

Development of Cities in the Baltic Sea Region



Cities have been the main drivers of development in the Baltic Sea Region (BSR) since the days of the Hanseatic League. The structure of modern cities in the BSR formed along with the flourishing of major industries at the turn of the 20th century. At that time, Berlin and Saint Petersburg, both rapidly growing capital cities, were among the world's ten largest metropolises. With populations of over half a million, Hamburg, Warsaw, Copenhagen, Riga and Wroclaw were among the largest cities in Europe. A century has passed since then, the world has changed, but the pulling

power of cities as centres of development has not decreased.

The VASAB publication examines the development of cities of the BSR between 2005 and 2014 in four aspects: demography, economic performance and dynamics, human capital in cities and social inclusion and quality of life. The publication includes the most distinctive facts of the changes that have taken place over the past decade.

The development of individual cities differs due to their specific historical, geographic and economic characteristics.

In order to provide a comprehensive portrayal of the situation in the BSR, 127 of the most significant centres of development, or the largest cities, all of which have populations of over 100,000 including suburbs (urbanised areas) were selected. For countries with lower population densities (Norway, Sweden, Finland and the Baltic States), cities with a population of over 50,000 were chosen. Considering the different interpretations of the city concept in various countries, a specific methodology for calculating the population of a city's urban area was used.



Significant growth, active suburbanisation

Bergen, Stavanger and **Oslo** in Norway as well as **Stockholm** and **Malmo** in Sweden have experienced population changes of more than +16% in the past decade.

Excluding the crisis of 2008–2010, the economic growth experienced by Poland and the Baltic States has also led to suburbanisation around the most dynamically developing larger cities or even urban sprawl. Even though the Baltic States have experienced sharp declines in their populations since the early 1990s due to emigration and low birth rates, comparatively large suburban areas with growing populations have grown up around the most bustling cities, namely, **Riga, Vilnius, Tallinn** and **Tartu**. Of these, **Tallinn** is developing most successfully, with a population change of over +11% since 2005 and a population level that is now approaching that of the 1990s.

Fairly strong development and suburbanisation is also taking place in the BSR's largest Russian and Belarusian cities, with population changes of +9-10% in **Saint Petersburg** and **Minsk**.

Moderate growth and decline

German and Polish cities have not grown as rapidly as those in the Nordic countries. The population decline characteristic of the 2000s has been replaced with population changes of +3-9% in most of the BSR cities there, especially **Warsaw, Berlin** and **Hamburg**. Eastern Germany's largest port city of **Rostock** has experienced moderate growth, although populations elsewhere in eastern Germany continue to decline. Populations also continue to decline (up to -6%) in some of Poland's industrial centres, for example, **Lodz** and Upper Silesia (Katowice).

Growth has also picked up in **Vilnius**, although populations continue to decline in the other Baltic States cities, with some areas experiencing quite dramatic population changes of -11% to -19%.

After a long period of stagnation, the population of **Kaliningrad** has increased quite rapidly in the past five years (although only 5% over the past decade). The population consistently continues to decline only in **Murmansk**, Russia's remote Polar port city, where 384,000 inhabitants remain compared to a population of half a million in the early 1990s.

The role of migration

Migration has been largely driven by economic motives. The migration flows intensified soon after the economic crisis. Sweden, Finland and Norway and to lesser extent Germany – experienced a positive migratory balance, while the Eastern European countries, especially Latvia and Lithuania, as well as eastern regions of Finland, northern regions of Sweden, southeastern regions of Poland and northeastern regions of Germany experienced a negative migratory balance.

On a regional and sub-regional scale, a country's migration trends are complex. National averages do not reflect the actual situation in different regions and cities. Overall, cities and their neighbouring areas experience more internal and external migration, whereas rural regions tend to be less attractive. Cities and urban regions, especially capital cities, are more likely to attract young people.

The territorial patterns of migration processes are complex. It is assumed that large cities ensure more employment opportunities for the local population and are therefore less likely to face out-migration. However, for example in Latvia, where emigration accelerated after the accession to the EU and then picked up dramatically after the economic and financial crisis, the capital city Riga and other bigger development centres actually lost proportionally more population due to emigration than rural areas and small and medium-sized towns. These findings show the stabilising role of small and medium-sized towns.

POPULATION

Population size is the key variable for many policies, especially for provision and maintenance of public and private services. A population increase in major city regions requires them to extend the capacity of services and improve the infrastructure, while a population decrease in peripheral cities requires improving mobility and restructuring of services, also those of general interest, due to diminishing demand. Demographic factors should be taken into consideration in spatial planning and social policy.

Similarly to a century ago, the **largest metropolises** in the BSR are **Saint Petersburg** and **Berlin**, with over four million inhabitants in each. They retain considerable influence. As the capital of the world's fourth-largest economy, Berlin has not lost any of the development impulse it received as the result of Germany's reunification, and it enjoys a growth rate that is well above average for German cities. The population of Saint Petersburg has also grown quite rapidly in the past decade because of immigration; however, its potential remains largely unrealised.

The other metropolises, like **Warsaw, Hamburg, Minsk, Stockholm** and **Copenhagen**, are not only the main centres of development in their countries; in many spheres, they transcend European borders and can be considered global metropolises. Hamburg, Germany's largest (and Europe's third largest) port city, is a metropolis on a European scale, while broader integration into Europe's structures is still a challenge for rapidly growing Minsk, the capital of Belarus. Likewise, Poland's industrial capital of Katowice, which is the centre of the polycentric

Upper Silesian agglomeration, faces the challenge of adapting to post-industrial development trends and thereby countering its shrinking population. The influence of **Helsinki, Oslo, Krakow, Gdansk, Bremen, Lodz, Gothenburg, Riga, Poznan** and **Wroclaw**, being large



cities and significant centres of development in the BSR, extends beyond the national level. Several BSR cities with smaller populations have influence in various spheres that extends beyond the national level. Of particular note are the Lithuanian capital **Vilnius** and the Estonian capital **Tallinn** as well as **Berlin-Potsdam, Gdansk-Sopot-Gdynia, Oslo-Drammen** and others.

Demographic development patterns are showing depopulation mainly through ageing and outmigration processes, especially in the new EU member states of the Baltic Sea Region. This poses a wide range of challenges to labour market and balanced regional development. Policies should be aimed towards addressing the demographic challenges and increasing labour productivity. Solutions for different types of labour forces should be created, with the aim of increasing labour market and job flexibility.

Economic factors still determine the nature of migration flows. The cities are expected to face accelerated global migration processes in future. In this context, it is necessary to support the role of cities so that they can develop ad hoc measures in humanitarian and financial assistance, including affordable housing. Improving early local responses of coordination, exchange of knowledge and practices and establishing governance partnerships are steps towards an effective inclusive approach.

MAP 1. POPULATION CHANGE OF URBAN AREAS IN THE BSR, 2005-2015



ECONOMIC PERFORMANCE AND DYNAMICS

Changes in GDP

In terms of economic wealth, large differences can still be observed between the western part and the eastern part of the BSR. However, the former economic divide in the BSR has become more complex, and social differences play a more important role. The capital cities and other large urban regions in the eastern part are catching up with regions in the western part in terms of economic wealth.

Eastern economies are less developed, but their development is more rapid

The accession of the Baltic States and Poland to the European Union in 2004 has stimulated growth approaching that of average EU levels. In terms of GDP/PPP, **Warsaw** and **Tallinn** have already surpassed the EU average level, while some of Poland's largest cities (**Krakow** and **Poznan**) and the Baltic capitals (**Riga** and **Vilnius**) have almost reached it. Income level in **Saint Petersburg**, the BSR's largest city, is approaching 80% of the European average. However, income levels in

many more remote regional centres of the new EU member states are still only 40-60% of the European average. These levels are lower only in Belarusian regional centres and the Russian city of Pskov.

The GDP/PPP per capita increase has clearly been more rapid in the cities of the Eastern part of the BSR, where in the majority of cases this change has surpassed +55%. This rapid change is only natural, considering their lower base level. However, as the base level increases, it will be increasingly difficult to maintain such rapid levels of growth, because low costs, which are the current main driver of development, will have to be replaced with efficiency.

Moderate economic development in the western part of the BSR, high income levels

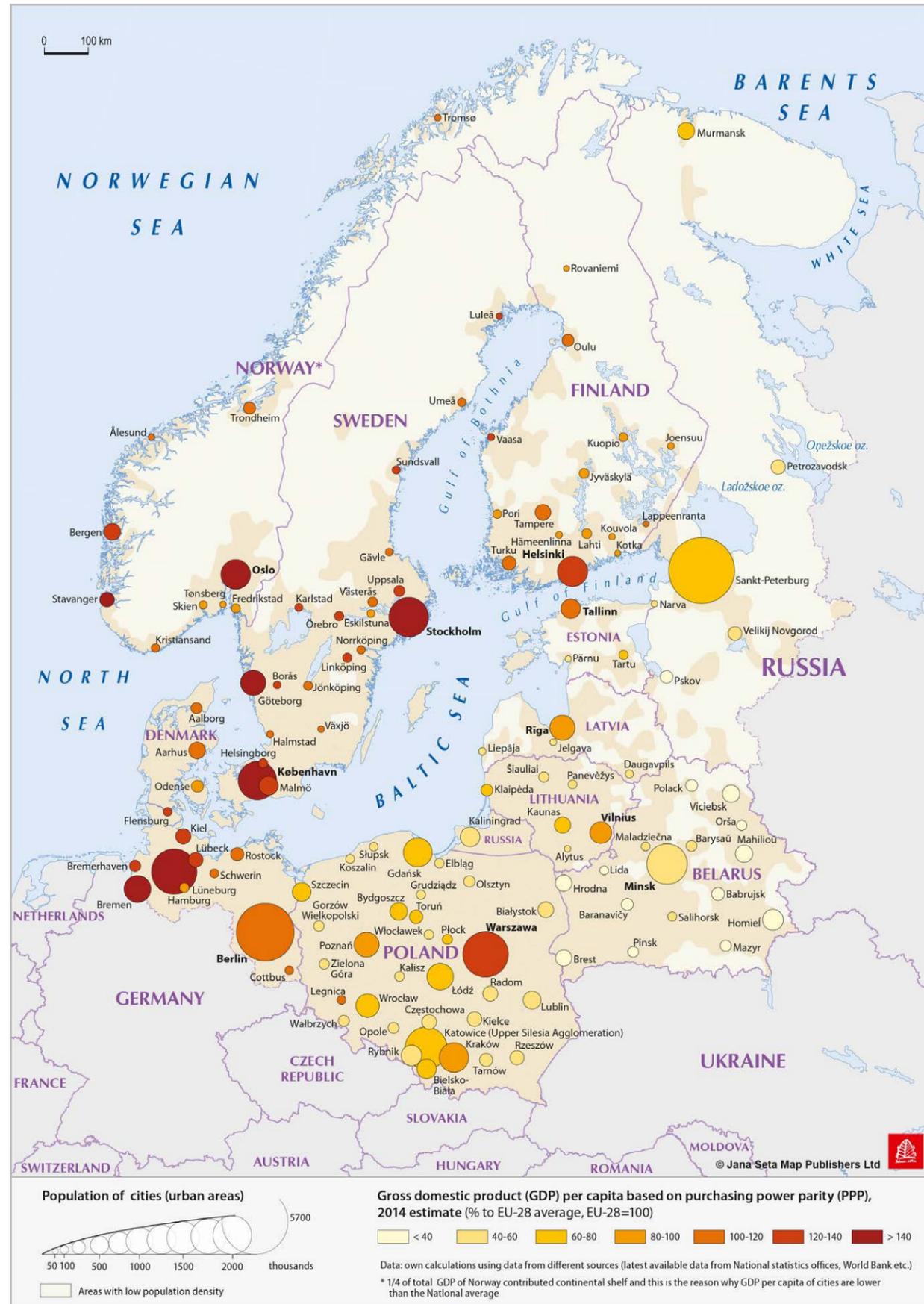
The GDP/PPP in almost all of the largest cities in the western part of the BSR has surpassed 140% of the EU average. The only exception is Berlin, which has 113%

of the EU average. This comparison, however, ought to be looked at with a critical eye due to the various methodologies used in different countries.

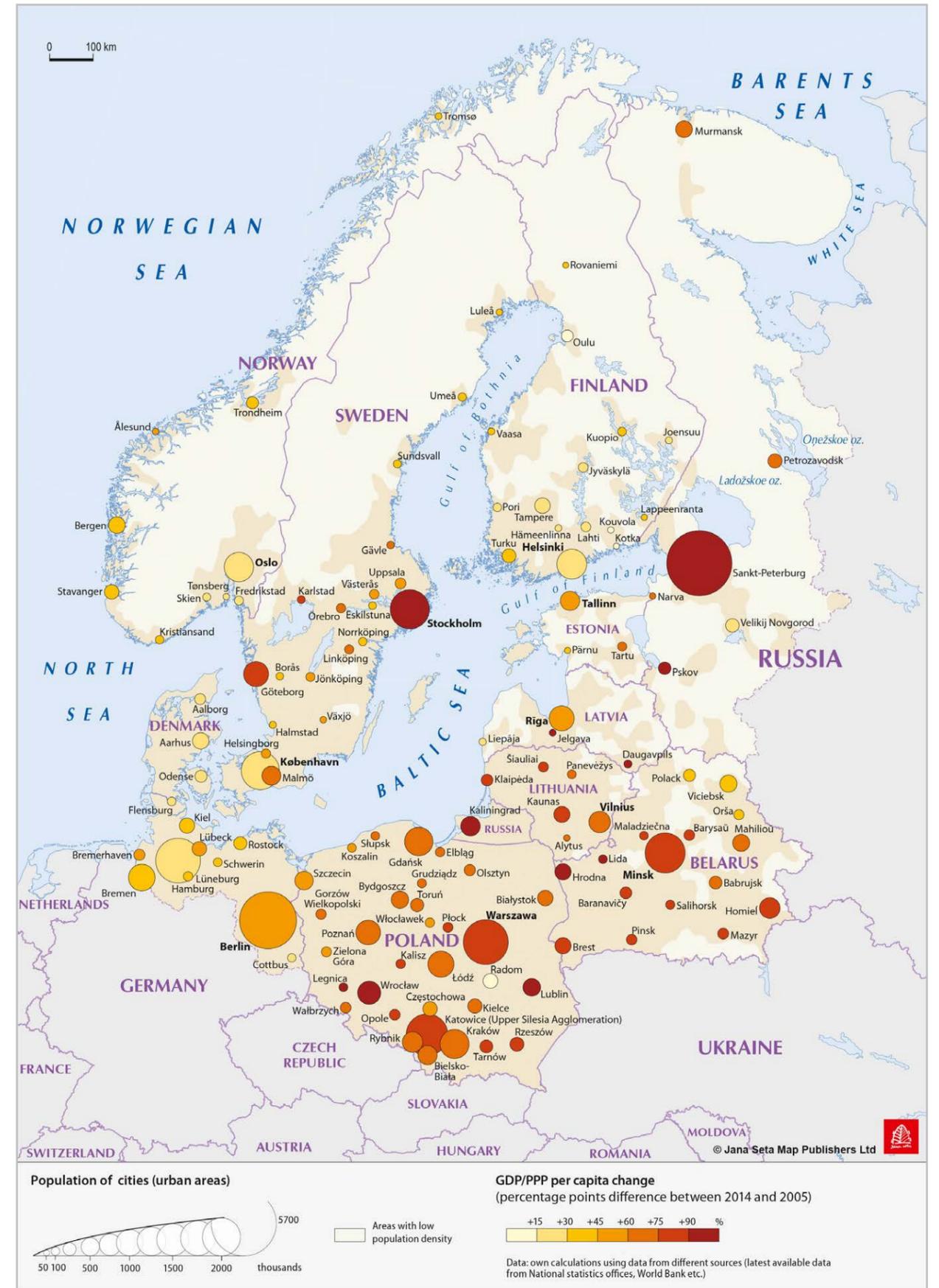
In the western part of the BSR, the **most rapid change** during the period of 2005–2014 was in Sweden's largest cities of **Stockholm**, **Gothenburg** and **Malmö** (above +65%) as well as the German capital **Berlin** (+46%). The **lowest rate** of change was observed in Finland's and Denmark's cities as well as the large cities of **Hamburg** and **Oslo** (up to +30%).

Among the key drivers shaping the changing economies of cities are: an increase in the share of services and the changing nature of these services, changes in the structure of production of goods in the direction of consumer and high-tech goods, closer integration of city economies in foreign trade, the growth of small and medium-sized businesses, and the presence of branch offices of large and multinational companies.

MAP 2. GROSS DOMESTIC PRODUCT PER CAPITA BASED ON PURCHASING POWER PARITY IN THE BSR, 2014



MAP 3. GDP/PPP PER CAPITA CHANGE, 2005-2014





Population with tertiary education



Higher education is a key driver for stimulating developments in R&D, knowledge-intensive and creative industries.

Therefore, national education and economic policies should be aimed to ensure that regional innovation systems translate knowledge into economic growth.

Although higher education is the foundation of innovation development, knowledge skills and abilities that a person must obtain throughout his/her life are also important. Therefore, new forms of lifelong learning and flexible education have a special importance for the human capital.

Human resources play a significant role in the development of cities. A highly qualified workforce is considered the most important cornerstone for business development. To assess the level of competitiveness and innovation in cities, two indicators were observed: population with tertiary education, and employment in technology and knowledge sectors.

Compared to other European regions, in the cities of the BSR there is a bigger share of people who have tertiary education. In all of the large cities within the BSR, the population with tertiary education surpasses 20%, with the lowest rates in Belarusian and Polish cities. The population

with tertiary education surpasses 40% in 38% of all BSR cities.

Cities with universities stand out, be they national capitals or regional centres, because the presence of various institutions of higher education, science and research has increased the size of the population with higher education. Cities like **Rostock, Uppsala, Copenhagen, Kaliningrad, Vilnius, Tartu, Helsinki, Kiel, Turku** and **Saint Petersburg** take pride in having the oldest universities in the BSR, established as far back as the 14th-18th centuries. New centres of education and research, such as **Cottbus, Malmö, Oulu** and **Stavanger**, are also emerging.

Figure 1. Population with tertiary education, city groups, 2014

> 50%	Berlin, Cottbus, Hamburg, Rostock, Helsinki, Stockholm, Uppsala, Malmö, Gothenburg, Linköping, Umeå, Copenhagen, Odense, Aarhus, Vilnius
41-50%	Bremen, Schwerin, Kiel, Flensburg, Aalborg, Tallinn, Tartu, Helsinki, Tampere, Turku, Oulu, Klaipėda, Kaunas, Riga, Oslo, Stavanger, Warsaw, Saint Petersburg, Växjö, Västerås, Luleå etc.
30-40%	Joensuu, Rovaniemi, Lahti, Šiauliai, Jelgava, Bergen, Tromsø, Krakow, Kaliningrad, Murmansk, Minsk, Norrköping, Borås etc.
< 30%	Pärnu, Liepāja, Łódź, Katowice, Poznań, Wrocław, Opole, Gdansk, Pskov, Petrozavodsk, Fredrikstad, Grodno, Brest etc.

MAP 5. SHARE OF POPULATION WITH TERTIARY EDUCATION, 2013



In almost all of the BSR cities, the share of the population with tertiary education has increased by an average of nine percentage points. The greatest increase is observed in cities in Denmark, the Baltic States, Poland, Germany and Sweden.

Over the past decade, the share of the working population (aged 25-64) with tertiary education has changed most (an increase of 22 percentage points) in the Danish city of **Aarhus**, where this population accounted for 64.1% of the workforce in 2014. Approximately 55,000 students currently study in a variety of fields (from architecture, art, music, journalism, engineering and medicine to biotechnology) at the 25 institutions of higher education in Aarhus. Students in

the city have a positive influence on the local atmosphere and contribute to making Aarhus a dynamic urban society. The city's economy is predominantly knowledge and service-based; it is strongly influenced by Aarhus University and the large healthcare industry, though Aarhus also boasts the country's main industrial port. Aarhus will be the European Capital of Culture in 2017.



Employment within a selection of high-technology manufacturing and knowledge-intensive high-technology service branches shows the level of knowledge intensity of the economic activity of the region. This indicator can be regarded as an output indicator for illustrating the innovative capacity of the region.

Employment in technology and knowledge sectors

Figure 2. Employment in technology and knowledge sectors in cities, % of all employees

45-55% of all employees	Oslo, Helsinki, Stockholm, Copenhagen
35-44% of all employees	Berlin, Hamburg, Trondheim, Stavanger, Gothenburg, Uppsala, Malmö, Umeå, Aarhus, Warsaw, Tampere etc.
< 35% of all employees	Turku, Joensuu, Tallinn, Tartu, Riga, Vilnius, Kaunas, Krakow, Wrocław, Gdansk, Cottbus, Bremen, Lübeck, Rostock, Poznan etc.

Jyvaskyla is a good example of regional development. The newest areas of expertise in the Jyvaskyla region are wellness and nanotechnology. Besides the research carried out by the university, the VTT Technical Centre of Finland has laboratories in Jyvaskyla. They specialise in process technology relating to the forest and energy industries. Also, the Jyvaskyla Science Park hosts an R&D-oriented Excellence Centre Programme focused on ICT, paper, energy and environmental technologies.



Stakeholder cooperation is a crucial factor for strengthening human and social capital in the region. Strengthening of the exchanges between universities, companies, schools and NGOs of the whole BSR should be supported to strengthen the dissemination of new knowledge and the multiplication of best practices across different parts of the region.

The highest proportion of employment in the science and technology fields is **concentrated in the capitals**, which are historically the centres for universities, science and research centres, practical laboratories and offices of large-scale businesses. However, many countries are thinking about the involvement of regions and specialisation by developing powerful **regional centres**.

Cities and metropolitan regions are attractive places for people to settle and businesses to operate and are thus the engines for economic growth. Areas with a high science and technology percentage may go on to establish **cluster developments**. Cities in the Nordic region are some of the most active intersectoral

cluster development areas in Europe, for example, Medicon Valley (Danish **Copenhagen** and Swedish **Malmö**). On average, the number of people employed in science and technology fields in the analysed 127 cities in the whole BSR has grown by 5.6 percentage points, reaching an average of 33.5% in 2014. Despite the comparably slower development of innovative industries in Russia, Saint Petersburg as the main scientific centre remains one of the most important scientific centres in the BSR.

The highest growth in percentage between 2005 and 2014 of people employed in science and technology fields is in the Finnish cities of **Helsinki, Tampere** and **Jyvaskyla** as well as in Polish **Krakow** and Norwegian **Stavanger**.



Changes in unemployment

Unemployment in the BSR rose sharply in the wake of the economic crisis of 2008-2010 and continued to increase until 2012. Long-term unemployment has negative financial and social effects on personal life and social cohesion and may hinder economic growth; cities should therefore develop sustainable social and labour market policies.

In 2014, the highest rate of unemployment for cities in the BSR was observed in the Polish cities of **Radom, Grudziadz** and **Wloclawek**, where the unemployment rate reached 16-20% of the working-age population, as well as in Finnish cities such as **Kotka, Oulu, Jyvaskyla** and **Lahti** (15-16%). Even though the unemployment rate in German and Polish cities has **significantly declined** since a high point of unemployment in 2005, the unemployment rate in their cities is still 6-14% of the working-age population.

The lowest rates of unemployment can be found in Norway's cities (**Oslo, Stavanger, Tromsø** and others), where the unemployment rate is 2-3% of the work-

ing-age population. Cities in Belarus and northwest Russia show low rates of unemployment, for example, 0.2% in Minsk and 1.4% in Saint Petersburg.

Figure 3. Unemployment dynamics in BSR cities, 2005-2014

Decrease 6-12 percentage points	Bremen, Berlin, Flensburg, Kiel, Lübeck, Schwerin, Cottbus, Rostock, Wrocław, Walbrzych, Grudziadz, Koszalin, Slupsk, Katowice, Plock, Lodz etc.
Decrease 1-5 percentage points	Hamburg, Lüneburg, Warsaw, Gdansk, Krakow, Poznan, Lublin, Torun, Tartu, Pori, Kuopio, Aalborg, Rovaniemi, Oslo, Stavanger, Bergen, Tromsø, Trondheim, Saint Petersburg, Vitebsk etc.
Increase 1-5 percentage points	Copenhagen, Aarhus, Tallinn, Helsinki, Tampere, Turku, Oulu, Riga, Vilnius, Klaipeda, Šiauliai, Kaliningrad, Petrozovodsk, Stockholm, Umeå, Gothenburg, Västerås, Örebro, Sundsvall, Luleå, Helsingborg, Borås etc.
Increase 6-9 percentage points	Alytus, Panevežys, Liepaja, Eskilstuna, Norrköping, Malmö

MAP 6. UNEMPLOYMENT RATE, 2014



MAP 7. CHANGE IN UNEMPLOYMENT RATE, 2005-2014





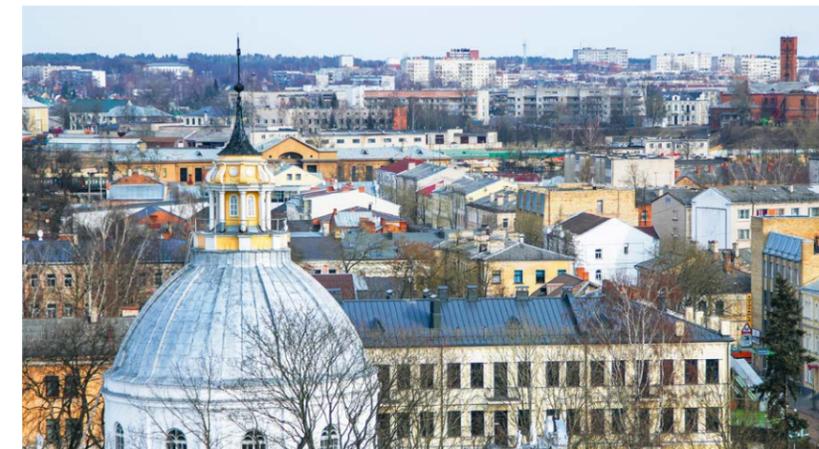
At-risk-of-poverty rate

Economic modernisation and rapid social changes increase the number of people and groups that are left behind. Usually they do not possess the economic, social and cultural capital that is needed to catch up with those changes.

Social polarisation of cities in the eastern part of the BSR is caused mainly by the long-term effects of economic restructuring, migration and unemployment, while in large cities of the western and northern part of the BSR poverty has increased more as a result of the reduction of social transfers during the austerity period.

In 46% of city-regions, the poverty level has decreased or remained the same.

The greatest increase in the at-risk-of-poverty level was observed in **Bialystok, Bremerhaven, Malmo, Poznan, Gorzow Wielkopolski, Zielona Gora** and **Kalisz**. The at-risk-of-poverty level declined most significantly in **Veliky Novgorod** and several cities of Belarus. The situation regarding poverty has also improved in cities with previously high poverty rates, such as **Murmansk, Kaliningrad** and **Daugavpils**.



The highest poverty risk in the BSR is observed in the Baltic States' cities, Finland and certain cities in Poland and Germany (Bremerhaven, Bremen, Berlin). While the prevalence of poverty in the Baltic States and Poland is linked to a lower average level of prosperity than is found in the western countries, the situation in Finland has deteriorated recently.

The risk of poverty is lower in Norway and Sweden, in Belarus and northwest Russia. The role of national policy in providing more affordable services and social welfare might play some role in explaining these differences.

The at-risk-of-poverty level has increased between 2005 and 2013 for 54% of the 127 surveyed city regions.

The quality of life in urban areas is a complex mix of different factors, such as the quality of public transportation services, public spaces, city administration services, ease of finding a job, perceived safety in the streets etc. Sometimes the subjective perception of perceived quality of life in a city can tell more than a collection of indicators.

Overall, the larger cities of the BSR rank among the top cities in the EU in terms of perceived satisfaction with life in a city. When respondents of the Flash Euro barometer social survey were asked whether they agreed if they were satisfied with living in their city, more than 80% answered that they strongly or somewhat agreed. In **Aalborg, Oslo, Copenhagen, Stockholm, Rostock, Oulu, Krakow** and **Bialystok** more than 95% strongly agreed or somewhat agreed with this statement. Only a few other EU cities, such as **Hamburg, Zurich, and Amsterdam**, reached similar results.



Urban areas with labour-intensive economic sectors and low-cost economies are vulnerable in economically turbulent times, as it was shown by the developments during the economic and financial crisis. Therefore, cities and national governments should continue to invest in the restructuring of local economies to make them more competitive and resilient, including the introduction of innovative economic development solutions.

Cities with a high unemployment rate should develop social investment packages by giving more attention to adequate and sustainable social protection and by investing more in developing people's skills and capacities to improve their opportunities to integrate in society and the labour market.

Unemployment dynamics are strongly influenced by the specific economic processes in each country. For example, the unemployment rate reaches its maximum during periods of recession, as was the case in Polish and German cities in 2005. For this reason, cities in these countries (**Bremen, Walbrzych, Wroclaw** and others) show the greatest decrease in their unemployment rates (10-14 percentage points) over the studied period (see Figure 3).



In the cities of the Baltic States, unemployment reached its maximum in 2008, and in Finnish cities in late 2009 and early 2010. Overall, unemployment dynamics in Baltic and Finnish cities as well as in the cities of Sweden and Denmark has increased, except for a few cities (such as **Tartu, Parnu, Pori, Rovaniemi** and **Aalborg**), where a small decline in unemployment is being observed.

Until the beginning of the 21st century, the economy of **Bremerhaven** in Germany was based on shipbuilding, the fishing industry and providing services to the nearby U.S. military base. The economy began to decline in 1999. In 2005, the city's unemployment rate reached 23.7%, because increased competition had led to lower demand for fish products, the port and fish-processing infrastructure had fallen out of date, and the military base had closed. Leaders searched for ways to revive the city and diversify the economy: aquaculture projects were developed together with scientists, and Germany's largest fish processing businesses, which employ approximately 8-9% of the city's workforce, were modernised. 25% of Bremerhaven's workforce is directly linked to the marine economy, and the city is Europe's fourth largest container port. However, the offshore wind energy industry, which employs one third of all Germans working in the wind energy field, has provided the main boost to Bremerhaven's economy and has best reduced unemployment. In 2014, the city's unemployment rate was 14.7%, a change of nine percentage points for the better in the span of nine years.



The economic growth of the Baltic Sea Region has not achieved the proportional reduction of poverty. An integrated anti-poverty approach is needed, combining appropriate instruments for specific actions based on collaboration between the national, regional and local authorities with common goals, targets and action plans. **Active inclusion strategies targeting employment support**, providing resources for those who cannot work and promoting social participation are needed.

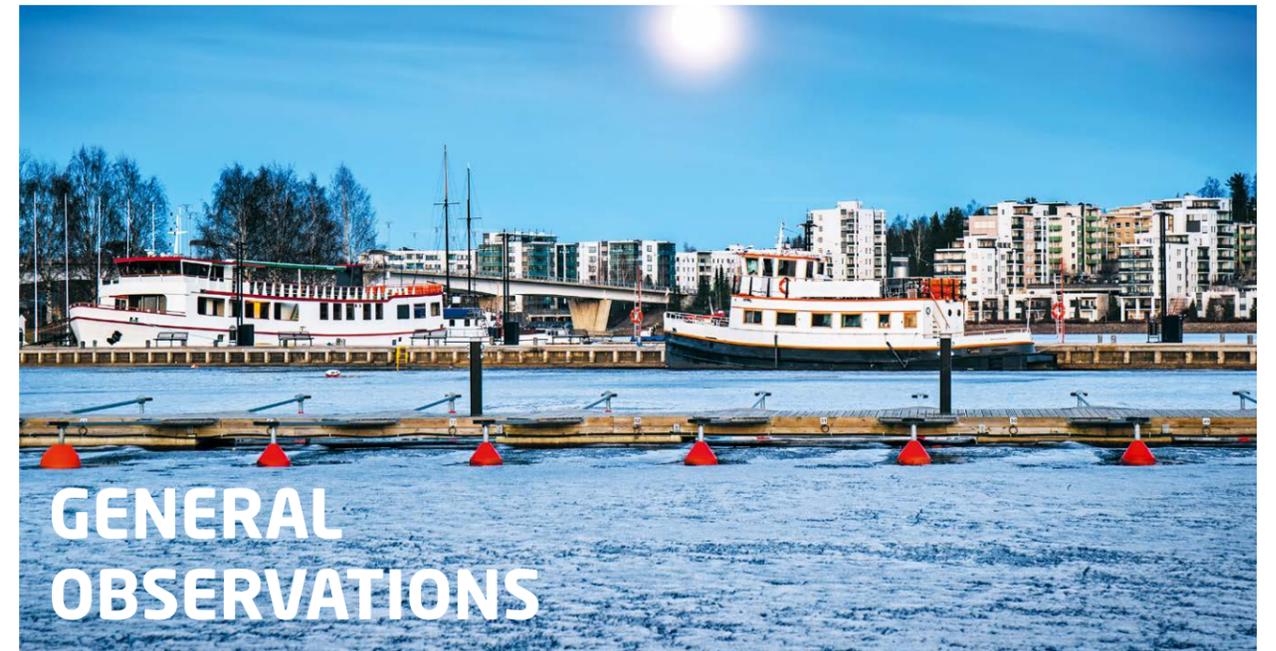
Recognition of the complexity of poverty and adoption of place-based strategies in targeting issues of deprived neighbourhoods and inner-city areas or different at-risk-of-poverty groups are necessary.

Special attention should be given to the areas of multidimensional deprivation where negative social phenomena are accumulating. Improving the quality of life should be the focus of rehabilitation processes.



Developing efficient and affordable public transport systems can grant increased mobility and accessibility to the residents of deprived areas, thus reducing the risk of poverty. The risk of poverty can additionally be assisted by the availability of affordable housing.

MAP 8. PEOPLE AT RISK OF POVERTY OR SOCIAL EXCLUSION, 2013



GENERAL OBSERVATIONS



Urbanisation is an ongoing trend, even in the future. Although the BSR represents large internal heterogeneity in terms of population settlement and economic development patterns, the economic growth of its cities has been a common theme between 2005 and 2015, especially in larger cities and the cities of Eastern Europe. All the capital cities, but especially the global-level metropolises and European-level metropolises, have significantly increased their integration into the global economy.

The economic downturn following the crisis affected the economies of some countries more than others. Although all metropolitan regions have grown their economies between 2005 and 2014 in terms of GDP per capita, it is quite obvious that

the development of the cities, including the survival during the economic recession, is highly embedded in contexts of national and regional policies. For large cities, there is more room for manoeuvre because of better connectivity, the presence of knowledge-intensive economy sectors and easier access to investments.

It is important to bear in mind that cities are not only focal points of economic growth but they also provide services to surrounding areas. Although the development of small and medium-sized urban areas and rural areas is not the focus of this report, it has to be emphasised that they have an important role to play by ensuring the sustainability and territorial cohesion of the BSR.

Despite different planning traditions and institutional frameworks, there is a remarkable common aspiration in spatial plans and visions developed in BSR countries to favour polycentric development. At the same time, it is important to emphasise that the efficiency of the development lies in networking and the territorial cooperation of cities of all sizes in order to ensure development and high-quality services.

The evidence presented supports the existing VASAB territorial development vision – VASAB Long-Term Perspective for the Territorial Development of the Baltic Sea Region – but it also points towards new challenges that can be addressed by appropriate policy responses.

The full background Report and methodology is available at:



The indicators used to assess the development of cities are the headline indicators selected in the ESPON project BSR TeMo "Territorial Monitoring for the Baltic Sea Region". The indicators have been selected based on their relevance to policy domain, policy relevance to European macro regional strategy – the EU Strategy for the Baltic Sea Region and the VASAB Long-Term Perspective for the Territorial Development of the Baltic Sea Region – time series availability, update frequency and availability within the European Statistical System, where relevant.

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