and motion.

All of Russia's EU neighbours are Baltic Sea states. Of course, each country also has the right and duty to maintain its own bilateral relations with Russia, thus supplementing the EU's common policy on Russia. Finland-Russian relations are characterised as normal and even good – while politicians like to define them as 'problem-free', many others would not go so far. After the revolutionary changes in the 1990's, the question still arises of whether relations between Russia and its neighbours, Estonia, Latvia and Lithuania, can be defined as normal. These countries have harsh experiences of their years as part of the Soviet Union. Unfortunately, not all of their more recent experiences of Russia have been positive either. Relations between Russia and Germany deserve a separate discussion.

The challenge is, after current difficult phase, to develop integration and co-operation among Baltic Sea states in all of the relevant spheres, despite Russia's belonging to a new, 'competing' union.

7. Germany and Russia - two principal players in the region

The BSR is only of moderate importance to Russian and German politics. However, these major powers and their mutual relations have a great influence over other Baltic Sea countries and on the region as a whole. Although every country and link in the region is important, the decisive factors are Russia and Germany and their mutual relations. All countries in the region should understand that without good Russo-German relations, a functional BSR cannot be maintained.

The First World War marked the end of a century and a half of Russo-German co-operation. In the Second World War, hostilities between the Soviet Union and Germany resulted in unprecedented destruction and suffering, in the BSR as elsewhere. In light of these 20th century experiences, it is the lack of genuine partnership between Germany and Russia that divides the Baltic Sea region. We may therefore conclude that BSR unity will depend on good relations and democratic government in these two countries. Fortunately, in the 1990's preparations for a new period of true partnership became possible. Germany and Russia have sought to emerge from the shadow cast by history.

No one can deny that there are sound reasons for economic co-operation between Russia and Germany. Germany possesses technology and strong companies; Russia has natural resources and an attractive market. Germany is one of Russia's largest trading partners. The most impressive manifestation of Russo-German relations in the BSR has been the Nord Stream project, a natural gas pipe between Russia and Germany laid along the bottom of the Baltic Sea. From the energy policy perspective, there are good grounds for building a link between Russia and Germany: Russia has natural gas to sell, and Germany – like many other countries – needs to import it. Despite prevailing political tensions between Russia and the EU a new Nord Stream pipeline is designed.

Nord Stream also provides an excellent illustration of the political relations between Russia and EU member states within the region. All coastal states, particularly those that view themselves as having been bypassed in this project between Russia and Germany, have stressed the environmental risks involved in the construction and use of the pipe. The gas pipe is also attended by security policy considerations. Some EU member states view dependence on Russian energy as a risk to their national security. Another aspect of this lies in the fact that Russian enterprises have acquired holdings in the energy markets of various countries. If Russia considers that the gas pipeline requires special military preparedness against new risks, the entire Baltic Sea region might be affected.

A prosperous BSR would be built on the natural prerequisites for economic co-operation and friendly political relations between Russia and Germany. If these prerequisites do not arise, a functional BSR will not be possible, a fact which all countries in the region need to understand. The challenge is to further develop Russo-German relations for the benefit of the BSR, without imposing costs on or offending third countries.

8. Identity and brand of the Baltic Sea region

Unless the BSR's identity is well-known and generally recognised within the region, it will be difficult to present the region under a brand that is attractive to outsiders. Maintaining the motivation of states, enterprises and other organisations in the region to continuously develop the functional nature of the BSR would be in the common interests of all regional players.

The BSR has experienced revolutionary changes and its integration has progressed on the basis of numerous initiatives and organisations, thanks to the efforts of politicians, enterprises and other players. Due to this development, the BSR is fairly well known both within and outside the region. As stated above, in some respects it is considered to be a region that has developed in an exemplary manner. Although such assessments can sometimes be a question of politeness, there are also realistic grounds for adopting such a view.

Despite the headway made, much remains to be done in strengthening the identity of the region and polishing its brand. The coastal states and their areas do not always see themselves as belonging to the BSR – at least not primarily. This dilemma is particularly relevant in the case of Russia, Germany and Poland. While the coastal provinces of these three countries understand the importance of the BSR's identity and co-operation, the regional identity of other areas, including the capitals, is mainly focused elsewhere. Naturally, the BSR aspect is only one element in the national geographical identity of countries that also have strong interests in other meso-regions. None of the large coastal states is primarily part of the BSR. At present, Russia controls coastal areas that, in the light of its history, are rather modest. Undoubtedly, these areas still mean much more to Russia than their share of the surface or population of the entire country would indicate. The main hubs of the

Polish and German economies are not located in the coastal area, which are rather peripheral in terms of these countries' economic geographies.

Although the way in which the BSR identity has been experienced leaves much to be desired, it is probable that no one has ever claimed they are against the BSR or their country's participation in co-operation within the region. In quarters that usually take a critical stand towards integration and globalisation, and oppose the EU, it is perhaps thought that Baltic Sea co-operation neither takes nor gives anything worth protesting about.

The general awareness of the BSR's identity should be increased within the region, otherwise it will be difficult to present the region as an attractive brand to outsiders.

9. The vitality of the Baltic Sea region

The BSR's identity and image are based on co-operation and other functions of countries and societies on the coast of the Baltic Sea, and on the integrated (home) market formed by at least the EU member states. It is difficult to imagine that environmental, energy or transport issues in the BSR can be solved without close mutual co-operation. Regional co-operation creates value added of a kind which cannot be achieved merely through national, or more extensive, international measures.

While the existence of an independent state can only be brought into question in a revolutionary situation, mundane everyday life can be fatal to the existence of a functional region. After the initial enthusiasm for the Baltic Sea region in the 1990's and 2000's, its usefulness and attraction are now being questioned from time to time by its various participating organisations. Despite the above-mentioned and many other grounds for co-operation within this entity, the BSR is not a self-evident issue to every participant. As mentioned earlier, in at least three large countries, Russia, Germany and Poland, the overall regional emphasis is mainly located outside the BSR. Another problem may arise in the restriction of these countries´ presence in this region to the southern (in the case of Germany and Poland) and eastern (in the case of Russia) coasts.

Unlike any other country in the region, Sweden has Baltic Sea coastal areas running from the south to the north and is involved in the integration of northern, central and southern parts of the region. Thanks to its geography, economic resources and attitudes, Sweden occupies a unique position in the Baltic Sea region. Sweden tops the list of direct investments by enterprises, while the state and many organisations put considerable amounts of capital to work for the benefit of the BSR. Sweden participates in regional integration by moving capital and information more extensively than goods.

Although the prerequisites for Baltic participation in other coastal countries do not compare with those of Sweden, every coastal state has much more to win than lose by participating in common activities. The EU's BSR strategy, which makes a significant contribution to the BSR as a whole, is also conducive to achieving a positive outcome in terms of co-operation within the BSR. On the other hand, only the states, other organisations and people inhabiting the BSR can ultimately be considered responsible for the future of the BSR.

In the last few years both all-European integration and development in the EU have suffered from events and trends which favour disintegration. Russia's aggressive foreign policy, financial and economic crisis an inflow of refugees together with populist anti-EU movements and Brexit have cast a shadow on European integration. Of course this development is also great menace to the BSR.

The BSR has become an exemplary European region, referred to as a meso- or macro-region, depending on the context. States, other public entities, enterprises, other organisations as well as individuals have successfully developed the functional nature of the BSR, what is clearly a never-ending task. This article presents some of the current and future economic challenges facing the BSR. The main challenge is to maintain the motivation of states, enterprises and other organisations within the region to continuously develop the functional nature of the Baltic Sea region.

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