Bulgarian labour market in the context of aging population: Part 1

Trends, outlook and economic impact

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Agenda





Introduction

This presentation is the first in a string of three presentations dealing with Bulgarian labour market in the context of rapidly shrinking and aging population.

Demographic transformations can occur fast with profound effect on the functioning of the economy^{*}. Bulgaria is no exception, and to see why we should need to look no further than to the total population number, which shrunk by more than one-fifth in the past three decades, thereby spurring concerns about country's long-term economic outlook and triggering a debate on the possible policy responses.

The purpose of this presentation is to look at demographic trends and the factors shaping these trends in Bulgaria. International comparisons are used to put Bulgaria's demographic developments into the broader geographical context of the CEE emerging market region and the trends prevailing in the larger EU28 region.

The concepts of demographic dividends and demographic burdens^{*} are introduced to measure the impact of aging population on the country's economic growth and public finances. On the basis of that analysis policies has been highlighted that can help to deal with the increased financial deficit in the pension system.

*See Lee (2003).

*The term "demographic dividend" was coined by Bloom et.al. (2003) in a paper based on earlier work by Bloom and Williamson (1998) on the "demographic gift".





- 3 Demographic dividends and demographic burdens
- 4 Getting old before getting rich
- 5 Demographic outlook
- 6 Implications for the economy



Population number is a natural starting point. It peaked in 1985 just before the start of the transition. If NSI's projection materializes, in 2020 (when the next census is due) it would be 22% down compared to 1985 (2mln less), or close to where the population number was after WWII





International comparisons reveal that Bulgaria has one of the most rapidly shrinking population in CEE11. Bulgaria lost 20% of its 1989's population (from 1989 to 2017). Latvia (28% down) and Lithuania (24%) fared even worse

Population change from 1989 to 2017 in CEE countries (change in thousands)

Population change from 1989 to 2017 in CEE countries (change in %)





On a more technical level changes in the population number reflect two main things

- 1) The so called natural population increase, which is the mathematical difference between the number of births and the number of deaths and;
- 2) the net migration, which is the balance between out-migration (the act of leaving a resident country or place of residence with the intent to settle elsewhere) and in-migration (the international movement of people into a destination country of which they are not natives or where they do not possess citizenship in order to settle or reside there).

Out of the 1.9 mn population decline since 1985, roughly half (1 mn) is due to the negative natural population increase. The remaining 0.9 mn reflects the negative net migration

Bulgaria: Natural population increase and net migration by census year (yearly, persons in thousands)

Bulgaria: Population change - natural population increase and net migration (yearly, in % of total population)



Source: NSI, UniCredit Bulbank

8

METHODOLOGICAL NOTE: Net migration is simple to calculate. We take the change in the total population number from census data, add the births number and subtract the deaths number for the period under review. The residual, calculated for each respective year, is the net migration for that particular year.



Before 1990, birth rate exceeded mortality rate, resulting in a positive natural population increase. Trend reversal in early 1990s was above all driven by the drop in the crude birth rate



Source: NSI, UniCredit Bulbank

Among other things birth rate deterioration in the 1990s and afterwards reflects the mass departure of ethnic Turkish population in the mid of 1980's.

9

Before the start of transition, birth rate in Bulgaria was more or less in line with the average one in EU28. At the peak of the past economic cycle (2009 -10), the crude birth rate in Bulgaria rose markedly, coming once again closer to the EU's average mark





Deterioration of crude birth rate is a common trend in CEE. Empirical data reconfirm the strong positive link between incomes and birth rates. The most successful countries in terms of income convergence in CEE are also those with the highest birth rates





Total fertility rate (the average number of children a woman gives birth in her lifetime) has dropped in all EU28 well below the 2.1 mark, which is needed to keep population number constant. In Bulgaria, fertility rate has stabilized above the 1.5% mark over the past decade

Bulgaria: Fertility rate Fertility rate in some EU countries (number of children per woman) (number of children per woman) 2.5 4.0 1960 2017 3.5 2.0 3.0 2.5 1.5 2.0 1.5 1.0 1.0 0.5 0.5 0.0 N Switzerland Bulgaria Belgium Czechia Denmark ltaly nbourg Poland Austria Slovakia Hungary Slovenia _ithuania Romania Ireland Greece Portugal Finland Estonia Netherlands 0.0 996 969 975 78 066 993 996 9999 2002 005 960 963 984 987 2008 72 981 2011 2014 ō ō 00

Source: Eurostat

12 *The mass departure of ethnic Turkish population in mid 1980's, which is estimated to have reached around half million people, is one of the factors which contributed to the deterioration of the fertility rate during the 1990s, because population of the ethnic Turkish community tend to have more children



Reduced state support for education after the crisis in 1997 – 98 in Bulgaria, made access to good quality education more difficult. This, in turn, became one of the factors negatively affecting birth rates





But there are some positive developments, such as the rising crude marriage rate which in 2017 reached its highest level in a decade. Apart from Slovenia, crude marriage rate in Bulgaria is the lowest in CEE, international comparisons for 2017 indicate



Source: Eurostat

14 Note: Crude marriage rate: the ratio of the number of marriages during the year to the average population in that year.



Different socio and economic factors were behind the decreasing fertility rates

Childcare costs have increased in the past 30Ys. To be successful children need to be supported by their parents. In todays world parents support doesn't end with providing good quality education. As wages of those who enter the labour market are lower in relative terms today than 30Ys ago, young people need more time to become financially independent from their parents. In some countries, the burden of student loans (in USA and UK) has increased, pushing young people to postpone the time when they get married and raise children. Reduced state support for childcare after the crisis in 1997 – 98 in Bulgaria, made access to kindergartens and good quality education more difficult. High out-migration also contributed to this negative outcome, because those who leave the country predominately come from the younger cohorts of the population. Above all, people today want to consume more. To free room for more travel expenses or better housing, for example, people cut or postpone other expenses, including childcare expenses. All these factors have reduced fertility rate.

In many ways, falling fertility rates are part of a success story in Africa and Asia, as they reflect such things, as better access to contraceptives or presence of more women in education and work.

Fertility rates remain low even in countries where governments heavily subsidize childbearing. One reasons for this, according to a research done in Germany, is that fertility rates depend not just on the total cost of raising children, but also on the distribution of these costs between mothers and fathers. If the distribution of childcare is lopsided in the sense that one parent would have to do most of the work, this parent might object to the plan of having a child, so the couple disagrees. As a consequence, the fertility rate may remain low even if having children is heavily subsidized by the state. In the low-fertility countries in Europe, men contribute little to the burden of childcare, and hence women are stuck doing most of the work. Where women do most of the childcare work, they are also likely to veto having another child. In contrast, in the countries with high fertility rates men do more childcare work, and agreement and disagreement with having more children is balanced between the sexes.



In Bulgaria, mortality rate has grown markedly in the second half of the XX century, before stabilizing in the beginning of the XXI century. This mostly reflects rapidly aging population. But there were other factors at play, including some country specific ones^{*}



Source: Eurostat

16 *The mass departure of ethnic Turkish population in mid 1980's, which is estimated to have reached around half million people, is one of the factors which contributed to the deterioration of the mortality rate during the 1990s, because population of the ethnic Turkish community tend to be younger



Unfortunately, Bulgaria compares unfavorably with the rest of CEE, when it comes to the reported crude mortality rate, with the negative trend exacerbating after 2000





The main reason behind high mortality rate is the deteriorating age structure of population, where the share of elderly cohorts from total population has increased





High relative share of people with unhealthy habits is another factor contributing to the elevated mortality rate in Bulgaria





Large incidence of deaths due to noncommunicable diseases (NCDs) among people aged below 70 years, reconfirm the large share of people with an unhealthy lifestyle in Bulgaria



Source: World Health Organization, Global Health Observatory

*Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. NCDs disproportionately affect people in low- and middle-income countries where more than three quarters of global NCD deaths – 32million – occur.

Insufficient public sector spending on health care in Bulgaria (relative to those in the rest of EU28) has also contributed to higher mortality rates



21 Source: Eurostat, UniCredit Bulbank

Key conclusions from population numbers evolution section

Bulgaria has one of the most rapidly shrinking and aging population in EU28. This reflects a combination of low fertility rates, very high mortality rate and high out-migration. The mass departure of ethnic Turkish population in the mid 1980's is another relevant country specific factor.

On a deeper level, shrinking population reflects failure to properly navigate the early stage of transition from centrally planed to a market based economy (slow and inconsistent implementation of reforms in the period 1989 to the crisis in 1997/8, as the cliché goes). This has resulted in a very high out-migration (the third most significant in CEE) in combination with deterioration of both birth and mortality rates.

The low fertility rate in Bulgaria is driven by a large number of socio and economic factors: raising childcare costs; more difficult access to good quality education; decreasing relative wages of those who enter the labour market for the first time; the drive toward more consumption; reduced state support for childcare in the decade following the 1997-98 crisis; lopsided distribution of childcare costs between the sexes.

High mortality rate, in Bulgaria, above all reflects deteriorating age structure of the population. In fact, most developing countries have very low death rates because their age structure is dominated by a younger population. Conversely, the most developed countries have higher death rates, resulting from a rapidly aging population. Apart from aging population, high mortality rate in Bulgaria reflects unhealthy life style, such as large share of people using alcoholic beverages, tobacco products and unhealthy foods, which increases the risk of cardiovascular diseases, cancer, diabetes and other diseases. Reduced public spending on health care also have contributed to the deterioration in mortality rates, especially after the 1997/98 crisis, when reallocation of resources through the budget was cut significantly down.



Population numbers evolution

3 Demographic dividends and demographic burdens

- 4 Getting old before getting rich
- 5 Demographic outlook
- Implications for the economy



The first demographic dividend: a growing labour force and lower dependency ratio

As low income countries develop, they have the opportunity to reap what is termed the "First demographic dividend". The term "demographic dividend" was coined by Bloom et al. (2003) in a paper based on earlier work by Bloom and Williamson (1998) on the demographic gift.

As incomes rise, life expectancy improves and birth rate tends to fall. In the early stages of economic development, this results in the working-age population growth faster than the number of young and old people (i.e. the share of working age population from total population increases which means that more people with jobs are supporting a decreasing number of pensioners and young people). This helps GDP growth and per capita GDP growth to increase at a faster pace.

In addition, labor force participation among women tends to increase as the birth rates decline, which further boost growth and employment.

As increased life expectancy helps people to remain productive for longer, the investments to increase knowledge and to upgrade available skills are stimulated, thus likewise boosting productivity (and thus GDP growth and employment).



Increases in savings and spending on human capital in response to demographic change are referred to as the "second demographic dividend".

As improvements in the standard of living and healthcare gradually translate into rising life expectancy, individuals, firms and governments start to save more in anticipation of the need to finance future retirement. A higher savings rate enables an economy to sustain higher investment rates without exposure to the debilitating risks associated with high and persistent CA deficits.

Higher level of investments lead to increases in the stock of physical capital per worker, which in turn, boosts labour productivity and increases the speed of income convergence with the incomes seen in advanced economies.

Lower fertility rates, at the same time, enable both parents and the state to commit more resources to each student. Thus, decline in the number of children leads to an increase in the quality of education. This boosts human capital and in turn contributes to the further increase in the productivity.

Demographic burden: Demographic dividends reversed

As economies develop, demographic dividends gradually turn into demographic burden. This point is eventually reached because as life expectancy continues to rise, while, at the same time, birth rate continues to fall, a country's population will age.

Fewer workers will enter the labour force, while more workers will enter retirement. In response, the ratio of working age population to total population will start to decrease again. This means that decreasing number of workers will have to support an increasing number of pensioners.

A rise in accumulated pension obligations will make it necessary to increase taxation and public debt in order to finance higher pension associated spending (not only pension benefits but also higher social and health care costs associated with aging), which, in turn, will become a drag for economic growth.

In addition, as the age of the median worker increases, the workers are less motivated to invest to boost their knowledge and skills, since the time they can have to benefit from these newly acquired skills shortens. In response, the pace of human capital accumulation can decrease, with negative implications for productivity growth.



First demographic dividend was small: The share of working age population rose only marginally (from 60% in 1995 to 63% in 2010) and for a short period of time (15Ys). The demographic burden associated with the aging population seems to have started to materialize around 2010





Small first demographic dividend is further signaled by the limited improvement in the life expectancy^{*} (from 70Ys in 1998 to 75Ys in 2013) which spans for just 15Ys. Life expectancy improvement in EU28 was larger, suggesting also larger first demographic dividend



Source: World bank, Eurostat, UniCredit Bulbank

²⁸ *Life expectancy at birth indicates the average expected duration of a life of a newborn under the hypothesis for a constant intensity of the age specific mortality observed for the respective year (the life of the newborn is subjected to the current mortality conditions throughout the rest of his or her life).

First demographic dividend in Bulgaria was smaller than in the most of the CEE countries, as Bulgaria's life expectancy posted a less pronounced improvement than in most of CEE



Median age raises in all countries indicates demographic burden resulting from the decelerating pace of human capital accumulation, as older workers are less motivated to invest more to increase their knowledge and skills, since the time they have to benefit from these shortens



It seems that Bulgaria reaped a small second demographic dividend as well, as the period of increased national savings rate was rather short, starting only around a decade ago





Key conclusions from Demographic dividends and burdens section

First demographic dividend was small in Bulgaria. This is indicated not only by the small increase in the share of working age population (from total population), but also by the equally small increase in the life expectancy. Empirical data suggests that Bulgarian economy reaped the first demographic dividend from aging population in the period from 1995 to 2010.

It seems that second demographic dividend reaped in Bulgaria was equally small, as the period of increased savings rate was rather short, starting only around a decade ago or around 2010 more precisely. What further reduced the size of both second and first demographic dividends was very high unemployment in the period 1995 – 2010. This means that there was potential to increase GDP, because of the availability of first and second demographic dividends, but this potential actually was not unutilized, since economy operated close to full employment only for around two years (2007 and 2008) in this period of total of 15 years when (first and second) demographic dividends were at place.

Empirical evidence indicates, that the demographic burden associated with the aging population first started to materialize in 2010. This is the point of time when the share of working population from total population started to decrease. This is also the moment when old dependency ratio in Bulgaria reached the 25% mark (the mark distinguishing aging economies). So far the impact of demographic burden on economic performance was small, because demographic burden emergence coincided with the recession following the GFC. But with economy already operating at full employment (since 2018 more precisely), the negative economic impact stemming from aging population is set to increase.

1 Introduction

- 2 Population numbers evolution
 - 3 Demographic dividends and demographic burdens

Getting old before getting rich

- 5 Demographic outlook
- Implications for the economy



Bulgaria got old in 2002 (when old dependency ratio reached for a first time 25% mark). Unfortunately, at that moment (2002) per capita income in Bulgaria was only 26% of the one in the rich economies (where Germany was used as a benchmark country)







All CEE countries got old before getting rich. But while, per capita income in the remaining part of the CEE region varied between 45% and 68% relative to the benchmark country (Germany), in Bulgaria it was very low – only around one forth of those in the developed economies

GDP per capita in PPS terms at the year when Old dependency ratio reaches 25% (in %)





Key conclusions from Getting old before getting rich section

Until the early 2000s, rapid population aging was, for the most part, something that only affected a small group of advanced economies. Today, however, counties are tending to face such problems at earlier stages of economic development.

When in Sweden, Norway and Germany the old age dependency ratio passed the 25 per cent mark (when the economy enters in the get old category) between the 1970s and the early 2000s, their per capita incomes were roughly equivalent to that of the USA. In Czechia, Slovenia and Slovakia, the 25 per cent mark was passed at a point of time when per capita income was between 60% and 70% of those in Germany. Estonia, Poland, Hungary and Lithuania got old (when old dependency ratio reached 25 per cent) with per capita income between 50% and 60% of those in Germany. A third group of CEE countries, including Latvia, Romania and Croatia, got old at a point of time when their per capita income was between 40% and 50% of that in Germany. In Bulgaria, the old dependency ratio passed the 25 per cent mark in 2002, when per capita income was only 26% of the one in the rich economies (where Germany was used as an example).

All these indicate that while advanced economies (such as USA, Sweden, Norway and Germany but also including some CEE countries such as Czechia and Slovenia) got rich before they got old, many other developing economies (including Bulgaria) got old before getting rich (well before their income levels come close enough to those prevailing in the advanced economies).

Agenda

1 Introduction

- 2 Population numbers evolution
- 3 Demographic dividends and demographic burdens
- 4 Getting old before getting rich
- 5 Demographic outlook
- Implications for the economy



Outlook is poor. Under the baseline scenario prepared by the NSI, Bulgaria's population would be less than 5 mn in 2080 (on par with the census results in the beginning of the XX century)

Bulgaria – Population by census year and projection (numbers in million)





But NSI projection was based on very conservative assumptions

According to the most recent report on the demographic development of the country prepared by the Bulgarian Academy of Science (BAS) and commissioned by the Council of Ministers (presented in the previous slide), the number of population would decline by 20% (1.4 mn) over the next 25 years, or by something close to 0.8% annually.

This projection is based on very downbeat assumptions. For example, the report envisages that net migration will remain negative for the next 25Ys, which seems unrealistic, when taking into account that the negative trend (in terms of net migration) has been gradually easing over the past 20Ys (see slide N8), and also when having in mind that the progress in income convergence (if sustained in the future at a pace more or less similar to the one seen retrospectively) should make emigration less attractive.

Other projections are less pessimistic. Colliers, in their Balanced Scenario for demographic development (released in a conference on demographic challenges in 2018), envisage population numbers to shrink by 13% cumulatively or 0.5% annually over the next 25Ys (corresponding to 0.9 mn), which looks more plausible to me.

Both projections seems based on the extrapolation of past trends into the very distant future, but extrapolation of past events cannot be a reliable forecast. It would be also fair to say that economists have had very poor track record in forecasting population numbers. Perhaps we should abstain from making overconfident pronouncement on such a complex and multidimensional matter. Perhaps we should confess that we simply don't know what will happen with the population numbers quarter a century from now.



The age structure of population will remain skewed for an extended period of time and will start to improve only in 2060 as per NSI's baseline scenario. However, this will be also the trend (the new normal) elsewhere in Europe, as return to the classical pyramid shape structure is unrealistic





After a long period of deterioration, the share of working age population from total population will start improving again at around 2060. In response, Bulgaria's old dependency ratio will start improving as well. In 2080, PL and SK will have higher old dependency ratio than Bulgaria





Also on the positive side, the differences between life expectancy in Bulgaria and in CEE will diminish eventually (2080). The same is valid for Bulgaria's median age, which after peaking at 50.5Ys in 2040 is set to marginally improve to 48.6Ys in the very long-run (2080)



Source: Eurostat, UniCredit Bulbank

42 * Life expectancy at birth is defined as the mean number of years still to be lived by a person at birth, if subjected throughout the rest of his or her life to the current mortality conditions.



Bulgaria's old dependency ratio will continue deteriorating until 2060, when it's forecasted to exceed the 60% mark. Old dependency ratio will start to improve again after 2060. In 2080, Bulgaria's old dependency ratio is likely to be better than in Croatia, Poland and Slovakia



The most recent forecast prepared by the Bulgarian Academy of Science (BAS) (see slide N38) shows 20% contraction in the population number over the next 25Ys, or by something close to 0.8% annually. This projection, however, is based on very downbeat assumptions, particularly as regarding net migration which is presumed to remain negative in the whole forecasting period. Other projections are more optimistic. Colliers, in their Balanced Scenario for demographic development (presented in conference in Sofia on Sept 2018), envisage population numbers to shrink by 0.5% annually (or 13% cumulatively) in the next 25Ys.

The share of working age population from total population will continue deteriorating until around 2060, but is forecasted to start improving afterwards. In response, Bulgaria's old dependency ratio will start improving as well and in 2080, some CEE countries such as Poland and Slovakia, for example, are forecasted to have higher old dependency ratio than Bulgaria.

Along with Latvia, Bulgaria is the CEE country that is forecasted to report the strongest increase in the life expectancy (from 74.8Ys in 2017 to 87.1Ys in 2080 or 12.3Ys improvement in Bulgaria and from 74.9Ys in 2017 to 87.2Ys in 2080 or 12.3Ys in Latvia) in the period until 2080.

Also on the positive side, after peaking at 50.5Ys in 2040, Bulgaria's median age is set to decline a bit to forecasted 48.6Ys in 2080.

Agenda

1 Introduction

- 2 Population numbers evolution
- 3 Demographic dividends and demographic burdens
- 4 Getting old before getting rich
- 5 Demographic outlook

Implications for the economy



Shrinking and aging population is bad for the economy for at least two reasons: Lower GDP growth and downside pressure on public finances

With aging, labour force (one of the two main production inputs) goes down, which translates into a decreased labour contribution to GDP growth.

According to IMF's estimates, the deficit in the Bulgarian pension insurance system (negative gap between pension contributions and benefits) will increase from 3.6% of GDP today to 6% of GDP in 2050. This means that fiscal revenues will have to increase by 2.4% of GDP in the next 30Ys in order to keep the status quo existing today. On the positive side, international comparisons reveal that the scale of pension system balance deterioration in Bulgaria will be relatively small, when compared with the negative pressure which many other countries inside and outside Europe are likely to face.

The impact of shrinking population on economic performance should not be exaggerated. There are more important things than economic growth. For example per capita GDP growth (not influenced by the changes in the population numbers) is more important than GDP growth. Importantly, income convergence is measured in per capita GDP terms, not in terms of annual GDP growth.

What really matters is even not per capita GDP growth, but the changes in the standard of living. Standard of living is more comprehensive concept, however. As a minimum it reflects:

- not only how much we consume (measured by the change in the per capita GDP);
- but also how healthy we are (captured by a host of health quality indicators);
- what is the quality of our environment (what is the quality of water we drink and air we breath);
- many hard to measure things, such as what is the security of the towns and villages we live in (crime rate), how secure our jobs and incomes are, what our relationships are (at home, on the job and in a broader social context), what is our self-esteem, how confident we are about our own future lives etc.

Deteriorating demographics is set to push GDP growth in 2019 -35 period by 0.6% down, when compared with 2000 -18 period*

Economic growth accounting* from 2001 to 2018 in Bulgaria



Source: Eurostat, UniCredit Bulbank

⁴⁷ *Note: For more on how we have obtained this result look at slide N38.



We use a very standard approach in our growth accounting calculations, to quantify the impact of deteriorating demographics on GDP growth in Bulgarian economy

To see the effects of an aging population we apply growth accounting procedure which decomposes the growth rate of an economy's total output into two parts: 1) contribution of the production factors – capital and labour and; 2) the unexplained part of growth in GDP defined as Total factor productivity (TFP), which measures residual growth that cannot be explained by the accumulation of traditional inputs such as labor and capital.

Theoretically, the shares of production factors increase into output are related to their marginal product. In the long run these measures are equivalent to share of profits (as corporates are owners of capital) and share wages (as people of labour get wages) in value added, but here we use fixed weights 0.4 for capital and 0.6 for labour^{*}, as this is empirically tested to be relevant in aggregated country level by BNB and many representatives of academia.

To forecast labour contribution in future GDP growth rate (2019 - 2035) we assume that: 1) Population in working age will decline by 1% annually and; 2) the ratio between number of employed persons and population in working age will remain 67% in the period of the forecast or exactly where it was last reported in 2018.

Given all above, the shrinking population reduces GDP growth (other things being equal) because the future contribution of labour will decrease for the period 2019 – 2035 to negative 0.2% annually, from 0.4% positive contribution annual average in the period from 2000 to 2018. The gap will thus be 0.6 pp annually between 2000 -18 period and 2018 -35 period.

*Note: We use 0.4 weight for capital and 0.6 weight for labour percentage increase. When we estimate the aggregate share of profits in the Bulgarian economy we found that shares of labour and capital are closely equal ½ to ½, but this estimation includes the profits from natural resources and all misspecification of market failures. When ½ weight was used labour contribution is 0.3% rather 0.4% in 2000 -18 period.



To fully finance the deficit increase in the pension system, resulting from aging (equal to 2.4% of GDP), the contribution rate should rise by 5.4pp, to reach 25.2%



- According to IMF's estimates, the deficit in the Bulgarian pension insurance system (negative gap between pension contributions and benefits) will increase from 3.6% of GDP today to 6% of GDP in 2050. This means that fiscal revenues will have to increase by 2.4% of GDP in the next 30Ys in order to keep the status quo existing today.
- One way to finance this gap increase is to rise social insurance contribution rates in Bulgaria, which in 2019 are the lowest in the CEE region.
- If Bulgaria's contribution rate increase by 5.4% (from 30.7% to 36.1%), it will become the second lowest in CEE (lower would be only the one in Latvia).
- Don't forget that the rest of CEE faces similar or, perhaps, even greater challenges, as pension systems in many of the CEE countries are more generous than in Bulgaria, meaning that they are likely to raise contribution rates even more.



Fiscal revenues will increase with an amount equivalent to 0.8% of GDP, if excise rates in Bulgaria are increased to the average ones in CEE. Fiscal revenues will increase with an amount equivalent to 2.4% of GDP, if excise rates in Bulgaria are raised to the average ones in EU



Source: Taxes in Europe Database v3, Eurostat, 2018 Ageing report, UniCredit Bulbank



Even after raising taxation with 2.4% of GDP (to plug the hole in the pension system), Bulgaria will remain one of the CEE countries with the lowest redistribution of resources through the budget, which means that Bulgaria's business friendly tax regime will be preserved





Key conclusions from implications for the economy section

Shrinking and aging population is bad for economy for at least two reasons: 1) Deteriorating demographics is set to push GDP growth in 2019 -35 by 0.6% down, when compared with the one reported in 2000 -18; 2) According to IMF's estimates, the deficit in the Bulgarian public pension insurance system (negative gap between pension contributions and benefits) will increase from 3.6% of GDP today to 6% of GDP in 2050. This means that fiscal revenues will have to increase by 2.4% of GDP in the next 30Ys in order to keep the status quo existing today.

One way to finance the increased gap in the pension system is to rise social insurance contribution rates. This will require Bulgaria's contribution rate to increase by 5.4% from 30.7% to 36.1%. But even after such an increase Bulgaria's contribution rate will remain the second lowest in CEE. Another alternative approach to plug the hole in the pension system is to increase excise rates on tobacco products and alcoholic beverages. If Bulgaria's excise rates are increased to the average ones in CEE, fiscal revenues would be up 0.8% in GDP terms, which falls short of the target. To fully plug the gap Bulgaria's excise rate on tobacco products and alcoholic beverages and alcoholic beverages should be raised to the average ones in the EU28, which seems unrealistic at this stage of development, because price level in Bulgaria is around half of the average one in the EU28. Therefore, the best approach will be some combination of the two proposals above or, perhaps, raising fiscal revenues from property taxes, which in Bulgaria are low, particularly when compared with advanced economies.

No matter how the hole is plugged, total general government revenues will remain among the lowest in CEE, preserving Bulgaria's business friendly tax regime. This is because other CEE countries will have to implement pretty much the same measures in response to the same challenge. They might be even under stronger pressure than Bulgaria, because pension systems in CEE are more generous as a whole.

THANK YOU FOR YOUR ATTENTION!

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