POLAND MORTALITY REPORT 1/2015

This document provides summary of most important Poland population and mortality statistics and most important new research overview. Document prepared by Ewa Dylewska. Special acknowledgments to Witold Florczak, PhD and Adam Wróbel for peer-review of this report.

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NEW RESEARCH

This section is for research published in the last 12 months.

NEW MORTALITY TABLE ‘GUS 2013’

The latest available Poland mortality table is GUS 2013 population table developed by Central Statistical Office of Poland (GUS - Główny Urząd Statystyczny). In 2013 study report (Life expectancy tables of Poland 2013) GUS provides detailed description of methodology underlying construction of Polish mortality tables.

<table>
<thead>
<tr>
<th>Period Covered</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors</td>
<td>Gender</td>
</tr>
<tr>
<td>Duration</td>
<td>Only ultimate rates</td>
</tr>
</tbody>
</table>

IMPROVED LIFE EXPECTANCY DUE TO TREATMENT OF HIV/AIDS

Total number of HIV registered cases in Poland since start of observation in 1985 till end of year 2014 is 18 646, AIDS cases is 3 200 and there have been 1 288 deaths due to HIV/AIDS. Although awareness of HIV/AIDS is increasing, percentage of diagnosed to total HIV/AIDS cases is still low: around 30% (2011 estimate) which may disturb the overall observation of new diagnosed cases.

Latest data of National Institute of Public Health (PZH – Państwowy Zakład Higieny) indicate increased number of registered HIV/AIDS cases during last 6 years (2009-2014). Although number of diagnosed each year HIV/AIDS cases is generally increasing (2004-2014), number of deaths due to AIDS remains at relatively stable level. Introduced by Ministry of Health new HIV/AIDS treatment plan for years 2012-2016 is expected to decrease mortality risk resulting from this disease. Detailed data regarding number of new registered cases of HIV/AIDS and AIDS related deaths in Poland in years 2004-2014 (11 years), as well as age & gender structure of cases in years 2009-2014 (6 years) is presented as attachment to this report.

Graph 1: Number of new registered cases of HIV/AIDS and AIDS related deaths in Poland in years 2004-2014. Own elaboration based on PZH data.

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NEW MORTALITY PROJECTION

Population Projection 2014-2050\(^5\) published by Central Statistical Office of Poland (GUS - Główny Urząd Statystyczny) include life expectancy and mortality projection. There is applied simplified methodology based on best-fit exponential function and mortality data for developed European countries. Obtained results consider decrease of gap in life expectancy ($e_0$) between Males and Females in Poland to 5.4 years in year 2050 vs. 8.1 currently (2013). Expected lifetime at birth would reach in 2050: 82.1 years for Males and 87.5 years for Females.

ANOTHER PROJECT

There have been published by Central Statistical Office of Poland (GUS - Główny Urząd Statystyczny) statistics regarding “garbage codes”\(^6\) for cause of death in Poland. As percentage of garbage codes in defining cause of death exceeds 25%, Poland is constantly excluded from WHO cause of death analysis. High ratio of “garbage codes” impedes precise comparison of risk of deaths due to defined causes for Poland. “Garbage codes” relate especially to deaths due to circulation system diseases in elder age groups.


COUNTRY BACKGROUND

This section is aimed to provide background about the country.

POPULATION

DEMOGRAPHICS

The Table below summarises basic information on population of Poland.

<table>
<thead>
<tr>
<th>Basic Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current population</td>
<td>38,495.7 thousands(^7) (on 31st of December 2013)</td>
</tr>
<tr>
<td>Current period life expectancy</td>
<td></td>
</tr>
<tr>
<td>- At birth</td>
<td>Males: 73.06, Females: 81.14 (2013)(^8)</td>
</tr>
<tr>
<td>- At 65</td>
<td>Males: 15.50, Females: 19.80 (2013)(^8)</td>
</tr>
<tr>
<td>Population of urban areas (%)</td>
<td>60.4% (2013)(^7)</td>
</tr>
<tr>
<td>Population Pyramid</td>
<td>Total population by age &amp; gender (2013)(^9)</td>
</tr>
</tbody>
</table>


Population 
Pyramid

Total population by age & urban/rural areas residence (2013)\(^\text{10}\)

<table>
<thead>
<tr>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of people

Population projections 36 476.8 thousands in year 2035, 33 950.6 in year 2050 (GUS\(^\text{11}\) 2014)

POPULATION MORTALITY TABLES

Poland population mortality tables are published by Central Statistical Office of Poland (GUS - Główny Urząd Statystyczny) and are the basic and the only official source of information regarding mortality rates in Poland. Mortality tables for consecutive years 1990-2013 are attachment to this report.

POPULATION MORTALITY IMPROVEMENTS

Life expectancy (e\(_x\)) is increasing for both Males and Females. There is particularly significant gap between length of life of Males and Females. Detailed data is presented in the attachment to this report.

Graph 2: Life expectancy at age 0 (e\(_0\)) of Males and Females in Poland in years 1950-2013. Own elaboration based on GUS\(^\text{12}\) data.

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Graph 3: Life expectancy at age 60 ($e_{60}$) of Males and Females in Poland in years 1950-2013. Own elaboration based on GUS\textsuperscript{13} data.

This section provides background on the life insurance protection environment. This is for life insurance and not longevity protection.

MARKET BACKGROUND

This section should provide high level details on the following:

- Products sold: mainly life insurance (Term, Endowment type, Whole Life), life insurance linked to insurance capital funds (Unit-Linked), accident and sickness insurance; all both Individual and Group. Structure of gross written premium\(^{14}\) in year 2013:

<table>
<thead>
<tr>
<th>Gross written premium</th>
<th>thous. PLN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL Personal</td>
<td>31,240,971</td>
<td>100.0%</td>
</tr>
<tr>
<td>Life insurance</td>
<td>13,139,311</td>
<td>42.1%</td>
</tr>
<tr>
<td>Dowry insurance, birth insurance</td>
<td>113,458</td>
<td>0.4%</td>
</tr>
<tr>
<td>Life insurance linked to insurance capital funds</td>
<td>13,051,939</td>
<td>41.8%</td>
</tr>
<tr>
<td>Annuity insurance</td>
<td>106,980</td>
<td>0.3%</td>
</tr>
<tr>
<td>Accident insurance</td>
<td>4,035,308</td>
<td>12.9%</td>
</tr>
<tr>
<td>Sickness insurance</td>
<td>793,975</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Life insurance linked to insurance capital funds are mainly investment products that contain protection part.

Detailed data is presented in the attachment to this report.

- Levels of underwriting: both underwritten, simplified underwriting and guaranteed issue contracts
- Group (54% in terms of GWP) and individual (46% in terms of GWP) business\(^{14}\)
- For group cover whether cover is compulsory: N/A
- State provided cover: N/A

MORTALITY TABLES

Official (GUS) population mortality tables are most commonly used in actuarial practice in Poland. Population adjustment factors and gender structure factors for unisex pricing in line with Company experience may be used as well.

MORTALITY IMPROVEMENTS

Life insurance companies may perform own mortality improvement studies or use available academic research. No official projected mortality tables.

RETAIL LONGEVITY PROTECTION

This section should cover the annuity / pension market.

MARKET BACKGROUND

Private pension market is negligible in Poland. For instance, only 0.3% of gross written premium in year 2013 came from private annuity insurance\(^{15}\). Public pensions are paid and administrated by Polish Social Insurance Institution (ZUS – Zakład Ubezpieczeń Społecznycy\(^{16}\)).

This should explain the basics of the market, including:

- Traditional Pensioners: N/A
- Retail annuity market: Annuity market is niche
- State provision\(^{17}\): paid by ZUS
- Level of compulsion in purchase of annuities: voluntary, no tax incentives.

MORTALITY TABLES

Private market: Official (GUS) population mortality tables are most commonly used in actuarial practice in Poland. Population adjustment factors and gender structure factors for unisex pricing in line with Company experience may be used as well.

Public pensions: specific cohort-based prognostic models elaborated by ZUS\(^{18}\). The latest model for prognosis of earnings and expenditures - FUS12 (2013) considers mortality projections till year 2060 and can be based on two available population projections: Eurostat Ageing Working Group\(^{19}\) population projection for Poland (2012) and GUS population projection for period 2009-2035, extended till year 2060.

MORTALITY IMPROVEMENTS

Life insurance companies may perform own mortality improvement studies or use available academic research. No official projected mortality tables.

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\(^{15}\) Polish Insurance market quarter reports, KNF: http://www.knf.gov.pl/opracowania/rynek_ubezpieczen/Dane_o_rynku/Dane_roczne/dzne_roczne.htm

\(^{16}\) ZUS official web-page: http://www.zus.pl/default.asp?p=1&id=1442

\(^{17}\) Organization of the Polish social security system: http://www.zus.pl/files/social_insurance.pdf


\(^{19}\) Eurostat Ageing Group population projections reports, Eurostat: http://europa.eu/epc/working_groups/ageing_en.htm
RELEVANT ORGANISATIONS

DETAILS ON GOVERNMENT STATISTICS DEPARTMENT

ACTUARIAL SOCIETY OF THE COUNTRY
Polskie Stowarzyszenie Aktuariszy (Polish Society of Actuaries): http://www.actuary.org.pl

INSURANCE REGULATOR
Komisja Nadzoru Finansowego (Polish Financial Supervision Authority): http://www.knf.gov.pl

ATACHMENTS


   ![HIV/AIDS_PZH.xlsx](HIV_AIDS_PZH.xlsx)

2. Poland GUS Mortality tables, GUS\(^\text{21}\) (1990-2013)

   ![lifetables1990-2013.xls](lifetables1990-2013.xls)

3. Poland life expectancy at age 0, 15, 30, 45, 60 and 75, GUS\(^\text{22}\) (1950-2013)

   ![ex1950-2013.xls](ex1950-2013.xls)


   ![V_Sprawozdanie_stata_2013_tcm75-39166.xls](V_Sprawozdanie_stata_2013_tcm75-39166.xls)

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