Capturing the impact of demographic changes on public spending – the long-term budget framework

By

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In the last decade, we have witnessed a growing interest in developing budgetary projections that extend time horizons of commonly applied medium-term (that is less than ten years) forecasts. This tendency results from widely observed demographic and social trends, which influence on public finances is obvious and significant. While this impact may not be very clear yet, analytical studies by OECD, the European Commission, International Labour Organisation, national authorities and scientific institutions, show that state budgets in developed economies are to face considerable pressure when the greying process gathers its momentum in the second and third decade of the century. Until then number of public policies and programmes have to be adjusted to new demographic reality, with particular emphasis on the specific solutions designed to the transition period when the baby-boomer generation turns the retiring age and so called dependency ratio, defined as the ratio of non-working to employed persons, is going to reach its heights. There is therefore a necessity to review age-sensitive policies like pension systems, health care and labour market regulations in long-term perspective. The long-term budget forecasts provide an important tool to identify and expose public finance dynamics in connection with demographic changes. This paper is aimed to examine briefly demographic trends and its various effects on budget policies and present the methodology and key issues associated with long-term budget frameworks. It is also set to discuss how this long-term projections may contribute to choose the suitable policy option. Last section discusses Polish demographic profile, public finances position and its possible developments in forthcoming decades and steps undertaken to overcome demographic challenge.
1. Economic dimension of ageing

Two main issues can be pointed out as the causes and elements of great demographic turnaround known as ageing of societies. First one is the low or relatively low - in comparison with previous decades - fertility rate observed in the industrial countries. Reduced fertility imply significant changes in the age distributions among modern societies. While the proportion of young age groups declines, the older age groups will increase substantially, either in absolute terms or as the share of the population, as the baby-boomers, born between middle 1940s and 1970s, move through the life cycle. The age group which would grow the most by 2030 and beyond is that composed of people aged 65 and older. The economic significance of such shifts is the increase of dependency ratio, which is going to double in most countries by 2030, even taking account of the fact that the number of young dependants (those who have not entered the labour market yet) will decline. Second factor that stimulates ageing process is increase of longevity. As life expectancy has risen and is expected to rise further, the elderly dependence ratio rise also, because average dependency period extends. Most developed countries are now entering the demographic transition period, when the age structure is going to change very rapidly before approaching new steady state, characterized by relatively higher proportion of older population. During the transition the age, structure of workforce and the dependency ratio will change substantially in quite short time and results of these changes will depend on adaptability of economies and societies and also well designed public policies, especially in the field of entitlement systems and public health.

Projected consequences of demographic changes are very comprehensive and – to some extent – very uncertain. Most studies and discussions focus on effects, that the ageing may have on labour markets. As many countries may be faced with considerable expenditure needs to cover pension entitlements, there’s a growing interest on how to project these schemes and how increasing social security burdens may affect labour supply and demand. The predicted more rapid growth of employers aged 40 and more will result in generally older workforce, what raise a number of questions about its future mobility and productivity. Reduced population growth may have however some positive implications on labour markets, leading to lower unemployment and higher real wages which shall offset increase of social security contribution rates.

Another important issues are ageing implications on private consumption and saving, and also for national saving and interest rates. Change in the age distribution is
believed to affect the structure of private consumption, since age is an important determinant of spending preferences. In general, the categories that would decline the most in an ageing society are education, transportation, recreation and durables, including housing, while food, services and especially medical care demand would increase.\(^1\) As the effects of demographic changes on private spending are considered, the results of research are somewhat ambiguous and vary from one country to another depending on many factors. A “life-cycle” saving pattern assumes that most of private saving occurs in pre-retirement years in order to finance consumption in retirement. However, some researches show that the elderly continue to save in order to leave higher bequests for their children, what seems to evidence in favour of contradictory “dynasty model” saving pattern.\(^2\)

2. Long-term budget framework – key issues and methodology

The long-term budgetary frameworks are set to identify and expose the dynamics of public finances resulting from above mentioned demographic tendencies. They are designed to forecast trends and examine possible scenarios, not to create or execute political and economic priorities, like annual and medium-term budgets or financial frameworks. They may however serve as a base to undertake decisions and project policies. The main function of long-term budget forecasts is to act as an early-warning system for politicians and public servants. Otherwise, future expenditure needs may go unnoticed until it is too late to set new policies or modify current programmes. Early announcements and long period of phasing-in of the reforms allow people to adjust their behaviour, especially consumption and saving patterns, to new pension or health care schemes. Long-term budget frameworks are much less common than medium-term ones, which are employed in most developed countries. The forecasts are usually presented in a very aggregated format and their accuracy is also limited. Their greatest value however, is forcing policy makers to think about the future.

Long-term forecasts are generally formulated on the basis of continuation of existing policies as the baseline scenario. Alternative scenarios are also presented incorporating the impact of specific policy changes being proposed or under consideration. Some figures and data may also be presented applying different scenarios of productivity growth and long-term


interest rates. By exposing possible developments of certain expenditure items and very general economic figures, long-term budget frameworks show the scope of political choices.

In making long-term forecasts, it is essential to divide government expenditures into expenditures directly sensitive to changes in demography and expenditures not directly sensitive to changes in demography. The distinct category is the interest expenditures. Some expenditures can be easily identified as demographically sensitive, as eligibility for the respective programmes is determined by age, pensions being a typical example. Identifying other parts requires more careful study, as eligibility for some programmes is not determined by age but the recipients of the programmes come predominantly from certain age groups. Public spending items that can be characterised as significantly demographically sensitive include:

- day-care institutions
- primary schools
- secondary schools
- universities
- financial assistance to students
- lifelong learning
- housing assistance
- unemployment insurance benefits
- primary health care
- hospitals
- sickness benefits
- parenthood benefits
- disability pensions
- residential nursing homes
- home help
- old-age pensions
- early retirement benefit
- civil service pensions.\(^3\)

In forecasting expenditures for these demographically sensitive programmes, a three-step process is generally followed. First, current expenditure for each programme is

\(^3\) A longer term orientation to the budget process, 26\(^{th}\) Session of the Public Management Committee, Paris 30-31 October 2002.
divided across the recipients of that programme by age. Next, a per capita cost is estimated for each programme by age. Second, the estimated per capita costs of each programme are estimated to rise by a certain percentage. The percentages used for this purpose vary widely. They can be policy-oriented in the sense that expenditures will rise by a certain set percentage point annually, usually lower than the historical trend. They can also be said to increase by the same rate as the forecasted growth rate of the economy as a whole. In other cases, several different scenarios for expenditure growth can be presented. Third, the country's future demographic profile is projected with the expenditures for each programme changing in line with the changes in each age group's population and estimated take-up rate.

The take-up rate refers to what percentage of the population in each age group is a recipient of a specific programme. This is generally a function of labour force participation rates. Changes in labour force participation rates will therefore affect the take-up rates. The key issues impacting the take-up rate are as follows:

- changes in unemployment rates;
- increased labour force participation of women;
- changing patterns of female participation associated with changes in the age of having a first child;
- decreased labour force participation at older ages, particularly of men;
- less time in the workforce reflecting longer periods spent in education;
- a trend to increasing part time work as a proportion of all work.

All these factors have to be taken into account in determining whether the take-up rate for a given programme is likely to change in the future.

Programmes that are not identified as being directly sensitive to changes in demography are said to increase by a set percentage. Individual programmes are not estimated separately: the set percentage is applied on an aggregate level. These percentages are the same as applied to the per capita costs of the demographically sensitive programmes outlined above.

Following early difficulties, a number of countries are employing long-term budget forecasts and more are likely to do so in the near future. In the European Union, the Stability and Growth Pact requirements have been important factor supporting development of such predictions. In the annual reports on budgetary and economic strategy, called Convergence or Stability Programs (for euro-zone countries) member countries present long-term analysis of public finance based on demographic projections covering the first half of the 21st Century.
These forecasts are, however, limited to capturing the fiscal impact of changing demography, i.e. the ageing population. Other long-term issues, such as the adequacy of infrastructure provision, have not been incorporated into these forecasts.

3. Policy options to overcome long-term fiscal pressures

The first important step for any government is to improve overall budget position – primary balance and public debt, to achieve a better starting point when demographic pressure builds up. However, long-term budgetary forecasts show that to keep debt ratios constant and leave pensions and health expenditure at the same level, would require savings in other programmes that most countries just cannot afford. For example, for Japan it would be equivalent to cutting out twice all spending on general public services and defence; for Germany – all public services and around a third of defence spending. Significant policy changes are therefore essential in key demographic sensitive sectors.

Since the pressures on budget, especially on public pension systems, originate from increased dependency ratio, one possible solution is to lower this rate by stimulating workforce growth. The main options are to raise the participation rate, increase immigration and increase retirement age.

Regarding participation rates, two most notable features are differences between rates for men and women and drop in participation rates well before reaching the retirement age. Policies aimed at increasing participation ratio may be difficult to design, but at least policies that discourage participation could be avoided, especially those that discourage part-time working arrangements or “early retirement” policies.

Increasing immigration could to some extent offset projected fall in the working age population in developed countries. Policies tailored towards attracting immigrants in reference to their capacity to contribute the economy, taking into account the age and skill level, are for some time in place in countries with traditional workforce deficit, as Australia or Canada. But the relation between immigration and economic performance is complex and number of practical limits exists, namely the extent to which immigrants can be absorbed and adopted in different countries and their age and family structure. Policies supporting immigration may also be negatively perceived by less developed countries as encouraging “brain drain”.
Increases in retirement age have already been scheduled or placed in by most countries that are expected to face demographic pressures, but it seems there may be still more scope for lengthening working lifetime, at least in some countries. When most pension schemes were emerged, they were generally designed to cover relatively short period between retirement and death. The life expectancy at 60 has increased by four to six years for men, and seven to nine years for women during the course of 20th Century and World Bank projections imply further increases of four to five years by 2030. At the same time age of entry into the workforce has become progressively later, as the education period have lengthened. Finally, the shift of work activities from physical to more sedentary jobs brought about by technological development and general shift towards services, suggests that job activity has become less physically demanding.

Most direct way of struggling fiscal pressures arising from ageing is however to redesign pension programmes by changing some of the parameters. The combination of raising contribution rates, lowering payments and raising retirement age does not seem to be satisfactory solution. Many governments instituted sophisticated pension schemes reforms which generally initiate shift from pay-as you-go to advance funding systems. Under the latter scheme, those already retired receive pensions equal to the contributions they have paid during employment and interest revenues earned by accumulated pension fund. If the scheme is actuarially fair, the real rate of return is equal to the market real interest rate and there is no wealth redistribution between generations.

As the public health expenditures and long-term care costs are considered, there’s much less consensus of the possible policy options, as some uncertainties arises regarding the impact of longer life expectancy and technological progress on these spending items. First is weather the longer life leads to a longer periods of old age illness or merely to a postponement of the needs for health care, bearing in mind that some diseases are genetically coded to appear more frequently in old age. Second is the consequence of new discoveries in medicine and pharmacology, which can either produce cost savings or stimulate demand for more advanced and expensive treatments.4

4. Economic and social challenges resulting from demographic trends in Poland

The demographic prognosis by Polish Central Statistical Office shows considerable changes in the amount and structure of population in forthcoming decades. The overall population is going to decrease and average age is supposed to increase significantly from 36,7 to 45,5 in 2030. Changes in age structure are supposed to have serious consequences and cause intensification of some social problems. Predicted decrease of youth cohorts will reduce currently very high demand on educational and pre-educational services. This might lead to lower request for teaching and academic staff and higher competition on the educational market. The important issue for Polish policy-makers from that point of view is to stimulate the lifelong learning.

The labour market is going to start experience rapid changes by second decade of the century. The workforce supply (age group 18-64) is to reach its heights around 2010 at around 26 million and then will start to decrease to 22 million in 2030. Between 2020 and 2030 the share of so-called immobile workforce (age group 45-64) is going to rise what should spur politics aimed to increase participation in this group. The number of elderly dependants is predicted to climb strongly from around 5 million at the beginning of second decade to almost 9 million in 2030. That will cause fast increase of elderly dependence ratio, which is going to double between 2010 and 2030.

The main long-term forecasts of public finances of Poland is provided by the Convergence Program. However, the section devoted to long-term situation of public finances in this document is limited only to pension system expenditure. The simulation of development of pension system is presented using three scenarios – basic, optimistic and pessimistic. According to the conclusions of the forecasts there is no serious threat for financing the expenditures. However the number of recipients of pensions is going to rise from 2014, the overall system balance is supposed to improve after 2020. That is because by that time most of the pensioners will have substantial part of their services financed from the advance funding scheme.

In the future actualizations of Convergence Program, Poland is going to complete long-term forecasts with predictions of development of health and long-term care, education and labour market expenditure prepared in cooperation with Eurostat, using methodology accepted by European Commission. However, even taking into account this additional data,
the long-term forecasts within Convergence Program, does not seem to provide analysis sufficient to support political decisions in order to face demographic challenges. It is therefore highly recommended to develop independent and comprehensive long-term budget framework in next years.