

Aging Poland: Can the Doomsday Scenario Be Avoided?

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Grzegorz Jędrzejczak*

The Doomsday Scenario of too few workers unable to support too many pensioners dominates the public debate about travails of the Polish pension system in not so distant future of the generation currently entering the labor market. We discuss the risk of the Doomsday Scenario, and under what conditions it can be avoided. To that end, we analyze two stylized scenarios: continuation of the current model of intergenerational solidarity between current and past employees, and the case of solidarity of the society at large. We show that the narration that “there will be too few workers to support too many pensioners” is just wrong, both, in terms of necessary financial resources and emerging challenges of the global economy. Poland, as many other countries, must face the challenge of radical reform of the pension system, reform going far beyond the age of retirement. The main challenge will be bigger diversification of available financial products for financing pensions as well as broadening the base of contributors beyond workers.

Keywords: pension system financing, challenge of demography, challenge of the global economy.

Starzejąca się Polska. Czy można uniknąć scenariusza katastrofy?

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Scenariusz katastrofy wynikający z niedostatecznej liczby pracowników zdolnych utrzymać rosnącą liczbę emerytów dominuje publiczną debatę na temat problemów polskiego systemu emerytalnego w niezbyt odległej przyszłości generacji obecnie wchodzącej na rynek pracy. W artykule dyskutujemy ryzyko scenariusza katastrofy i warunki, w jakich możliwe jest jego uniknięcie. W tym celu analizujemy dwa stylizowane scenariusze: kontynuacji obecnego modelu solidarności międzypokoleniowej pracowników oraz scenariusz solidarności społecznej *at large*. Pokazujemy, że narracja „w przyszłości będzie zbyt mała ilość pracowników, żeby utrzymać zbyt wielu emerytów” jest błędna zarówno na poziomie dostępnych zasobów finansowych, jak i nadchodzących wyzwań gospodarczych w długim okresie. Polska, jak i wiele innych krajów, musi się zmierzyć z radykalną reformą systemu emerytalnego; reformą daleko wykraczającą poza problem wieku emerytalnego. Podstawowym wyzwaniem będzie większe różnicowanie wachlarza instrumentów finansowania emerytur, jak też poszerzenie poza pracowników bazy podmiotów finansujących emerytury.

Słowa kluczowe: system emerytalny, finansowanie, wyzwania demograficzne, wyzwania globalnej gospodarki.

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* **Grzegorz Jędrzejczak** – UW Professor, Ph.D., University of Warsaw, Faculty of Management.

Mailing address: University of Warsaw, Faculty of Management, Szturmowa 1/3, 02-678 Warsaw;
e-mail: gjedrzejczak@wz.uw.edu.pl.

1. Introduction¹

Poland is aging. Three phenomena are working into this direction: (1) one of the lowest fertility rates in the world, far from securing even simple reproduction of the population; (2) improving life expectancy, particularly of men, due to preventing non-communicable diseases; and (3) massive emigration of younger people, after joining the EU in 2004.

Aging is not exclusively a Polish problem; it is not even a problem of the developed countries only. Compared with the post-WWII baby boom period, fertility rates have declined in all EU countries. Currently and in the predictable future none of the EU member states will reach the level of 2.1 births per woman, which is needed for generational replacement of the population. The US managed to postpone the aging thanks to high fertility of immigrant women, while the fertility rate of non-immigrant women, particularly well educated, has been below the replacement threshold. The biggest developing country, China, due to the decades of the one child policy, within few decades will go through radical generational discontinuity and quite dramatic aging of the society.

Aging will affect the economy in a variety of ways, both on the supply and demand side: from shortages of labor, to demand for new products such as motorized wheelchairs and 'smart houses' (OECD 2002). The future generations of pensioners will create additional, age-specific demand for the medical care but also leisure services and education.

Aging is also expected to have a more subtle impact on the economy by strengthening the social capital. Growth of the wellbeing of the society is decreasingly dependent on the ability to produce mass products and increasingly depends on the ability to provide "emphatically deepened" services such as community welfare volunteering or taking care of sick and old. These are social abilities more common among older members of the society.

Aging will also generate costs, first and foremost related to financing pensions for an increasing number of elders living longer lives. This paper discusses financial consequences of increasing pension expenditures in the upcoming Polish reality of fewer workers and more pensioners when compared with the current situation.

2. Facts behind aging of the Polish society

Fertility. Even among meager fertility rates in most EU countries, Poland with its 1.3 births per woman is a negative outlier – second from the end in the EU and 212th of 224 countries globally. Expected (or rather hoped) slight increase in the fertility rate up to just below 1.5 births per woman within the next 30 years will still place Poland at the very bottom of the ranking among the EU member states and will be far from securing reproduction (The 2015 Aging Report).

Fertility with its multiple and interdependent reasons is very difficult to address with policy instruments even if policy interventions are comprehensive and massive in scale². Decreasing fertility results from: improved medical care of newborns and therefore no need for “excess children” for family reproduction; the state providing old age protection and therefore no need for having children to take care of old parents; better education of women and their increased participation in the labor market and delayed reproductive decisions. In the Polish case, there is an additional factor of “revolution of aspirations” of the post-transition generations comparing their standards of living with “the old EU” rather than with pre-transition standards of their parents. Children as “cost centers” often loose in competition with consumption.

Life expectancy. If compared with other EU member countries, Poles have relatively low life expectancy, particularly men; even if in the last 25 years progress has been made. It is projected that by the mid-21st century life expectancy in Poland will catch up to the levels slightly below the EU average, with an improvement mostly in life expectancy for men. As a result, while in 2008 life expectancy at 65 was 14 years of further life for men and 18 years of further life for women, the 2060 predicted life expectancy at 65 is additional 21 years for men and 24 years for women (The 2015 Ageing Report). While increased longevity is commendable, it will further strengthen the trend of ageing of the Polish population.

Migration. Post-transition emigration from Poland has been in excess of two million, mostly of young people, with decreasing hope of their return. Immigration to Poland, especially of younger people, could be a partial solution to the growing mismatch between low fertility and increasing longevity. However, Poland would have to become a more attractive place to migrate to, which currently is not the case. Until now, for a vast majority of migrants, Poland has been a temporary stopover before migrating to more affluent parts of the Western Europe. Dramatic changes in the geopolitical situation behind Polish eastern borders and less welcoming attitudes to immigrants in Western Europe may lead to an increase in the number of immigrants who plan to stay in Poland. Even if emigration from Poland is expected to taper off, net migration is a “wild card” in shaping Poland’s age structure in the future.

3. The Doomsday Scenario and its alternative

The Doomsday Scenario of too few workers unable to support too many pensioners dominates the public debate about travails of the Polish pension system in not so distant future of the generation currently entering the labor market.

The Doomsday Scenario is supposed to work as the following chain of events: (1) shrinking of the working-age group *will lead to* (2) shrinking

labor supply; *which will lead to* (3) slowing down of the economic growth; *which will lead to* (4) increasing burden of financing pensions by the shrinking number of workers; *which will lead to* (5) social conflict between the working (young) population and pensioners (old) over an increasing burden of financing pensions; *which will lead to* (5) growing deficit of the Pension Fund; *which will end up in* (6) the collapse of the Pension Fund (ZUS) and forced takeover of pension obligations by the state budget via public debt; *which will lead to* (7) significant worsening of the wellbeing of pensioners.

In the next chapter, we will discuss how real the risk of the Doomsday Scenario is and under what conditions it can be avoided. To that end, we will start with two simple stylized scenarios built on the numbers roughly reflecting the current situation (2015) and projected for year 2060.

Stylized Facts. According to latest EU prediction, by 2060 the population of Poland will shrink by 20 percent, of which: the number of children below 15 years of age will be lower by 40 percent, the number of people older than 65 years of age will be twice as big as today, and the number of people of the working age (15–65 years) will be smaller by 40 percent. Poland's old-age dependency ratio (ratio of people of 65 years of age or older relative to the people of working age of 15–65 years of age) will increase from 2 to 10 in 2014 to more than 3 to 10 in 2030, and almost 7 to 10 in 2060. As a result, Poland will move from one of the lowest old age dependency ratios in the EU at present to the highest one in 2060 (The 2015 Ageing Report, 2015)³.

In two discussed scenarios, two assumptions are made regarding: 1) labor market participation, and 2) labor productivity and GDP growth:

Assumption 1: labor market participation. We assume that the Labor Force Participation Rate (LFPR) will increase from the current level of 67% to 75% in 2060. Currently in Poland LFPR is low when compared with other countries; for example: Germany 77.5%, Czech Republic 72.9%, UK 77.4%, and Spain 75.3%. We assume that shrinking supply of labor will make it more attractive for the eligible but currently not working part of the society to enter the labor market.

Assumption 2: Labor productivity and GDP growth. Improvement of productivity is the only way to compensate for shrinking labor contribution to the economic growth.

Predicting labor productivity for a long-run perspective is a difficult task. Polish experience of the last 25 years has limited predictive power. During this period, Poland has had consistently relatively high growth rates of labor productivity between 3.1%, and 4.4% (with the exception of 2007–2009, when the rate was 1.9%, still impressive when compared with other EU countries). It consistently outperformed the rates in developed economies; these were, however, the years of picking low-hanging fruits – eliminating irrationalities and wastefulness of the previous system. This process came to the end and sustaining solid growth will require gains in productivity by

capital deepening, better use of innovations, and changes in the structure of the economy toward sectors with greater value added. On the one hand, these changes are more difficult to achieve as they will require structural changes at the level of the whole economy rather than individual enterprises. On the other hand, there is still a significant gap between labor productivity in Poland and in developed EU countries; for example, current labor productivity in Poland is less than half of the productivity in Germany and France, and 60 percent of the productivity in Spain.

For the discussed scenarios, we assume conservative, in our opinion, long-term labor productivity growth in Poland of 2% per annum. It is in line with EU projections (Long-Term Labour Productivity and GDP Projections for the EU25 Members, 2006).

Annual 2 percent productivity growth means that by 2060 GDP per worker (labor productivity) would increase 2.4 times and would result in 60% growth of GDP or 1.1% annually; and per capita slightly more than doubling of GDP, or 1.5% annually.

Assumption 3: Increase of wages. Both scenarios assume that average wages grow at the same rate as GDP. Therefore, wages (income of workers) are assumed to grow at a slower rate than productivity. Two arguments may be presented to support this assumption. The first is the historical experience of countries with rapid replacement of labor with technology, such as South Korea, where between 1990 and 2011 GDP tripled and real wages grew only by 50 percent. (McKinsey Global Institute, 2015).

The second argument is related to technological progress over the next 50 years. It is expected that we will have a productivity boom of a “golden dawn of the new economy” dominated by robots and artificial intelligence which will bring an unprecedented explosion in productivity of machine-enhanced labor (Brynjolfsson, McAfee, 2014) or – on the opposite side – there is an opinion that the world enters a phase of secular stagnation due to the number of structural “headwinds” and withering away productivity enhancing role of IT technologies (Gordon, 2012). However, in both cases there would be technological surplus of labor (though at a different equilibrium level) putting downward pressure on wages.

4. Scenarios

The proposed scenarios differ regarding the burden of pensions on wages (measured as the relation of total pensions to total wages). The scenarios are as follows:

- **Scenario A (Doomsday Scenario):** total pension expenditures stay at the same relative level to the total wages of 17 percent (i.e. the pension burden on wages in 2060 stays the same as today);
- **Scenario B:** both the average wage and the average pension grow at the same rate as GDP.

The results for the scenarios are presented in Table 1.

Year	2015	2060	
Projection			
Population (million):	38	30	
Children (0–14)	6	4	
Working age (15–64)	27	16	
of which working	18 (67% active)	12 (75% active)	
Pensioners	5	10	
Scenarios			
		A	B
GDP per worker (000PLN)	94	229	229
GDP (billions PLN)	1700	2750	2750
Average wage (000/month)	4	6.5	6.5
Average pension (000/month)	2.4	1.6	3.9
Wages Total (billions PLN)	864	936	936
Pensions Total (billions PLN)	144	159	468
Wages+Pensions	1008	1095	1404
Outcome Indicators (%)			
	Current	A	B
Pensions total/wages total	17	17	50
Pension/wage replacement ratio	60	25	60
Wages total/GDP	50	34	34
Pensions total/GDP	8	6	17
(Wages+pensions) total/GDP	58	40	51

Tab. 1. Scenarios A and B – possible results. Source: Eurostat, GUS data, own calculations.

5. Results

Under Scenario A, pensioners would be significantly worse off than today. It is the Doomsday Scenario – while the average wage would grow at the same rate as GDP by 60% in real terms, the average pension per pensioner in real terms would be 1/3 lower than today and the pension/wage replacement ratio would fall precipitously from 60% to 25%.

Under scenario B, both average wage and average pension would grow at the same rate as GDP by 60% in real terms. The pension/wage replacement ratio would stay at the same level as today.

6. Political economy of aging

Political economy is about solving distributional conflicts between vested interest groups. Under the current system of pension financing, a distributional conflict is a conflict between workers and pensioners (or young and old).

When a distributional conflict around pension financing is reduced to the conflict between workers and pensioners, neither scenario provides a workable solution. Scenario A is unacceptable to pensioners; scenario B

is unacceptable to workers. Scenario A would lead to pauperization of pensioners; scenario B would lead to a huge and unsustainable increase of the financial burden imposed on the working population from current 17 percent to 50 percent in 2060.

Social and political impossibility of both presented scenarios is not the outcome of lack of resources (GDP) to distribute but of continuing the current institutional arrangements of financing pensions exclusively from contributions of the working population.

The system of intergenerational solidarity of current and past employees was introduced by Bismarck's Prussia in the late 19th century. At that time, it was a workable solution as there were relatively many current workers and few former workers, people not able to work and – at the same time – deprived of family support. Today, comparing with Bismarck's Prussia, the situation is becoming radically different: 1) there are fewer current employees relative to former employees; 2) family obligations to take care of elders have become less obvious; 3) in the long term real incomes of workers are stagnating and, as a result, the ability of the working part of the population to support growing number of pensioners is diminishing, both in relative and absolute terms.

The full spectrum of vested interest built around financing pensions is in fact much broader, as it is a part of the conflict about distribution of the national income. It includes – in addition to employees (workers) and pensioners – capital owners, entrepreneurs, and public sector beneficiaries other than pensioners. In addition, in modern economies some – formally speaking – employees such as managers, inventors, artists or other cognitive elites are increasingly becoming separate vested interest groups. Members of different vested interest groups should not be understood as separate physical persons. The same person can wear two hats, for example, a pensioner via a pension fund is an owner of capital.

Our two stylized scenarios present two fundamentally different approaches to financing pensions in the aging society. Scenario A presents the case where support to pensioners continues the current model of intergenerational solidarity between current and past employees. In political economy terms, it is narrowed to the distributional conflict between employees and pensioners. Scenario B presents the case of solidarity between the society at large and its elders. In political economy terms, it is a part of distributional conflict around distribution of the national income (one can even say that current and former employees are “at the same side of the barricade” of the conflict).

Even quite moderate assumptions regarding labor participation and productivity growth show that enough GDP to generate a viable solution allows not only avoiding the Doomsday Scenario but also improving the wealth of pensioners despite their growing number and shrinking working-age population. The narration that “there will be too few workers to support too many pensioners” is just wrong.

As the analyzed scenarios show, continuation of the current system would lead to a significant change of the GDP distribution – 18 p.p. of the GDP previously distributed to worker and pensioners would be “free to capture” by other vested interest groups by 2060. Five distributional outcomes, with different gains for participating vested interest groups, would be possible:

- 1) The pension to wage replacement ratio is brought back to the current level of 60 percent.
- 2) The surplus is captured for improvement of the public services benefiting elders such as specific public health services and/or long-term care for elders.
- 3) The surplus is captured for improvement of the public services benefiting society at large, including elders, such as general health, education or protection of natural environment.
- 4) The surplus is captured by so called cognitive elites, i.e. the most creative knowledge workers, managers, entrepreneurs, inventors, etc.
- 5) The surplus is captured by corporate and financial capital.

Different outcomes would bring different short and long-term benefits for the aging society. The first outcome would obviously provide an immediate solution to the pensioners’ wellbeing. The second and to a lesser extent the third outcome would benefit the ageing society in the long term by providing better public services. The remaining outcomes might or might not be beneficial for the aging society. On the optimistic side, captured resources might be reinvested to finance innovative solutions strengthening the economy, but – on the negative side – captured resources might be used for conspicuous consumption of imported products and/or transferred abroad with no productive benefits for the Polish economy. Unfortunately, the capture of the surplus by corporate and financial capital and its transfer abroad is quite likely due to the poor quality of the Polish taxation system and even worse tax administration.

7. Toward a new model of financing pensions

In policy terms, we are facing a problem of introducing new institutions which could effectively manage the distributional conflicts of the modern economy.

Over the last 25 years, the discussion about financing pensions has gone through quite dramatic changes. Entering the 90s, Poland not only inherited quite generous pensions but the new government was determined to protect pensioners from the worsening of their standard of living during the transformation process. As regards the percentage of GDP spent on pensions, Poland has been at par with such welfare states as Sweden, Denmark or Finland (Dobrowolski, 2015). This political commitment regarding pensions was particularly visible when compared with the situation in the post-Soviet societies where impoverishment of pensioners was quite dramatic.

A comprehensive and radical reform of the pension system introduced in 1998 was motivated by the growing inadequacy of the PAYG system and, at the same time, the new system was supposed to create so much needed mechanism for mobilization of domestic savings of which pensions are a large part in mature market economies. The diversified base of the new system included: 1) defined contribution PAYG component with personal accounts, 2) obligatory capitalized pension funds (OFE) invested in the capital market products and managed privately by specialized managers, and 3) voluntary, capitalized pension funds with tax incentives to save.

Without going deeper into the still raging debate of the merits and demerits of the '98 pension reform, it is clear that this attempt ended up in failure. The reform turned to be “politically naïve”; at the moment of the budgetary pressure the resources accumulated in the second pillar were confiscated and attributed to the first pillar, incentives to invest in the second pillar were questioned, and the third pillar never took off the ground. Effectively, the pension system is in the process of being rolled back to the PAYG system. Personal accounts which have been introduced to the PAYG component as vehicles for accumulating capital for the future pensions of the account owners, in fact, turned to be convenient “safety valves” protecting the Pension Fund against overspending. Their capital accumulation role is at best very questionable.

The current system is continued because of its administrative convenience. It is quite easy to collect taxes (pension contributions are in fact a quasi-tax) from employees and employers. It is much more difficult to collect taxes from the very mobile cognitive elites, or even more difficult from owners of enterprises and financial investors who have at their disposal advisors specialized in avoiding taxes, or can – as the “nuclear option” – move their business to other, more tax friendly countries.

The failure of the '98 pension reform does not mean that Poland can escape a radical reform of the pension system; the reform which would meet the objectives formulated during the reform of 1998. There is no “if” question but “how” question. A pension system meeting the needs of the aging society has to move away from the undiversified and increasingly inefficient system of inter-generational solidarity of PAYG to a system built on broader and more diversified base of financing vehicles and contributors.

A reformed system has to meet three conditions: (a) be sustainable in the long term, (b) cannot stifle economic activities, particularly in the high value-added innovative sectors, and (c) be able to effectively collect contributions. It is a formidable challenge, and its success depends on institutional capacity to collect pension contributions from a broader base of stakeholders.

First and foremost, the range of contributors has to be expanded by including capital owners defined broadly as owners of real, financial, but also human capital. This has to be done in parallel with rationalizing the costs and closing the loopholes in the public pension system.

This problem is not new; it is a variation of the distributional *Ricardian* conflict between labor and capital in the traditional economy. However, while in the traditional economy at the core was distribution of surplus within firms, with workers and owners fighting over their share, in the modern economy it is only a part – and of decreasing importance – of the problem. In the modern economy, there are significant and stubborn differences in the surplus between firms, due to a significant difference in productivity of individual firms, even in the same sector. (Hausman, 2015).

Economics has traditionally assumed that all stakeholders in a firm – its owners, managers, and workers – are paid their opportunity cost. If markets are in perfect competition, once the opportunity cost of all inputs has been paid, there is nothing left to distribute. Markets have tendencies to equalize the benefits of stakeholders via allocation of capital and/or labor to sectors with temporary over average surplus.

Today the specific combination of inputs is more important than the contribution of individual inputs. An outcome of modern production requires many complementary inputs, not only raw materials, machines and generic labor, but also many specialized skills, infrastructure, and rules. Shortage of any of these components has a negative impact on productivity. In other words, today, productivity of the economy is decided to a much lesser extent by people within firms than by networks of firms in their social environment.

In an increasing number of new areas of activity, surplus accrues to those who have an idea how to put the business together. It is of growing importance in building and keeping the competitive advantage of individual firms and national economies in the globalized system. The maximum surplus goes to inputs of specialized knowledge, difficult to replicate. Generic labor which can be easily “globally commoditized” can capture only the residual, which is increasingly smaller than gain in productivity.

The historical trend of decreasing share of labor in the national income makes the model of pension financing of an increasing number of pensioners unsustainable, based on a decreasing number of workers receiving diminishing share of the national income.

There are very few positive examples of successful taxing of the most mobile stakeholders, such as top managers, financial capital, or members of the cognitive elite in general. So called Tobin Tax is a good example of the difficulty in effectively taxing financial transactions. After forty years, it is still a subject of academic discussion, with no chance of being introduced, even in the dramatically changed realities after the financial crisis of 2007. (Tobin, 1978). Piketty’s proposal of taxing wealth globally has an equally small chance of implementation (Piketty, 2014). Case-by-case negotiations with major contributors would be more promising. This would require, however, hiring highly skilled and therefore highly paid civil servants, which is proverbially difficult.

Voluntary pension savings in commercially established pension funds and supported by fiscal incentives should be promoted as an important component of a new pension system, even if – given limited personal wealth and high preference for current consumption – they would be rather a small part of pension financing (Kawalec, 2014).

Germany provides perhaps the best model of addressing distributional conflicts. The German system is based on the social contract between the state, business and labor, and is implemented by formal and informal institutions ranging from a parliamentary grand coalition to *Mitbestimmung* at a firm level (McGaughey, 2015). For example, in the follow-up of the 2007 crisis, it protected the practical (tacit) knowledge by maintaining employment in industry despite shrinking production.

Capturing part of the benefits of public investment in the infrastructure supporting economic growth is considered as an option to finance public expenditure, including pensions. It is argued that the state plays a significant role in funding new technologies via R&D programs but usually acquires no stake in the commercialization of such successful technologies, leaving the profits to private investors. It does not have to be the case; governments could fund themselves by socializing the gains from innovations (Mazutto, 2014; Rodik, 2014). Although this is not an easy path, full of bureaucratic traps and politicization of decision making, positive examples exist. Singapore has a well-funded government despite low taxes because its successful policies caused the land and real estate it owns to appreciate significantly generating a huge revenue stream.

8. Conclusions

The main conclusion of this paper is that the problem of financing future pensions of the aging society is primarily a problem of distribution, and only secondarily a problem of available resources to distribute. There is no need for “class struggle” over transferring wealth from rich to poor. The challenge is to establish and maintain institutions which would effectively work with the diversity of stakeholders contributing to public programs, including pensions.

It does not mean, however, that there is no need to mobilize the society to produce more. With growing competitiveness of the globalized economy, continuation of the current model of Poland’s competitive advantage based on inexpensive labor would likely result in the secular stagnation of the economic growth and increased social conflicts around distribution of the stagnant GDP. Productivity growth rates higher than assumed in the presented scenarios would make the pie to share bigger and, with well-functioning institutions, would make everybody better off.

Over coming decades, sustainable financing of public expenditures of the aging society, particularly pensions, will be one of the key policy chal-

lenges. On the one hand, sources of financing that are more sustainable and broader than intergenerational workers' contribution have to be secured to prevent increased risk of poverty among the elderly members of the society. On the other hand, as public expenditures related to aging of the society comprise a significant and growing share of total public spending, containing these expenditures is a necessary part of fiscal consolidation (IMF 2011).

The perceived risk of the Doomsday Scenario has already led policy-makers to introduce measures which were supposed to alleviate its negative fiscal consequences (or at least it was justified this way). These included, in addition to the capture of resources from the second pillar described above, delaying the pension age from 65 to 67 for men and from 60 to 67 for women. These changes produced some immediate relieve to the state budget, but are far from sufficient in the long term. The budgetary savings due to the worsening of pensions relative to wages (for all) and absolute (for some) would have to give up under the political pressure from the pensioners. In a few decades from now, the fiscal system will undergo the real "stress test" of shortage of finance and social conflicts resulting from it (Cowen, 2013).

Endnotes

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- ² France may be a good example. Despite very generous and comprehensive support to child bearing, migration has played an important role – about 40% of newborns in France between 2006 and 2008 had one foreign-born grandparent, a group which constitutes less than 10 percent of the total French population (Breuil-Genier, 2011).
- ³ This watershed change may happen even faster if the massive scale of emigration continues. In this case, due to the substantial emigration, Poland may become the oldest EU society as quickly as in 15 years from now (Duszczyk, 2015).

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