

# Development of Cities in the Baltic Sea Region: Some Empirical Observations and Implications for Urban Governance

Visvaldis Valtenbergs\*

Visvaldis Valtenbergs  
University of Latvia  
visvaldis.valtenbergs@lu.lv

## Abstract

The aim of this article is to reflect on some macro regional observations about the development of cities in the Baltic Sea Region in order to provide some evidence on policy sensitive aspects, such as remaining north-south, east-west divide within the region in terms of demographic, economic, transport, human capital and social indicators. The observations are based on the study that examines the development of 127 cities of the Baltic Sea Region (BSR) from 2005 to 2014. Research shows that economic development has led to quick spatial expansion of most urban areas. While cities obviously generate growth and jobs, perform good on educational front and innovation front, development differences across the Western-Eastern axis are still showing. After the financial crisis of 2008-09 public investment dropped substantially relative to GDP. Poverty, and closely related issues, such as housing is becoming more pressing issue in urban development. In order to address these issues urban governance needs to consider growing discrepancy between administrative definitions of cities and their true size, negative effects of tax competition, spatial aspects of social and economic inequalities as well as double hierarchy of administrative and functional levels of governance.

## Introduction

Keywords:  
Baltic Sea Region (BSR)  
Cities  
Urban governance

Cities have been and still are the main drivers of development in the Baltic Sea Region (BSR) since the days of the Hanseatic League whereas contemporary structure of modern cities in the region 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 capitals of superstates, 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 whole century has passed since that time, during the world has changed dramatically, but the pulling power of cities as centres of development has continued to increase. Today cities face variety of challenges. Some of these challenges, like the expansion of city territory beyond its administrative borders, involve spatial dimension, while others, such as the erosion of local democracy are more general. Both types of challenges require complex solutions in urban governance. This article points to some of these challenges and provides while providing empirical bases for some of the most urging issues.

The era of modern cities dates back to the second half of the 19<sup>th</sup> century when according to Häussermann (2005) more local governments acquired the rights for planning control over land use, gradually leading to unified legal regulations for urban development. During rapid economic expansion of the 19<sup>th</sup> century cities set first examples in private market regulation by setting up first health policies, anti-poverty initiatives. After world wars cities began to undertake market interventions on broader scale. Public authorities started to build

Scandinavian Journal of  
Public Administration  
22(1):73-97  
© Visvaldis Valtenbergs and  
School of Public  
Administration 2017  
ISSN: 2001-7405  
e-ISSN: 2001-7413

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\* **Visvaldis Valtenbergs** is a leading researcher in University of Latvia, Faculty of Social Sciences, Advanced Political and Social Research Institute.

housing for the poor, took over the control of basic utility services, energy provision and transport systems. Physical improvements in infrastructure were soon followed by social intervention programmes.

The cities of the BSR fit within the model of a European City where “particular economic interests early on were forced to find compromises with social responsibilities”. These compromises resulted into socially and environmentally conscious urban renewal that gave cities more command over social and spatial development unlike in American and Asian cities which mainly provided arenas for private market exchanges (Häussermann, 2005). Calafati (2010) has summarised “European model of territory” according to three objectives: a) maintenance of polycentrism; b) a minimum amount of per capita well-being to be reached in every locality or node; c) a sufficient amount of local knowledge to be provided for an effective learning and innovation process. Cities of BSR share these characteristics. While European cities experience less dynamic urban growth, they are more socially and territorially integrated. In spatial policies European cities pursue compactness and densification oriented spatial development strategy which respects historical heritage, avoids the occupation of green-field areas and aims at re-using brownfields, while in sectorial policies they look to develop innovative aspects of economy, while also striving to ensure social welfare, affordable housing, and mobility for their residents. Unlike in China and other rapidly urbanising countries where urban development is focused on building new cities, European cities are looking for new ways to compromise economic competitiveness with city’s traditional heritage and environmental sustainability (Communities, 2007).

After the fall of the Iron Curtain the cities in the BSR became increasingly affected by international developments. In the August of 1992 Vision and Strategy around the Baltic Sea (VASAB) was founded at Ministerial level in Karlskrona, Sweden. VASAB involves intergovernmental multilateral cooperation of 11 countries of the Baltic Sea Region in spatial planning and development, guided by the Conference of Ministers responsible for spatial planning and development. Since its development VASAB has developed several territorial development vision documents, the latest of whom – VASAB Long Term Perspective was adopted at 7<sup>th</sup> Ministerial Conference on 16 October, 2009 in Vilnius. The Perspective outlines new common responsibilities and challenges that have emerged and calls for deeper pan-Baltic co-operation on spatial planning and development and integration of spatial development policies into all relevant sectors. Discourse of Europeanisation also affects cities, especially in terms of EU’s Cohesion Policy under which significant co-financing to cities in the Eastern BSR has been provided. At the EU level city policies are supported by The Urban Agenda which provides framework to stimulate growth, liveability and innovation in EU cities. The Agenda, adopted in 24 June, 2016 also presents a new working method under which European Commission, member states and cities work to ensure that the urban dimension is strengthened in EU policies (EC, 2016).

While one can indeed observe growing influence of international dimension in urban governance, it is also evident that the influence of national level public sector has weakened since the last third of the 20<sup>th</sup> century. This can be explained by several developments – starting from the privatisation of housing, public services, the sale of land, as well as growing suburbanisation and private car oriented development in transportation. The influence of globalising economic actors has grown, leading to so called “Americanisation of European cities.” The financial crisis of 2008-09 also narrowed the financial and in some cases also political scope of manoeuvre for municipal administrations. The decline of public control over urban development has been accompanied by the dissatisfaction of people with local politics – a part of much discussed broader topic of local democracy deficit, which has been labelled as “post-democracy” (Crouch, 2004). According to Crouch (2004) growing complexity of political decisions and the rising power of globalised firms leads to a situation where politics seems to be subordinated to economic interests. This undermines the importance of democratic elections and pushes many citizens into passive role. There is a danger that this will be reflected in urban policies transforming them from the bottom-up integrated developments in small neighbourhoods to city-wide top-down approach (Mouleart et. al, 2010).

The development of cities obviously differs due to their specific historical, geographic and economic factors. In this article we only observe a few general trends related to four domains – demography, economic performance, human capital and social inclusion. These domains were chosen on the basis of their relevance to European wide regional development strategy and to the implementation of the VASAB Long Term Perspective (2009) which is a transnational strategic spatial planning document on territorial integration aimed at strengthening territorial cohesion in the Baltic Sea Region. It is focused on urban networking and urban rural relations, accessibility and management of the Baltic Sea.

This study looks at the indicators that have been selected by policy stakeholders to be the most relevant in the context of policy making. In doing so, we refer to ESPON (2014) project “Territorial Monitoring for the Baltic Sea Region” (ESPON BSR-TeMO) which has developed indicator-based monitoring system and methodological tool that provides monitoring of the territorial development of the BSR. The indicators have been selected on the basis of their relevance to policy domain, policy relevance to European macro-regional strategy - the EU Strategy for the Baltic Sea Region and 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.

In subsequent paragraphs we provide findings about the development of cities in the BSR according to the indicators from four domains. Consequently, we discuss their implications for urban governance, such as growing discrepancy between administrative definitions of cities and their true size, tax competition in fragmented administrative urban government setting, the relevance of territorial dimension of social and economic inequalities. Finally, we highlight the trans-

formation of urban governance models from administrative and hierarchical to functional and fluid.

## Methodology

The study looks at cities of the BSR, all of which have populations of over 100,000 including suburbs (urbanised areas). 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, the authors of the report also developed a methodology for calculating the population of a city's urban area. Considering the different interpretations of the city concept in various countries, the authors (*Jana seta Map Publishers*) of the report developed a methodology for calculating the population of a city's urban area. In previous studies, OECD researchers have offered similar approach, defining large city areas (populations above 500,000) as functional urban areas (OECD, 2013). Boundaries and populations of urban areas have been computed by *Jana seta Map Publishers* using large-scale maps, Google Earth and other geospatial sources of countries in BSR and the latest available locality-level (smallest statistical units) population data from national statistics offices and *Citypopulation.de* (for Germany). Urban areas are delimited by unsettled and non-built-up areas.

Considering that GDP statistics for the city level is available only for some of the larger cities, the study used the territorial GDP breakdown available through national statistics sources (sometimes this corresponded with the European Nomenclature of Territorial Units for Statistics subnational or NUTS-3) standard, but more often with NUTS-2 and applied it to the cities in a specific region. If a city (within the borders of an urban area) comprised several NUTS-3 regions (for example, Copenhagen), the total GDP and average GDP per capita data were calculated for the entire area. In order to compare indicators from various countries and years, the study used the *Jana seta Map Publishers* methodology, which is based on annual comparison data for world countries published by the World Bank. (Gross domestic product (GDP) per capita based on purchasing power parity (PPP). It must be noted that, despite the authors' attempts at standardising GDP/PPP indicators in their calculations, the results ought to be looked at with a critical eye due to the various methodologies used in different countries

Accessibility plays a major role in development of cities of all size. All 127 cities have been arranged in 7 categories accordingly to their multimodal accessibility potential, from a very high accessibility potential rating (for almost all the Germany cities, some Danish and Swedish cities) to a low accessibility potential rating (Petrozavodsk and Pskov in Russia). The *Jana seta Map Publishers* methodology was used to determine the category for each city. The cities were analysed from six different aspects: 1) availability of a railway (access to the European high-speed [more than 180 km/h] railway network, access to the standard European gauge railway network, access to local high-speed railway systems,



intensity of passenger traffic); 2) availability of motorways (access to the European motorway network, access to local motorway networks, intensity of passenger traffic); 3) availability of air traffic (access to airports, taking into account passenger traffic at the airports); 4) availability of sea transport (access to large seaports with cargo turnover of 4 million tons per year), taking into account their cargo turnovers); 5) travel time to other cities in the region and the number of cities reachable within two hours; 6) participation in the Schengen Area.

The domain of Human Capital was composed of two indicators. The Size of Population with tertiary education was determined according annual and census data from state or regional statistic offices. The Share of Employment in Technology & Knowledge Sectors was determined according various indicators that are used in national statistical systems do not allow comparisons. Therefore, EUROSTAT indicator "Persons employed in science and technology, percentage of active population" on NUTS-2 level is used. The domain of Social Inclusion and Quality of Life involved two indicators. Unemployment size and At-Risk of Poverty level was determined according annual data from state or regional statistic offices. In several countries (Lithuania, Estonia, Latvia, Poland) due to insufficient survey sample sizes at-risk-of poverty indicator is not calculated for city level, therefore NUTS-2 or NUTS-3 level data was used. In Russia and Belarus there is different methodology for calculating this indicator. For poverty measurement Russia uses % from total population who live under the state determined minimum, Belarus uses sampled indicator – the proportion of low-income city population.

## Demography

The large cities of the Baltic Sea Region can be divided into several categories according to the size of their population.

1. *Global metropolises* – Saint Petersburg and Berlin, with over four million inhabitants in each.
2. *European metropolises*. This category consists of cities with populations of 1.9 to 2.8 million, namely, Warsaw, Hamburg, Katowice, Minsk, Stockholm and Copenhagen.
3. *Regional metropolises*. This category (populations of 0.7 to 1.3 million) includes Helsinki, Oslo, Krakow, Gdansk, Bremen, Lodz, Gothenburg, Riga, Poznan and Wroclaw. These are large cities and significant centres of development in the Baltic Sea Region. The influence of several, especially the Finnish, Norwegian and Latvian capitals of Helsinki, Oslo and Riga (the largest city of the Baltic States), extends beyond the national level.
4. *National and regional centres of development*. Several Baltic Sea Region 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, although all of

the cities included in this report are considered national and regional centres of development until, through the urbanisation process, they are integrated into one of the higher-level urban area categories (Berlin-Potsdam, Gdansk-Sopot-Gdynia, Oslo-Drammen and others).

Table 1: Populations of cities (urban areas) in the Baltic Sea region (2015, estimate)

City	Cou- ntry	2015 Pop. (th)	City	Cou- ntry	2015 Pop. (th)	City	Cou- ntry	2015 Pop. (th)	City	Cou- ntry	2015 Pop. (th)
Sankt Petersburg	RUS	5 712	Bergen	NOR	378	Wałbrzych	POL	162	Stupsk	POL	105
Berlin	DEU	4 384	Aarhus	DNK	373	Opole	POL	162	Kuopio	FIN	103
Warszawa	POL	2 734	Hrodna	BLR	367	Uppsala	SWE	162	Cottbus	DEU	102
Hamburg	DEU	2 703	Kaunas	LTU	360	Pinsk	BLR	157	Pori	FIN	100
Katowice	POL	2 359	Brest	BLR	355	Barysaŭ	BLR	155	Kristiansand	NOR	100
Minsk	BLR	2 169	Białystok	POL	333	Gorzów Wielkopolski	POL	149	Norrköping	SWE	97
Stockholm	SWE	2 067	Tampere	FIN	331	Orša	BLR	143	Umeå	SWE	96
København	DNK	1 951	Kiel	DEU	320	Płock	POL	141	Daugavpils	LVA	92
Helsinki	FIN	1 214	Radom	POL	298	Zielona Góra	POL	139	Skien	NOR	92
Oslo	NOR	1 170	Częstochowa	POL	290	Šiauliai	LTU	138	Sundsvall	SWE	89
Kraków	POL	1 136	Lübeck	DEU	289	Jyväskylä	FIN	131	Karlstad	SWE	86
Gdańsk	POL	1 089	Stavanger	NOR	289	Lahti	FIN	131	Eskilstuna	SWE	83
Bremen	DEU	958	Kielce	POL	279	Kalisz	POL	129	Borås	SWE	82
Łódź	POL	922	Petrozavodsk	RUS	275	Västerås	SWE	126	Gävle	SWE	82
Rīga	LVA	849	Rzeszów	POL	270	Włocławek	POL	124	Liepāja	LVA	76
Göteborg	SWE	849	Turku	FIN	264	Lüneburg	DEU	122	Vaasa	FIN	72
Poznań	POL	826	Velikij Novgorod	RUS	250	Elbląg	POL	122	Halmstad	SWE	71
Wrocław	POL	730	Toruń	POL	244	Helsingborg	SWE	121	Joensuu	FIN	70
Vilnius	LTU	633	Rostock	DEU	237	Örebro	SWE	118	Jelgava	LVA	67
Homieŭ	BLR	578	Tamów	POL	230	Tartu	EST	117	Hämeenlinna	FIN	65
Rybnik	POL	571	Babrujsk	BLR	223	Grudziądz	POL	117	Växjö	SWE	64
Kalinin-grad	RUS	524	Pskov	RUS	218	Linköping	SWE	117	Tromsø	NOR	63
Tallinn	EST	511	Polack	BLR	200	Jönköping	SWE	117	Kouvola	FIN	60
Bielsko-Biała	POL	501	Odense	DNK	198	Salihorsk	BLR	115	Tonsberg	NOR	60
Malmö	SWE	485	Trondheim	NOR	198	Fredrikstad	NOR	113	Luleå	SWE	60
Szczecin	POL	467	Oulu	FIN	194	Panevėžys	LTU	109	Alytus	LTU	59
Lublin	POL	425	Baranavičy	BLR	193	Koszalin	POL	109	Ålesund	NOR	59
Bydgoszcz	POL	412	Klaipėda	LTU	190	Lida	BLR	108	Narva	EST	58
Mahilioŭ	BLR	400	Olsztyn	POL	174	Legnica	POL	108	Pärnu	EST	56
Viciebsk	BLR	396	Bremerhaven	DEU	170	Schwerin	DEU	107	Lappeenranta	FIN	55
Murmansk	RUS	386	Mazyr	BLR	165	Flensburg	DEU	106	Kotka	FIN	53
			Aalborg	DNK	164	Maladziečna	BLR	105	Rovaniemi	FIN	52

Source: National data sources

Over the past decade, populations in the majority of centres of development in the Baltic Sea Region have increased. The most rapid growth has taken place in

the less-populated but prosperous Nordic countries of Norway, Sweden and Finland and more densely populated Denmark (see Figure 1).

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 region's largest Russian and Belarusian cities, with population changes of +9-10% in Saint Petersburg and Minsk.

Some German and Polish cities have experienced more moderate growth. Although they 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 region's cities, especially Warsaw, Berlin and Hamburg. Even 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 Russia's western enclave of Kaliningrad has increased quite rapidly in the past five years (although only 5% over the past decade), mostly thanks to various military projects. The population consistently continues to decline only in Murmansk, Russia's remote Polar port city, where only 384,000 inhabitants remain compared to a population of half a million in the early 1990s.

Migration in region have been largely driven by economic motives. The migration flows intensified soon after the financial crisis of 2008-09 and turmoil in the Middle East and North Africa. Northern countries of the BSR – Sweden, Finland and Norway and to lesser extent Germany experience a positive migratory balance, while the Eastern European countries especially Latvia, Lithuania, as well as Eastern regions of Finland, northern regions of Sweden, south-eastern regions of Poland, north-eastern regions of Germany experience negative migratory balance. The recent influx of asylum seekers and displaced persons is changing the character of migration. Migrants are transiting through Europe in order to reach more developed countries. The latest data shows that in 2015 Germany has been the leading country in the EU for total asylum claims (1.1 million), followed by Sweden (approximately 163,000) (Thomas, 2016; Swedish Migration Agency, 2016). The influx of non EU migrants from war torn regions is likely to continue.

On regional and sub regional scale country's migration trends are complex. Overall cities and their neighbouring areas experience more internal and external migration, whereas rural regions tend to be less attractive to internal and external

migrants. Cities and urban regions especially capital cities are more likely to attract young people and asylum seekers. It is assumed that large cities ensure more employment opportunities to local population and therefore they are less likely to face out-migration. But this does not always hold true for countries that experience negative migration balance, such as Latvia where emigration accelerated after the accession to EU and then picked up dramatically after the economic and financial crisis.

In order to account for growing population density around cities, several researchers have distinguished between two types of metropolitan areas. “Morphological urban area” (MUA) aims to depict the continuity of the built up area, and is normally larger as the administrative city area while “functional urban area” (FUA) encompasses even wider urban system including towns, villages that are usually economically and socially heavily dependent on a major city. FUA is usually delineated on the basis of commuting flows. Data about the relationship between the population size of administrative cities ESPON 1.4.3. study of urban functions (ESPON, 2007) shows that population size in FUAs is larger than in MUAs and even more larger than administrative city areas. For some larger cities in BSR such as Katowice the difference is remarkable (7,1) while for Berlin and Warsaw it is smaller, which could signify that their urban geography is more compact. The differences between morphological, functional and administrative areas are mainly caused by urban sprawl, as well as by administrative territorial fragmentation (ESPON, 2007).



Figure 1: Cities (urban areas), population change (2005–2015)

## Economics

Very large differences can still be observed between the western part of the Baltic Sea Region (which, contrary to geographic logic, also includes Finland) and the eastern part of the region (see Figure 2). These differences can be explained in part by the almost fifty years of Communist rule that was forced on residents of the Eastern region and led to huge losses for the region's economies.

Eastern economies are less developed, but their development is more rapid. In evaluating GDP/PPP per capita increases for the period 2005–2014, it has clearly been more rapid in the cities of the Eastern part of the Baltic Sea Region, where in the majority of cases this change has surpassed +55%. This rapid change in the Eastern cities is only natural, considering their lower base level. However, as this 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 region, high income levels. At this same time, the GDP/PPP in almost all of the largest cities in the Western part of the Baltic Sea Region has surpassed 140% of the EU average. Only Berlin, which continues to integrate the less-developed post-Communist parts of East Berlin, has a lower indicator of 113%. It must be noted that, despite the authors' attempts at standardising GDP/PPP indicators in their calculations, the results ought to be looked at with a critical eye due to the various methodologies used in different countries. For example, Stockholm's GDP/PPP is 244% of the European average, while in Norway (which has the highest average level of all the countries in the region) this level does not surpass the national average for any of its cities, because one fourth of the national GDP (linked to oil and gas extraction) is attributed to the shelf zone and therefore does not apply to cities.

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



Figure 2: GDP/PPP per capita changes (2005-2014)

## Accessibility

All 127 cities were ranked in seven categories (see Figure 3), ranging from very high accessibility potential (almost all of the cities in northern Germany and some cities in Denmark and Sweden) to low accessibility potential (Petrozavodsk and Pskov in Russia).

Western region's high level of development on the base of well-developed transportation infrastructure is also clearly observed in terms of multimodal accessibility. However, especially over the past decade, Poland has in large part managed to integrate into Europe's unified transportation network by reconstructing major railway lines, completing several motorway links with Western Europe, intensifying air traffic and completing the Baltic Sea's largest deep-water container terminal in Gdansk.

Cargo handling capacity has also increased in the Baltic States' largest ports, although, due to the fact that Russia has purposefully reoriented its export flows to its newly built ports in the Saint Petersburg area, only the ports in Riga (Latvia) and Klaipeda (Lithuania) have succeeded in increasing their cargo turnover. Reconstruction of major roads continues in the Baltic States, which have a relatively dense, albeit decaying (due to the recent transition to a market economy), network of roads. In the past, the railway network in the Baltic States, Finland, Belarus and Russia was built with a different railway track gauge from the rest of Europe, which hinders rail traffic with Europe's railway system. For this reason, intercommunication between the Baltic capitals as well as their communications with Western Europe will improve only after the completion of the Rail Baltic high-speed railway line, planned for the coming decade. Air traffic in the Baltic States has developed dynamically, thereby providing its people convenient links with European cities, especially from the region's largest airport in Riga.

Following the creation of the Schengen Area, bureaucratic obstacles to crossing borders within the Area have significantly decreased. Of the Baltic Sea Region countries, Russian and Belarus are not a part of the Schengen Area, and therefore transportation links with these countries still involve considerable and sometimes unpredictable border crossing procedures. For this reason, Belarus and Russia are less integrated in the international transportation system.

One of the biggest challenges for the development of the Baltic Sea Region is to decrease the isolation of its less-populated Northern regions from its densely-populated Southern regions, which are well integrated into the European transportation system. High-speed railway lines are being built ever further north in Sweden and Finland, and there are plans (through the Copenhagen–Gothenburg–Oslo project) for Norway to also be integrated into the European network within the next decade. The same can be said for high-quality roads, which, despite the challenging climatic conditions and terrain, make use of tunnels and bridges (especially in Norway) to make the Scandinavian cities ever more accessible. Developed air traffic from remote Scandinavian cities has already become an accepted standard





## 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 used: population with tertiary education, and employment in technology and knowledge sectors. This is one of the key indicators for the “Europe 2020” strategy. An objective of the EU’s “Smart growth” strategy is to reach a level of at least 40% of people completing third-level education by 2020.

In all of the large cities within the BSR, the population with tertiary education surpasses 20%. Compared to other European regions, cities in the BSR have larger populations with tertiary education, 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 and science and research institutions stimulates the level of higher education among the population. Cities like Rostock, Uppsala, Copenhagen, Kaliningrad (Königsberg), 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.

The highest proportion of employment in the science and technology fields is concentrated in the capitals (see Table 2) 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 evolution of regions and specialisation by developing powerful regional centres.

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 Jyväskylä as well as in Polish Krakow and Norwegian Stavanger.

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). Cluster initiatives demonstrate the dynamics of the indicator we have analysed. On average, over the years the number of people employed in science and technology fields in the cities in the whole Baltic sea region or analysed above analysed has grown by 5.6 percentage points, reaching an average of 33.5% in 2014. Despite comparably slower development of innovative industries in Russia, Saint Petersburg as main scientific centre still remains one of the most important scientific centres in the BSR.

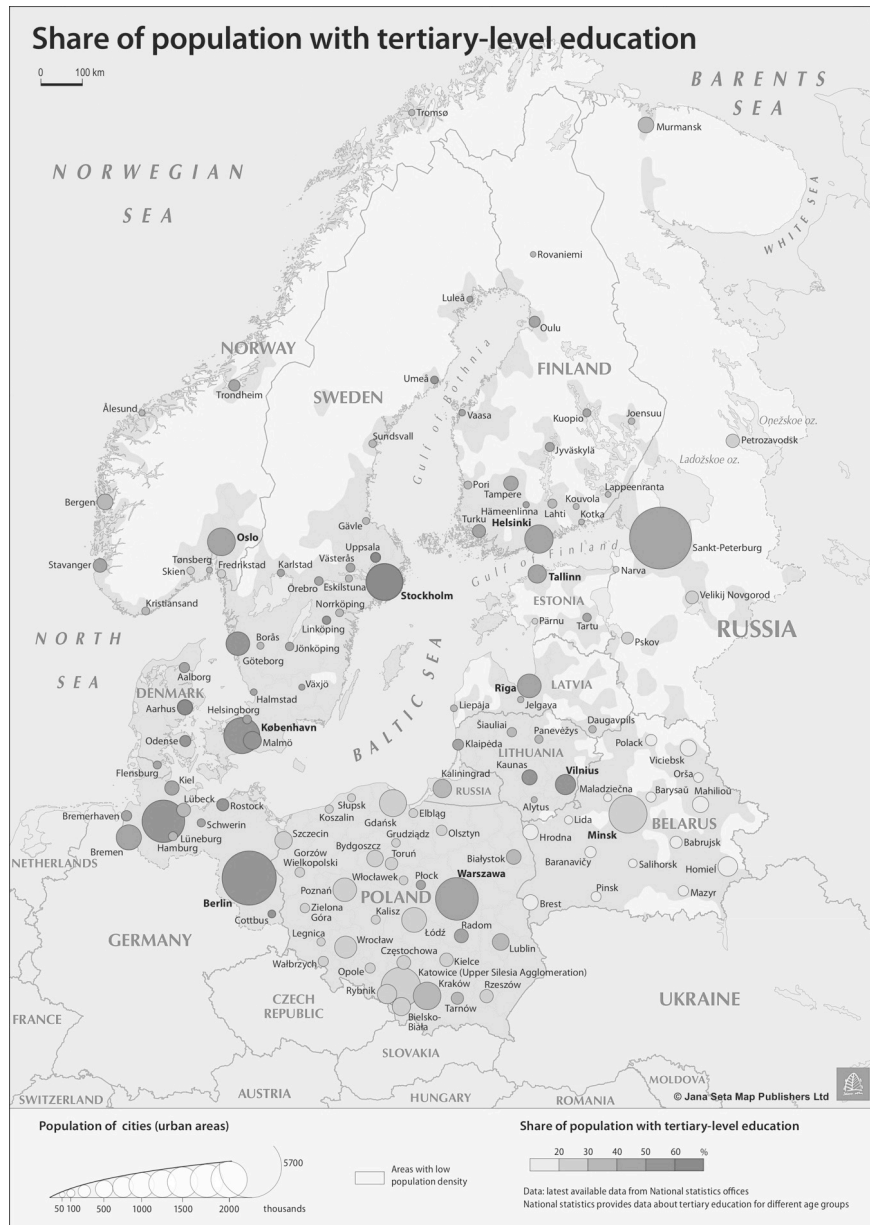


Figure 4: Share of population with tertiary education (2013)

Table 2: Employment in technology and knowledge sectors in cities (% of all employees)

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

Source: National data sources

## Social inclusion and quality of life

Economic modernisation and rapid social changes increase the number of people and groups that are left behind because they do not possess the economic, social and cultural capital that is needed to catch up with those changes. Social polarization in eastern cities of the region is caused mainly by long term effects of economic restructuring, migration and unemployment, while in large cities of the western and northern part of the region poverty has increased more as a result of the reduction of social transfers during the austerity period.

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

Overall larger cities of BSR rank among the top cities in EU in terms of perceived satisfaction with life in a city. When respondents of Flash Euro Barometer social survey were asked whether they agreed if they were satisfied with living in the 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 (EC, 2013)

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 increase in their unemployment rates (10-14 percentage points) over the studied period (see Table 3 and Figure 5). However, in the cities of the Baltic States unemployment reached its maximum in 2008, and in Finnish cities in late 2009 and early 2010. On the whole, indicators of unemployment dynamics in Baltic and Finnish cities are increasing, except for a few cities (such as Tartu, Pärnu, Pori, Rovaniemi and others, where a small decline in unemployment is observed).

Table 3: Unemployment dynamics in BSR cities (2005-2014)

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

Source: National data sources

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) (see Figure 6). 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 due to recent economic problems. A higher rate of poverty in certain Western cities, such as Berlin or Malmö (Sweden), can be explained by the influx of immigrants from non EU countries to those cities. Taking into account recent events, it is most likely that this situation will worsen and become a big challenge for Europe's most prosperous countries.

The risk of poverty is lower in Norway and Sweden and also in Belarus and north-western Russia. However, data from Russia and Belarus ought to be interpreted cautiously due to the different methods of calculation used in those countries. Nevertheless, the role of national policy in providing more affordable services and social welfare regime might play some role in explaining these differences.



Figure 5: Change in unemployment rate 2005-2014



Figure 6: People at risk of poverty or social exclusion (2013)

The at-risk-of-poverty level has increased between 2005 and 2013 for 54% the 127 surveyed city regions. 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 Białystok, Bremerhaven, Malmö, Poznań, Gorzów Wielkopolski, Zielona Góra 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.

## Implications for urban governance

Presented evidence point to several challenges for urban governance. Four of them are outlined below in detail.

1. *Discrepancy between administrative definitions of cities and their true size.* Growing suburbanisation is observed not only in BSR but in most urban areas of Europe. According to some estimates out of 66,5 million Europeans living in the morphological areas of the largest cities of Europe, 32,1 million, live in areas where administrative city is less than half of the continuous urban area (ESPON, 2007). Within the BSR Katowice in Poland provides the most striking example where it's continuous urban area is 7,1 times larger than the politically defined city (Tosics, 2011). Discrepancy between the administrative and functional area size poses several problems for local governance. One common problem relates to the financing of public services. Depending on each country's system of local governments, public services are supported by financial transfers from higher levels of government or are financed by the municipalities themselves. Provided that municipalities have some degree of autonomy in service provision it is possible that a part of suburban population will use city's services as free riders. This means that, for example, suburban families who reside and pay taxes outside city's administrative area will continue to use city's services. This will likely increase the suburban traffic and place extra cost on city's municipality. Local municipalities can also fall victims to so called spill-over effect of services. Unless, country's administrative system requires to provide certain services, most suburban local governments will not be interested in providing services but will convince their populations in using the services provided by city's local government.
2. *Tax competition in fragmented administrative urban government setting.* In the BSR local municipalities receive different revenues from local taxes, and they have different influence in policy implementation. According to recent ranking of OECD (2015), countries with low financial autonomy for local governments are Estonia, and Lithuania. In these countries local governments derive fewer than 20% of their total revenues. In Norway, Denmark, Finland and Sweden more than 40% of municipality revenues are derived from locally controlled sources and municipalities are important players in policy implementation and delivery of services. In Estonia, Latvia, and Lithuania municipal expenditure composes smaller share in the total GDP and municipal role in pol-



icy implementation and delivery of services is less significant. Other countries – Germany and Poland rank in the middle (OECD, 2015). Municipalities with greater financial autonomy are able to compete in order to become policies to attract firms and individuals. On the other hand, local taxation can also serve as exclusion tool for different social groups, for example, in case where environmentally more attractive settlements avoid providing social services for the poor, who therefore gravitate to less attractive settlements (Tosics, 2011:11). Urban governments can minimise negative effects of tax competition through top-down tax equalisation policies or bottom up agreements. This can be cumbersome in urban areas with high administrative fragmentation. In the end, tax competition is likely to contribute to certain forms of segregation in urban areas (Goodspeed, 1998; Tosics, 2011:11).

3. *Territorial dimension of social and economic inequalities.* Despite the fact that BSR countries have solved most of their fundamental material problems, it appears that inequality poses major challenges not only in countries that are less economically prosperous but also in rich countries. The results confirm significant differences between capital cities and smaller cities. In larger cities with some exceptions there are more people with tertiary education, higher employment rates including the employment in science and technology sectors, better accessibility and connectivity. Prior research has demonstrated that economic inequality is linked to wide range of humanitarian, social and even institutional problems (e.g. Wilkinson & Pickett, 2009). Unequal societies suffer more from health related and social problems, such as low life expectancy, weak math and literacy scores, more homicides, greater levels obesity and other problems. Levels of trust are also lower in unequal societies (as opposed to 70-80% in Sweden and Norway) (Wilkinson & Pickett, 2009). While these findings certainly reflect wider European phenomena (EC, UN-Habitat, 2016), it is not always clear what is the role of city governments in handling these problems. The results of this study show that city level poverty-at-risk and unemployment levels are largely shaped by the overall situation in each country. This points to the relevance of national level factors, including national policy interventions. Previous research has also found that targeting poverty only at city level might not be that effective because it can lead to so called “displacement effect” where social problems are displaced across neighbourhoods or the city and the countryside. Single city-led interventions are simply too narrow and too short-term to deal with such a complex problem as poverty. NODUS (2008-10) working group within URBACT II programme recognized that tackling poverty requires integrated approach with lasting results which does not just focus on physical improvements in poor neighbourhoods, but links these neighbourhoods to strategies of larger functional areas (NODUS, 2008-10). Simi-

lar conclusions are drawn in other scientific research projects – PLUREL (FP6), Joining Forces (URBACT II), City Lab (H2020), and Eurocities which emphasize the role of larger functional areas or municipality merging to address urban problems.

4. *Functional vs administrative model for urban governance.* Cities pursue different policy approaches in addressing complex challenges. It is beyond the scope of this article to assess these approaches in detail, however some general observations based on previous work of Jacquier (2010), Tosics (2011) can be made. In addition investigative projects, such as METROGOV under URABCT I programme, NODUS and Joining Forces under URBACT II programme PLUREL under FP6 research programme and others have distinguished between two methods that local governments can take to respond to growing complexity of processes extending over administrative boundaries of municipalities. The first method relies on structured, pre-defined administrative areas with strict vertical hierarchies (central state, province commune) – “hardware policies”, while the second relies on informal, flexible arrangements and socially creative strategies implemented by individual cities and social actors, organised on the level of neighbourhoods, metropolitan areas, transborder regions and the EU (sometimes called - “software policies”) (Jacquier, 2010). The example of the former approach are recent municipal amalgamations to achieve higher efficiency of public services. These amalgamations with examples from Denmark, Finland and Norway were largely implemented in a top-down manner. The example of the later approach is seen in the development of metropolitan regions in Germany. Metropolitan regions Germany were established in gradual bottom-up process as regional alliances. In 2005 they became a part of the Germans spatial development strategy. Metropolitan regions involve some functions of decision making and control, innovation and competition and gateway functions. (Balducci, et. al., 2004). Although major political influence in Germany is exercised by *Länder* governments, metropolitan regions have become key actors in providing cooperation between neighbouring areas, solving traffic problems, and increasing scientific-economic links (Tosics, 2011). Another example of the “software policy” can be identified in case of city-region building within Polish self government region of Silesia. There Metropolitan Association of Upper Silesia has been established to address different problems including depopulation. It contains Katowice and 13 other cities. Both approaches – formal/administrative and the informal-functional have their strengths and limitations. Policy makers will have to find the optimal mix of both approaches in addressing specific problems, such as education, mobility, health etc.

5.

## Conclusion

Although territories of BSR represent large internal heterogeneity in terms of population settlement and economic development patterns, the economic growth of cities has been a common theme during 2005-15 especially in larger cities and cities of Eastern Europe. All capital cities but especially global level metropolises and European level metropolises have significantly increased their integration into global economy.

The economic downturn following the crisis of 2008-09 affected the economies of some countries more than others. Although all metropolitan regions have grown their economies 2005-14 in terms of GDP/capita, it is quite obvious that the development of the cities, including the survival of 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, larger 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 are also serving points to surrounding areas. Although the development of small and medium sized urban areas and rural areas is not the focus of this research, it has to be emphasized that they also have an important role to play by ensuring the sustainability and territorial cohesion of the region. Despite different planning traditions and institutional frameworks, there is a remarkable common aspiration in spatial plans and visions developed in BSR countries to favor polycentric development. In this context the aims Territorial Development Perspective of the BSR 2030 laid down by VASAB are still relevant. The findings also point towards new challenges that should be addressed by appropriate policy responses, such as poverty.

In the same time, it is important to emphasize that the efficiency of the development lies in networking and territorial cooperation of cities of all sizes in order to ensure critical mass of development and qualitative services. For that cities need sufficient autonomy, sufficient funding. The implications for urban governance suggest that cities in BSR also need effective governance at functional metropolitan level to address the discrepancies between the administration definitions of cities and their true size, minimize negative effects of tax competition, address social and economic inequalities on different spatial scales. With awareness that city's economic area significantly extends its administrative area, several approaches to metro regional governance have been offered. Most contain some kind of distinction between formal and less formal methods of coordination in different spatial levels. One of the challenges is to ensure that the ideas and solutions developed on the new functional level get officially accepted by established administrative structures (local governments, regional governments, national level institutions). The future research is advisable to investigate reasons for development of BSR cities including contextual factors, such as city's location (e.g. coastal areas, inland, border areas etc.) while focusing on identifying innovative methods of urban governance.

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