Demographic challenges for societies on the Eastern shore of Baltic Sea

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Abstract

Three Baltic states – Estonia, Latvia and Lithuania, since they appeared on map as independent countries almost hundred years ago, have shared similar socio-political changes and demographic development. First and second world wars, years of the soviet rule tracked tremendous demographic consequences. A new generation has grown up to adulthood during a period of regained independence and soon will give a birth for children, who will form societal transformations in the 21st century. Similarities, peculiarities and challenges of factual and expected demographic changes during the transition period are analysed in the three Baltic countries and comparisons are made with other countries on the Eastern and Western shores of Baltic Sea.

Key-words: Estonia, Latvia, Lithuania, demographic trends and challenges

Introduction

Demography was and still is among the most studied and discussed societal issues in the three Baltic countries. Geographical location and a shared history with other nations around the Baltic Sea have influenced socio-demographic trends and differences in Estonia, Latvia and Lithuania. The aim of this study is to summarize main demographic changes in the Baltic countries during a period since they regained independence, to do comparisons with other countries on the Eastern and Western shores of Baltic Sea and to light up demographic challenges facing societies in the beginning of 21st century. More attention is focused to Latvia – the Baltic country suffered the most from the recent economic downturn.

Historical background

The beginning of demographic transition in the Baltic provinces of the Russian Empire emerged earlier than in other provinces: in Estonia and Latvia in the mid 19-th century, in Lithuania several decades later. Appearance of a modern type of population reproduction in Estonia and Latvia has been the earliest on the territory of Russian Empire and almost simultaneous with forerunners of fertility transition – countries of Northern and Western Europe (Coale, Anderson 1979; Katus and Puur 2003). In the second decade of 20th century population number in Latvia and Lithuania was with rather small difference (0.1-0.4 million) close to numbers in Denmark and Finland and exceeded number of population in Norway (Table 1).
### Table 1. Number of population in the three Baltic countries and selected Nordic countries, 1910-2011 (millions and changes in %)

<table>
<thead>
<tr>
<th></th>
<th>1910</th>
<th>1950</th>
<th>2011</th>
<th>2011/1910 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>1.07&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1.02</td>
<td>1.29</td>
<td>+20%</td>
</tr>
<tr>
<td>Latvia</td>
<td>2.55&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.95</td>
<td>2.07</td>
<td>-19%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2.83&lt;sup&gt;3&lt;/sup&gt;</td>
<td>2.57</td>
<td>3.05</td>
<td>+8%</td>
</tr>
<tr>
<td>Denmark</td>
<td>2.76&lt;sup&gt;4&lt;/sup&gt;</td>
<td>4.28</td>
<td>5.56</td>
<td>+101%</td>
</tr>
<tr>
<td>Finland</td>
<td>2.94</td>
<td>4.03</td>
<td>5.40</td>
<td>+84%</td>
</tr>
<tr>
<td>Norway</td>
<td>2.36</td>
<td>3.26</td>
<td>4.89</td>
<td>+107%</td>
</tr>
<tr>
<td>Sweden</td>
<td>5.52</td>
<td>7.04</td>
<td>9.48</td>
<td>+72%</td>
</tr>
</tbody>
</table>

<sup>1</sup> 1919, <sup>2</sup> 1914, <sup>3</sup> 1913, <sup>4</sup> 1911. Source: Official publications of the Statistical Bureaus.

Socio-political and economical consequences of the first and second world war influenced demographic development in all three Baltic countries tremendously – population numbers due to direct and indirect losses (especially emigration) in 1950 have not reached initial level. In some degree it was predetermined by repressions toward civilian population by occupation forces. Situation has changed during the further period of Soviet dominance, within which scanty natural increase of population was significantly surpassed (especially in Latvia and Estonia) by immigration from other parts of the Soviet Union.

Renewal of independence and socio-economical changes during transition period from centrally planned to market economy led to steep decline of fertility and out-flaw of population (removal of Soviet army and emigration opportunities caused by fall of iron curtain). Consequently population number in Latvia during hundred year period has declined by 19 per cent, which is rather unique figure among European nations. Increase of population numbers in Estonia and Lithuania significantly lagged behind those observed in the Nordic countries. Total population number in Denmark and Norway in the same period has increased more than twofold.

Since the beginning of 1990-s socio-political changes and transition to market economy caused decline of births rate and rise of mortality, which lead to period of depopulation in all three Baltic countries. Negative natural increase started in Lithuania two years later than in Latvia and Estonia (in 1993), declined more smoothly and demonstrated less signs of recovery in comparison with Estonia, which rather successfully reached zero natural increase in 2010 (Figure 1).
Negative natural increase and especially negative net migration, caused mostly by recent economic crisis, placed all three Baltic countries among countries with biggest population decline in Europe (Figure 2).
Consequences of unfavourable demographic trends combined with socio-economic transformations have raised discussions about further demographic development and challenges for societies on the Eastern shore of Baltic Sea, particularly for generations which grow up during a time of regained independence and integration to the European Union.

**Improvements in data reliability**

During four decennials of Soviet rule detailed official demographic data were published only for restricted circulation. It was caused by misinterpreted secrecy of military use of such data and unfavourable demographic trends, particularly in health and life expectancy. Situation has started to change only with Gorabachov’s policy of openness (”glasnostj”) in the second half of 1980-s. Since that time population studies in the Baltic countries have intensified and results of them appeared on international scale.

During the 1990-s population registers were introduced in all three Baltic countries and data obtaining and processing since that time started according to international standards and recommendations. Nevertheless some drawbacks appeared in migration statistics – firstly, during an out-migration wave associated with Soviet military personell removal and with collapse of immigrant labour-force based big industrial enterprises, secondly, during a liberalisation of mobility and an opening borders for free movement of labour force (especially after enlargement of the EU in 2004).

Impact of the recent recession on socio-demographic development in combination with an increased external mobility after the EU enlargement led to the significant demographic changes, which influenced course and results of Population Censuses 2011. Recession manifested in a rising unemployment, inflation and decline of real wages. That forced significant out-flaw of working-age population to look for an employment options and decent income abroad. Out-flow was only partially recorded by official statistics, which to great extent rely on registered changes of residency by Population Register. Due to growing unregistered out-flow of population a difference between the factual and estimated number of population exceeded in Latvia in the 2011 seven per cent, In Lithuania 5 (?), but in Estonia - per cent.

Necessity for innovative approaches in measurement of demographic data during the Census, after the Census and re-estimation of official pre-Census figures emerged. Comprehensive use of individual data from different registers and data-bases in combination with new methodology of specified counts of population and its components of changes, developed by Statistical Bureaus, allowed to improve reliability of demographic statistics. Use of combined face-to-face interviews, Internet registration and different state administrative registers allowed to clarify factual resident population during Census 2011 and to perform a backward calculation of population change and its components for pre-Census period (Table 2).
Table 2. Population change and its components in Latvia, Prior and After data specification by CSB (%)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population change, Prior</td>
<td>-0.46</td>
<td>-0.42</td>
<td>-0.57</td>
<td>-0.83</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Population change, After</td>
<td>-0.77</td>
<td>-1.32</td>
<td>-1.96</td>
<td>-2.16</td>
<td>-1.03</td>
<td>-1.10</td>
</tr>
<tr>
<td>of which due to natural increase, Prior</td>
<td>-0.43</td>
<td>-0.31</td>
<td>-0.37</td>
<td>-0.48</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>due to natural increase, After</td>
<td>-0.41</td>
<td>-0.30</td>
<td>-0.36</td>
<td>-0.48</td>
<td>-0.45</td>
<td>-0.41</td>
</tr>
<tr>
<td>due to international migration, Prior</td>
<td>-0.03</td>
<td>-0.11</td>
<td>-0.20</td>
<td>-0.35</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>due to international migration, After</td>
<td>-0.36</td>
<td>-1.02</td>
<td>-1.60</td>
<td>-1.68</td>
<td>-0.58</td>
<td>-0.69</td>
</tr>
</tbody>
</table>


Population change in Latvia mostly due to undercount of international migration until 2010 was underestimated. Recession determined a decline of fertility. However, factual fertility level during recession was higher than estimated fertility figures. Life expectancy during recession continued to rise, but by lesser absolute increase in comparison with estimated before. Problem of incomplete population mobility declarations in the Population Register is not eliminated yet (see Table 3).

Table 3. Number of population in Latvia at the beginning of year by the CSB official data and Office of Citizenship and Migration Affairs (OCMA) Population Register data, thsd

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009*</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) CSB official data</td>
<td>2192</td>
<td>2163</td>
<td>2121</td>
<td>2075</td>
<td>2045</td>
<td>2024</td>
<td>2001</td>
</tr>
<tr>
<td>2) OCMA Population Register data</td>
<td>2268</td>
<td>2262</td>
<td>2255</td>
<td>2237</td>
<td>2217</td>
<td>2201</td>
<td>2180</td>
</tr>
<tr>
<td>Difference 2) – 1)</td>
<td>76</td>
<td>99</td>
<td>134</td>
<td>162</td>
<td>172</td>
<td>177</td>
<td>179</td>
</tr>
<tr>
<td>Ratio 2) / 1), %</td>
<td>+3.5</td>
<td>+4.6</td>
<td>+6.3</td>
<td>+7.8</td>
<td>+8.4</td>
<td>+8.7</td>
<td>+8.9</td>
</tr>
</tbody>
</table>


Excess of registered number of residents by the Population Register over population figures estimated by the CSB is increasing both absolutely and relatively. In 2014 it has reached almost 9 per cent. Legislative alignment and motivation of residents to declare international mobility is a serious challenge to improve reliability of population figures and socio-economic decisions made upon them.

Comparison of demographic changes during the two periods of recession (1992-1994 and 2008-2010) demonstrates quite similar picture with minor peculiarities (Table 4).
Table 4. Demographic changes in Latvia: Comparison of the two recession periods

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>of which</td>
<td></td>
<td></td>
</tr>
<tr>
<td>due to natural movement (%)</td>
<td>-1,3</td>
<td>-1,1</td>
</tr>
<tr>
<td>due to international migration (%)</td>
<td>-4,1</td>
<td>-4,2</td>
</tr>
<tr>
<td>Total fertility rate and its changes (%)</td>
<td>1,56</td>
<td>1,47</td>
</tr>
<tr>
<td>Life expectancy (years) and its changes (%)</td>
<td>67,5</td>
<td>72,8</td>
</tr>
</tbody>
</table>

Recent recession in comparison with recession during the first half of 1990s is characterized by slower decline of fertility, slightly faster increase of emigration and rising life expectancy.

**Fertility changes and reproduction of population**

Fertility decline in all three Baltic countries has followed trajectories of the East European countries (Figure 3). During the first two phases of fertility changes in the 1990-s decline of total fertility rate in Latvia was the most expressed.

![Figure 3. Total fertility rate in the three Baltic countries and selected East European countries, 1990-2011.](image)


Insignificant rise of total fertility rate during the first decennial of 21st century was stopped by recession. A question mark is outlined for contemporary 4th phase in fertility changes.
Further fertility changes will depend from recovery of national economies and effectiveness of social policy. So far 2.1-2.3 children ultimately expected by female from the birth cohorts of 1960-s and 1970-s is not realised (UN, 1998).

Increase of a mean age at first birth, which started in the Baltic countries since beginning of 1990-s (15-20 years later than in Western and Northern Europe) has contributed to decline of fertility. Among reasons of postponement of birth are socio-economic conditions (Table 5).

Table 5. Reasons of postponement of birth in 2006 (% people aged 15-39)

<table>
<thead>
<tr>
<th></th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
<th>Poland</th>
<th>EU-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive partner</td>
<td>71</td>
<td>70</td>
<td>80</td>
<td>77</td>
<td>72</td>
</tr>
<tr>
<td>Farthers work</td>
<td>66</td>
<td>77</td>
<td>78</td>
<td>67</td>
<td>62</td>
</tr>
<tr>
<td>Financial situation</td>
<td>57</td>
<td>77</td>
<td>77</td>
<td>74</td>
<td>60</td>
</tr>
<tr>
<td>Housing conditions</td>
<td>69</td>
<td>72</td>
<td>77</td>
<td>71</td>
<td>57</td>
</tr>
<tr>
<td>Costs of children</td>
<td>56</td>
<td>74</td>
<td>69</td>
<td>62</td>
<td>50</td>
</tr>
<tr>
<td>Mothers work</td>
<td>35</td>
<td>46</td>
<td>52</td>
<td>43</td>
<td>49</td>
</tr>
<tr>
<td>Childcare provision</td>
<td>59</td>
<td>78</td>
<td>64</td>
<td>37</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: Testa M. Childbearing preferences and family issues in Europe. Special Eurobarometer 253/Wave 65.1.

Mothers work in situation with rather high female employment in Baltic countries and Poland is not considered by respondents as a major reason of postponement of birth. Much more serious reason is considered „childcare provision”, „supportive partner” and different socio-economic conditions. But even with elimination of reasons of postponement of birth societies can not expect significant changes in reproduction of population (Figure 4).

![Figure 4. Childbearing intentions EU25 countries. Source; Eurobarometer, 2006.](image-url)
Childbearing intentions in the Baltic countries like in many other West and East European nations demonstrate almost simple change of generations. Only in the three countries more than 2.5 children per women aged 25-39 is supposed to have. Such motivation leads to conclusion that more effective family and population policy measures have to be undertaken to improve reproductive behaviour of population.

Decline of fertility, prolongation of life and entrance into retirement age more numerous cohorts born after WW2 has caused process of population aging, which could continue even in case of constant fertility on the level existed at the beginning of 21st century (Figure 5).

Moderate increase of fertility and positive net migration balance could clithly resist a tendency of population aging, but do not stop it. Growing proportion of population over the age 65 in all three Baltic countries, like in many other European countries, rise a pressures on retirement schemes and health care expenditures.

**Life expectancy and health**

“Cardiovascular revolution“ since 1970-s initiated a new phase of epidemiologic transition. Several authors (J. Olshansky and B. Ault; R. Rogers and R. Hackenberg) during the 1980-s suggested to bring in theory fourth phase of epidemiologic transition, which is characterised by progress in prevention and treatment of heart and circulatory system diseases, which lead to further increase of life expectancy. However, many exceptions appeared since 1960-s in health improvement, which caused stagnation of life expectancy for female and decline for male (Figure 6).
Latvia like many other former Soviet satellite countries missed beginning of cardiovascular revolution. Only very limited increase in female and decline in male life expectancy appeared during Soviet era in comparison with almost linear increase of life expectancy in the West and North European countries.

Situation changed in Baltic countries since the eve of 21st century, when started fourth phase of epidemiologic transition (Figure 7). During that time decline of circulatory disease mortality influenced increase of life expectancy in Estonia and Poland in a larger extent than in Latvia and Lithuania. Russia joined that phase of epidemiologic transition with almost ten years time lag.
Figure 7. Changes in life expectancy at birth caused by mortality increase or reduction from circulatory diseases and other causes of death in the three Baltic countries, Poland, Russia and France, 1997-2010 (years)

Health expectancies are used to address whether or not longer life is being accompanied by an increase in the time lived in good or in bad health. In this way they add a dimension of quality to the quantity of life lived (Figure 8).
Baltic countries belong to a cluster of CEE countries with low LE and HLY, particularly for men. Another group of countries with similar LE, but widely ranging HLY, are forming another cluster. Improvements of health status and increase of life expectancy is envisaged as an important social goal. For example, in Public Health Strategy for 2011-2017, adopted by Cabinet of Ministers of Latvia in 5 October 2011, the aim of a public health policy is - a
prolongation of healthy life years and prevention of untimely deaths, while maintaining, improving and restoring health.

**Emigration challenge**

Migration is a traditional component, which affect population changes in the Baltic countries. Soviet period extensive migration policy with typical positive migration balance in the Soviet Baltics (especially in Estonia and Latvia) in the late 1980-s was changed by new paradigm – to place constraints on immigration and relay more on native demographic potential. Such intentions give some results until mid 1990-s.

Fall of an iron curtain and integration to the European Union liberalized free movement of people and stimulated emigration, which increased radically during economic downfall. A new paradigm appeared – to set up measures to resist an out-flaw of population (such measures were limited and not efficient) and to develop incentives to keep closer relations with new Diaspora and to stimulate return migration.

Characteristic feature of a recent emigration wave from the Baltic countries is destination to other EU countries (mostly English and German language speaking countries) (see Figure 9).

The societies of the three Baltic countries consider high emigration not only as a threat, but also as a potential financial resource to support households and growth of national economies. By using specially designed programmes they are trying to mobilise financial and intellectual resources of the Diaspora.

Conclusions

A period, since the three Baltic countries started socio-political and economic transformations from demographic time frame is covering generations, which are growing up in independent countries. Current and expected demographic behaviour of those generations will determine future demographic scenarios. During a life-time of those generations societies faced two serious economic down-turns - economic crisis at the beginning of 1990s and recent crisis of 2008-2009. Integration of Estonia, Latvia and Lithuania in the European Union in 2004 opened door for new opportunities, including free movement across a national borders.

Population Census 2011 methodology and advanced methods of population statistics processing have resulted in providing reliable figures of total population change and its components during a period of fast demographic changes – the first decade of the 21st century. Nevertheless serious steps toward improvement of accuracy of migration and resident population registration in the Population Registers should be undertaken.

Historically determined “highway” of demographic transition and new challenges opened to society caused an unfavourable situation, when countries have to deal with demographic imbalances (sub-replacement fertility, postponed fourth phase of epidemiologic transition, population aging, and emigration). Measures aimed to rise fertility in circumstances of limited resources generally have failed to rise up fertility levels significantly. Population and family policy and their effectiveness still is a serious challenge at all levels – parliament, government, non-governmental and societal.

Initiatives to address population aging as an important challenge for sustainability of existing retirement schemes were recently overtaken by debates, how to deal with problems of large-scale wing of emigration, how to strengthen ties with Diaspora and to cause return-migration. Adjustable immigration, return-migration together with incentives to strengthen competitiveness of national economies and to reduce regional and social inequalities is a rising challenge for all three Baltic countries.

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