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Extended abstract

Key-words: impact of recession, demographic changes, population census, Latvia.

Introduction. During a three years after accession to the EU GDP per capita in Latvia increased by 38% (in prices of 2010), reaching the maximum in 2007-2008 (10.5 and 10.3 thsd EUR) and accompanied by gradual introduction of a free movement of labour force between Latvia and other EU countries. That period (called “fat years”) were interrupted by recession, which accelerated during the second half of 2008 and intensified by an emergency measures to eliminate consequences of collapse of the Parex Bank (Åslund and Dombrovskis). In 2009 GDP per capita declined by 16% (falling down to the level of 2005), intensified a free movement of labour force, increased inflation and registered unemployment. Next in turn Population and Housing Census (further in text Census) due to budgetary cuts was postponed to March 2011. Gradual recovery from crisis started in 2011. During the course of Census and publication of its results intensified discussion in mass-media (LETA) and among specialists about reliability of methods used to enumerate population, about recent demographic changes, their determinants and consequences. The aim of this study is to summarise main lessons from the recent recession in a light of results from the Census 2011 and to demonstrate their impact on demographic changes in Latvia.

Background. Latvia and other two Baltic states are among the European countries with combined enumeration of population based on registers and other sources. During the Census 2000 part of information in Latvia was obtained from registers and information systems. Census 2000 final results slightly differed from the previously estimated by the CSB – the number of population in Latvia has declined by 42 thsd persons. This was mainly due to shortcomings in the emigration statistics, especially during the first years after regaining of independence, when legal regulations on emigration was not developed (CSB 2002). Consequently a number of population, components of population change and crude rates were recalculated by the CSB on the basis of final results of the Census 2000 and published in a separate chapter of the Demographic Yearbook 2003 – “Recalculations of demographic indicators, 1989-2000” (CSB, 2003). Crude death rates differed from previously published by ± 0.1 ‰ in 2 cities and 7 counties. Age-specific rates and Life tables were not recalculated.

Census 2011. In accordance with the "Law on Population and Housing Census" CSB is organising Census not rarely than once in 10 years. In October 2007 Cabinet of ministers issued Regulation „On Length and Date of the Current Population Census” and „By-law of the Population Census Committee”. Intensive preparation for the next Population Census has started, which was outshined by coming recession, budgetary cuts and outflow of population from country. Census was carried out in the three stages. During the 1st stage (March 1-12) 30% of the total population filled in the questionnaires by using the Internet. During the 2nd stage (March 17-May 31) interviewers visited dwellings and obtained information from 83% of the persons included in the interviewer lists. All the rest of residents, which did not take part in the 1st and 2nd stage of the Census, had an opportunity to fill in the Census questionnaires on the Internet during the 3rd stage (June 1-10). Altogether until June 10 information was obtained about 1880 thsd persons. Due to various reasons (non-response, unmet respondents or interviewer mistakes etc.) organizers of the Census during the three stages of Population census did not succeeded to obtain information from all residents estimated by the CSB before the Census and on all registered persons within the Population

Register of the Office of Citizenship and Migration Affairs (OCMA). Aimed to find out, if the persons not surveyed can or cannot be considered as the resident population of the country on 1 March 2011, the information of the state administrative registers by Census staff was checked and used (the chosen criteria to determine the resident and non-resident population by using registers see: CSB, On Population Census 2011). Consequently, it was identified that resident population of Latvia additionally includes 188 thsd persons, but 160 thsd persons were not recognized as resident population of Latvia. Before the Census 2011 primary statistical information on migration principally was based on the Population Register data. During 2008-2011 a difference between the CSB official total population estimates and Population Register data constituted only 1-7 thsd persons (Table 1).

Table 1. Number of population in Latvia at the beginning of year by data sources, thsd

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2013* |
|---------------------------------|------|-------|------|------|------|------|-------|
| 1)CSB, pre-census estimates | 2271 | 2261 | 2248 | 2230 | ... | ... | ... |
| 2)CSB, post-census calculations | 2192 | 2163* | 2121 | 2075 | 2045 | 2024 | 2014* |
| 3)OCMA Population Register data | 2268 | 2262* | 2255 | 2237 | 2217 | 2201 | 2189* |
| Difference 3) – 2) | 76 | 99 | 134 | 162 | 172 | 177 | 175 |
| Excess 3) / 2), % | +3.5 | +4.6 | +6.3 | +7.8 | +8.4 | +8.7 | +8.7 |

*1st of July. Data sources and calculations from: CSB, 2011. P.18; CSB, 2013. P.18;

OCMA <http://www.pmlp.gov.lv/lv/sakums/statistika/iedzivotaju-registrs/arhivs.html>

According to the results of several studies out-migration from Latvia was underestimated by official statistics before the Census 2011 (Hazans, Krasnopjorovs, Zvidrins et al). CSB calculation of population number shows that at the beginning of 2011 in Latvia were resided 2075 thsd persons. In comparison with the number of population published prior Census, the number of population has reduced by 155 thsd or 7 per cent. Notable reduction in the population number in Latvia was recorded in ages 23-31 year (more than 14%) mostly explained with difficulties to find employment in country and forcing emigration of young people to find a job abroad. Alternative ways of estimation of number of residents were discussed and implemented (Valkovska). Problem of undercount of undeclared migration has emerged in Estonia and Lithuania as well, were the first census counts demonstrated difference with the previously estimated population numbers accordingly (Ambrozaitiene; Tammur and Rannala, Beltadze and Tiit, Krumins and Dubkova). Consequently, post-census recalculations of population numbers were performed by the CSB of Latvia, based on Census 2011 results, vital events registry data, OCMA registered data, and estimates of unregistered migration. Factually, a difference between the population numbers, recalculated by the CSB after the Census 2011, and the OCMA Population Register data during 2008-2011 due to emigration undercount was growing. At the beginning of 2011 that difference reached 162 thsd or 7.8%. During 2012-2013 it still remained high exceeding 170 thsd persons or more than 8 per cent compared to official population numbers published by the CSB.

Demographic changes during recession: situation before and after recalculations.

Backward recalculations of demographic indicators performed on the basis of Census 2011 results and applied methodology demonstrate both a higher crude birth and death rates and a minor difference in natural increase of population. The most noticeable difference are in measurements of net migration (Table 2).

Table 2. Demographic indicators in Latvia before and *after* (italic) backward recalculations performed on the basis of Population Census 2011 results, 2004-2010

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| Births, per 1000 population | 8.8 | 9.3 | 9.7 | 10.2 | 10.6 | 9.6 | 8.6 |
| | <i>9.1</i> | <i>9.8</i> | <i>10.3</i> | <i>10.9</i> | <i>11.2</i> | <i>10.3</i> | <i>9.4</i> |
| Deaths, per 1000 population | 13.8 | 14.2 | 14.5 | 14.5 | 13.7 | 13.3 | 13.4 |
| | <i>14.2</i> | <i>14.6</i> | <i>14.9</i> | <i>15.0</i> | <i>14.2</i> | <i>14.0</i> | <i>14.3</i> |
| Natural increase, per 1000 population | -5.0 | -4.9 | -4.8 | -4.3 | -3.1 | -3.7 | -4.8 |
| | <i>-5.1</i> | <i>-4.8</i> | <i>-4.6</i> | <i>-4.1</i> | <i>-3.0</i> | <i>-3.6</i> | <i>-4.8</i> |
| Net migration, per 1000 population | -0.5 | -0.2 | -1.1 | -0.3 | -1.1 | -2.0 | -3.5 |
| | <i>-6.7</i> | <i>-4.9</i> | <i>-3.9</i> | <i>-3.6</i> | <i>-10.2</i> | <i>-16.0</i> | <i>-16.8</i> |
| Total fertility rate | 1.24 | 1.31 | 1.35 | 1.41 | 1.45 | 1.32 | 1.18 |
| | <i>1.29</i> | <i>1.39</i> | <i>1.46</i> | <i>1.54</i> | <i>1.59</i> | <i>1.47</i> | <i>1.36</i> |
| Male life expectancy at birth, years | 67.1 | 65.6 | 65.9 | 65.8 | 67.2 | 68.3 | 68.8 |
| | <i>65.9</i> | <i>65.2</i> | <i>65.2</i> | <i>65.3</i> | <i>66.7</i> | <i>67.7</i> | <i>68.1</i> |
| Female life expectancy at birth, years | 77.2 | 77.4 | 76.8 | 76.5 | 77.9 | 78.1 | 78.4 |
| | <i>76.3</i> | <i>76.6</i> | <i>76.3</i> | <i>76.2</i> | <i>77.7</i> | <i>77.8</i> | <i>78.1</i> |

Sources: CSB, 2011. P. 22, 23, 65, 82; CSB, 2012. P. 21, 22, 23, 62, 78.

Recession affected demographic situation in the country and determined a decline of TFR. However, that decline according to the post-census recalculated data was less than presumed before. New approach to the births count was implemented by the CSB - starting from 2000 the number of births includes also children born abroad to mother (permanent resident of Latvia) temporary residing outside Latvia. In compliance with the methodology of the Eurostat the mentioned children should be included in the number of children born in the Republic of Latvia. Life expectancy during recession demonstrated positive changes and continued to grow, but by lower absolute increase in comparison with the pre-census estimates.

Conclusions. 1) Recent recession influenced a rise of unemployment, inflation and decline of real wages, which forced significant out-flaw of working-age population to leave a country to look for employment options and decent income. That out-flaw mostly was not recorded by official statistics which to great extent rely on registered changes of residency in Population Register. Due to growing unregistered net migration difference between factual and estimated number of population (and registered number of residents in Population Register) exceeded in Census 2011 seven per cent; 2) 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 backward recalculations of number of population and demographic indicators for pre-census period. New methodology was implemented by the CSB to improve a post-census current demographic estimates; 3) Problem of incomplete exit declarations in the Population Register is not prevented yet. Difference between contemporary population figures estimated by the CSB and registered number of residents by the Population Register still exceeds eight per cent; 4) Recession determined a decline of fertility. That decline was to a lesser extent according to the post-census recalculated data; 5) Life expectancy during recession continued to increase, but by lower absolute increase in comparison with the pre-census estimates.

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member, Population Census Section, Populations Statistics Section and Mathematical Support Division of the Central Statistical Bureau of Latvia.

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