THE SERBIAN PENSION SYSTEM

2022

WORLD BANK GROUP

unicef
for every child

ACKNOWLEDGEMENT

This Note was prepared by Gonzalo Reyes (Sr. Social Protection Specialist, World Bank).

The team would like to thank the Ministry of Labour, Employment, Veterans and Social Affairs and Pension Insurance Fund for the information, comments and support provided in the preparation of this document.

CONTENTS

ABBREVIATIONS

CROSO	Central Registry of Compulsory Social Insurance
EU	European Union
GDP	gross domestic product
PAYG	pay as you go
PER	Public Expenditure Review
PIO	Pension and Disability Insurance Fund of the Republic of Serbia
SORS	Statistical Office of the Republic of Serbia

1 DESCRIPTION

The Serbian pension system is a defined-benefit system based on points with pay as you go (PAYG) funding. The system has undergone numerous reforms in the last decades but maintains the defined benefit design, PAYG financing and administrative structure that existed under the Yugoslav regime prior to 1990.

The legal basis of the current system lies in the 2003 Law on Pension and Disability Insurance. This law introduced the point structure in the system, an absolute minimum pension, increased retirement ages and introduced rule-based indexation into the system. The legislation has been subject to numerous changes that have subsequently revised key parameters in the system, such as: retirement age, contribution rates, indexation formula and value of minimum pensions. In addition, government has introduced ad hoc pension increments in certain years.

The administration of the system is integrated under a single public entity. Since 1 January 2008, the administration of the three pension insurance funds that existed up to that point (employees, self-employed and farmers) has been merged into a single fund, the Pension and Disability Insurance Fund of the Republic of Serbia, also referred as the PIO fund. In addition, since January 2012, the Republic Pension and Disability Insurance Fund manages insurance and pays pensions to military insured persons.

The most important recent development in the system took place in the period 2014–2018, when pensions in payment were reduced to control expenditures. Given the increasing cost of the system and in the context of a fiscal crisis that triggered a fiscal consolidation programme, the Serbian Government approved in 2014 the Law on Temporary Reduction of Pensions. This law introduced up to 25 per cent reductions in the value of pensions in payment for pensions that were above the average (around €200 at that time) and affected almost 40 per cent of pensioners. The objective of the law was to reduce the cost of pensions until it represented no more than 11 per cent of GDP.

Since 2018, pension payments have gradually increased, and special compensation for low pensions was introduced. In 2018, the four-year reduction period came to an end and the goal to reduce the pension cost to 11 per cent of GDP was achieved. As a result, pensions paid starting in October 2018 were increased up to the value they had in October 2014 plus all adjustments that should have been provided in the interim. Given that the abolishment of the temporary reduction of pensions would only benefit higher pension earners, the Government also introduced an additional adjustment of pension benefits targeted to low pensions. This adjustment is capped at a total cost of 0.3 per cent of GDP.

Although pensions were adjusted, automatic indexation was not immediately reintroduced in 2018. In 2019, a further legal change reintroduced the indexation rule into the system using the Swiss-based formula, but subsequent discussion about further changes to indexation still subsists in the Government.

The effects of COVID-19 are not immediately apparent in the pension system, despite some additional stress to its finances. As part of the COVID-19 economic relief package, all pensioners received a special one-time payment of RSD 4,000 in March 2020. Pensioners were also entitled to receive the universal cash transfer of €100 for all adults implemented by the Government. In addition,

the Government established a three-month deferment of social security contributions for all private companies, to be repaid in 24 instalments starting from 2021. These measures, plus the reduction in the contributive income due to the economic downturn, will show up in the pension fund finances for 2020, but it is yet unclear how persistent they will be for the future sustainability of the system.

Table 1. Pension parameters in Serbia

Retirement age	65 for males/63 and 2 months for females (gradually raised by 6 months a year until reaching 63 years in 2020 and then by 2 months a year until reaching 65 years in 2032) with 15 years of contribution. Any age with 45 years of contribution. Early pension: Age 59 for men/58 and 4 months for women (gradually rising to 60 years by 2023 for both men and women) with at least 40 years (men) or 39 years (women, gradually rising to 40 years by 2023) of contributions. The pension is reduced by 0.34% for each month it is claimed before the normal retirement age, up to 20.4%.
Pension calculation	The pension is calculated based on the number of years of contributions (up to 45 years), the ratio of the individual's gross earnings to the national average annual wage in each year of contributions, and the value of the general point.
Valorization	Value of the general point is determined each year and it is indexed using the same rule that applies to pensions in payment.
Indexation post-retirement	Law approved in December 2019 to reintroduce Swiss formula indexation (according to prices and wages).
Eligibility for disability pension	Contributed for 1 year if younger than 20; 2 years if between 20 and 24; 3 if 25–29; and at least 5 years if age 30 years or older. No requirement if work injury (defined as inability to perform any work).
Level of disability pension	The pension is calculated based on the number of years of contributions, the ratio of the individual's gross earnings to the national average annual wage in each year of contributions, and the value of the general point.
Eligibility for survivor's pension	The deceased was a pensioner or had at least 5 years of coverage. Eligible survivors include a widow age 53 years or older or a widower age 58 years or older who is disabled or caring for a child younger than 15 years (26 years if a student; no limit if disabled); a dependent mother age 60 years or older or disabled; a dependent father age 65 years or older or disabled; children younger than age 15 (age 26 if a student; no limit if disabled); and dependent grandchildren, brothers and sisters. A widow(er) must have been married to the deceased for at least 2 years or had a child with the deceased, or if the deceased was age 65 years or older (men) or age 60 years or older (women) at the time of marriage. The widow(er)'s pension does not cease upon remarriage.
Level of survivor's pension	70% of the old-age pension the deceased received or was entitled to receive is paid for one survivor (140% for a full orphan); 80% for two survivors (160% for full orphans); 90% for three survivors (180% for full orphans); or 100% for four or more survivors (200% for full orphans). The pension is split equally among all eligible survivors. The minimum survivor pension is the old-age pension calculated based on 20 years of coverage.
Contribution rates	25.5% of gross salary – 11.5% by employer and 14% by employee. (Reduced from 26% to 25.5% by law approved in December 2019.)

2 PERFORMANCE OF THE PENSION SYSTEM

COVERAGE

Demographic transition has resulted in a diminishing and ageing population in Serbia. While in 1980 the population pyramid in Serbia looked like a traditional pyramid with a wide base of young population, decreased fertility, increased life expectancy and the effects of the regional Balkan conflict and subsequent emigration explain a significant shrinking and inversion of the population pyramid. Given the demographic structure that we observe in 2020 and onwards, it is difficult to finance any pension system, much less a PAYG system that transfers resources from the current working age population to retirees.

Figure 1. Demographic pyramids in Serbia (1980–2060)

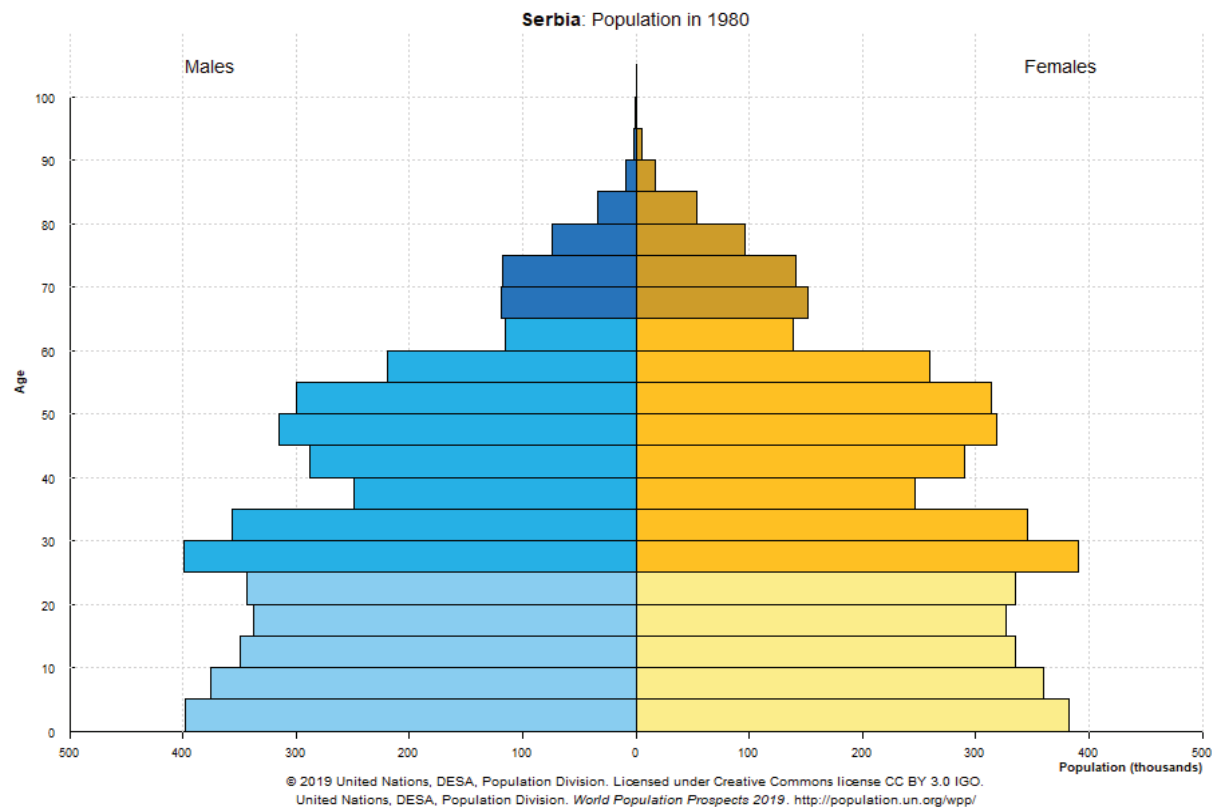
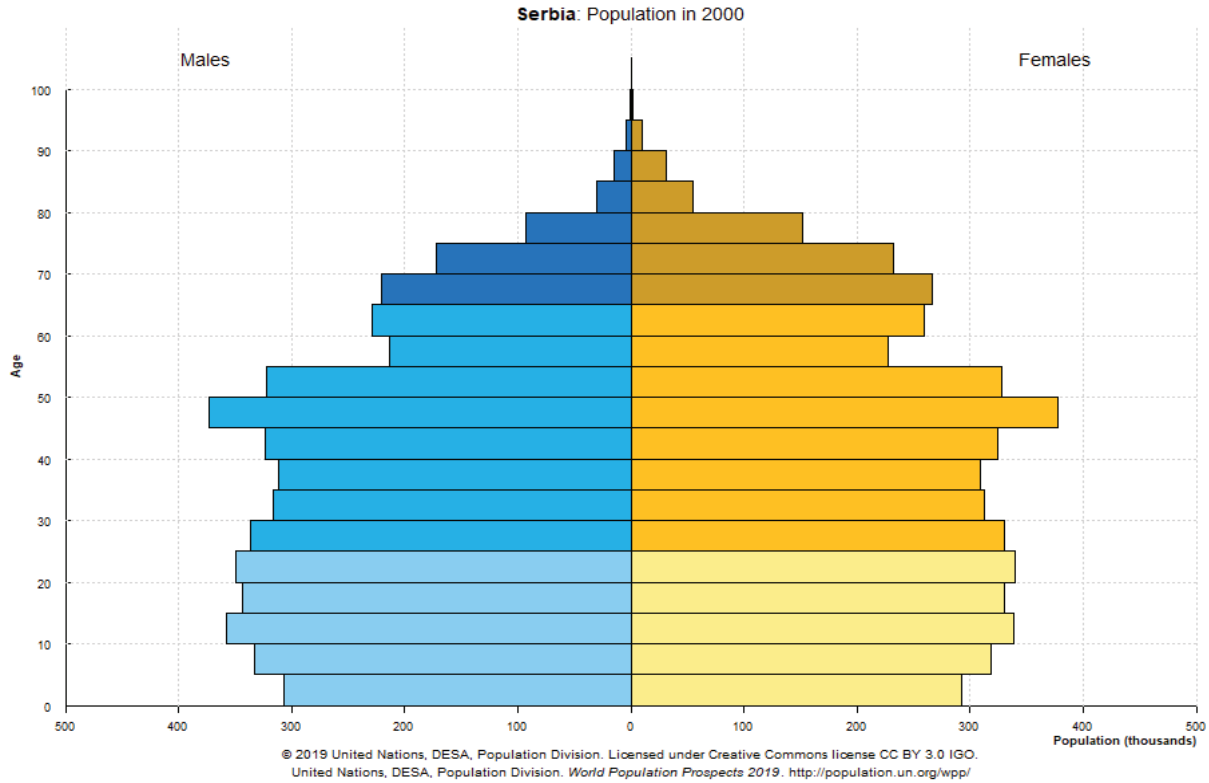


Figure 1. Demographic pyramids in Serbia (1980–2060) (Contd.)



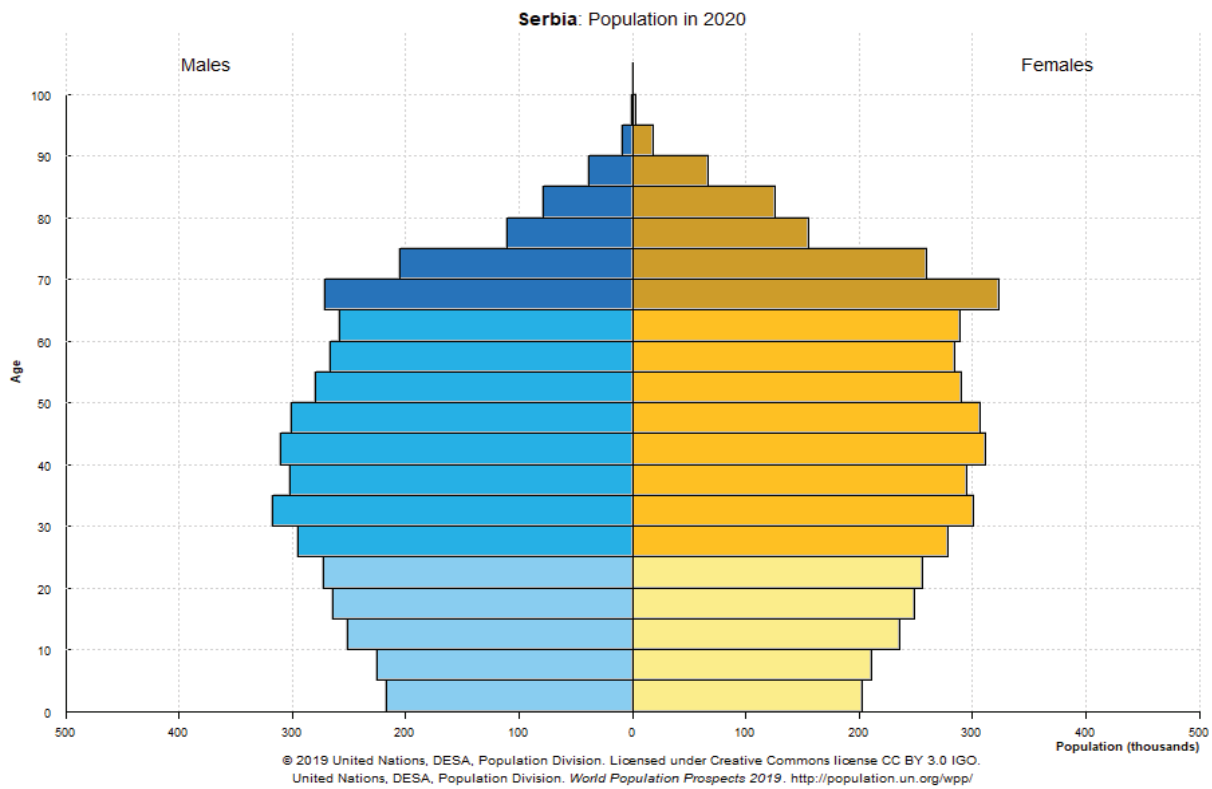
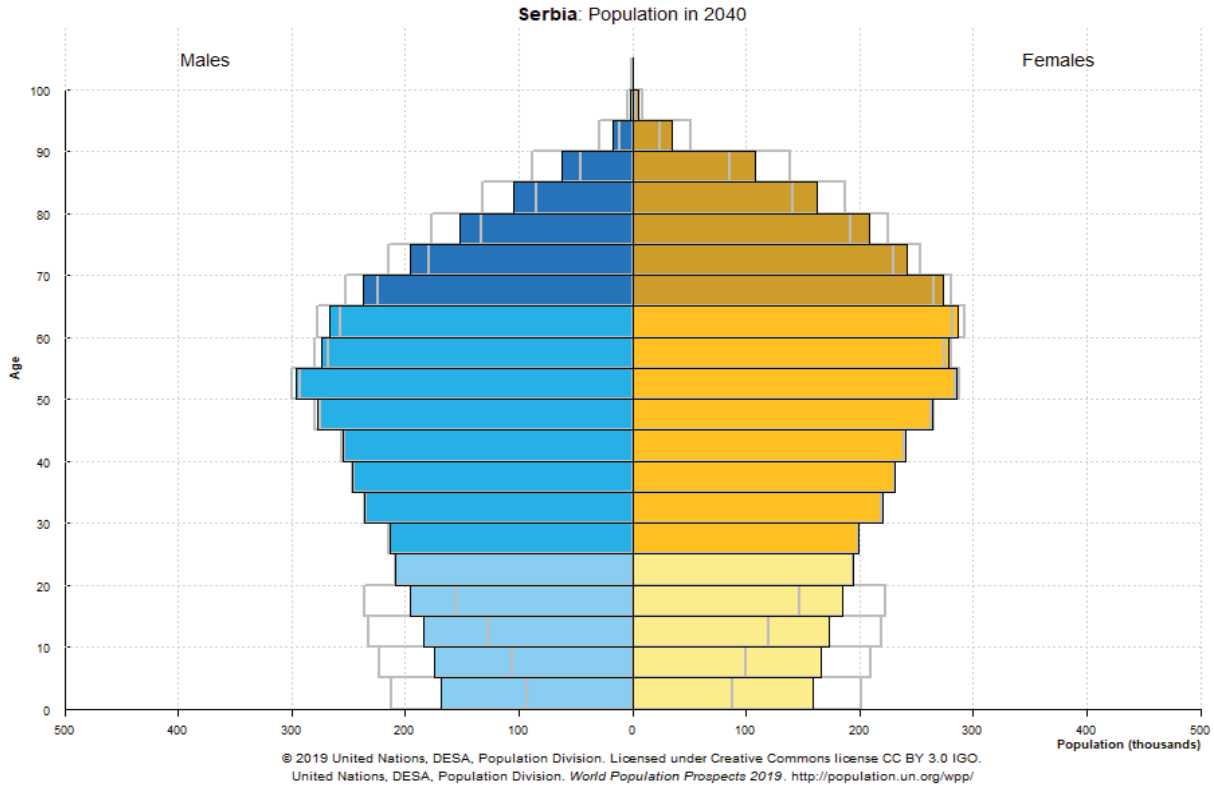
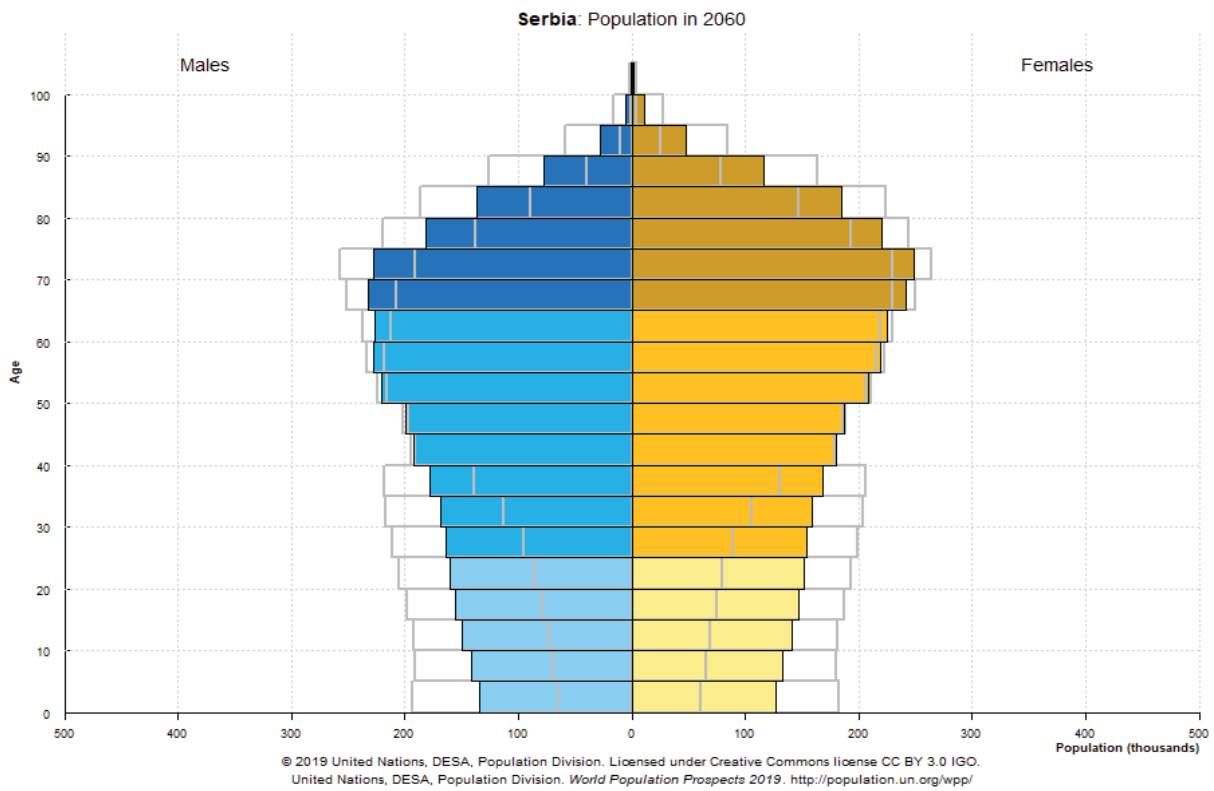


Figure 1. Demographic pyramids in Serbia (1980–2060) (Contd.)

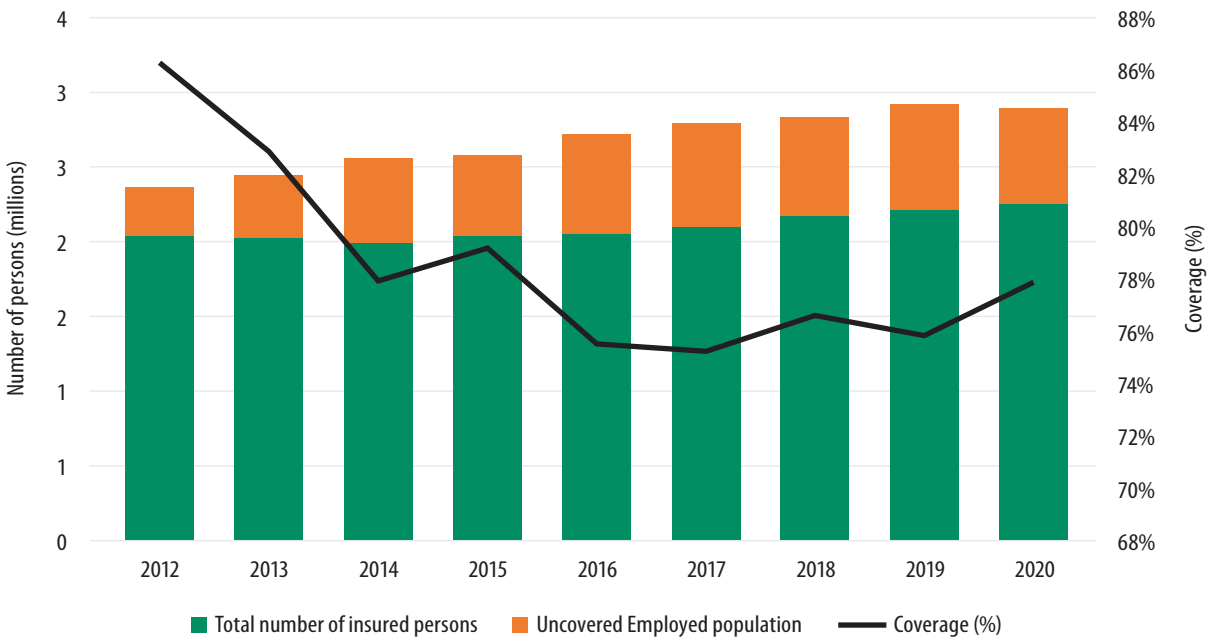




Source: United Nations, World Population Prospects 2019. https://population.un.org/wpp/Graphs/DemographicProfiles/Pyramid/688

Adding to the demographic pressure, contributory coverage has decreased in the pension system in the last decade. While the 'informal employment' phenomenon was largely unknown during the times of the Yugoslav regime, its prevalence has increased in Serbia, either by using alternative forms of employment or by eluding the contributory mandate of employees. While the total number of contributors (in all three categories) was equal to 86.3 per cent of total employment in 2002, it decreased to 75.8 per cent in 2019, before recovering slightly to 77.9 per cent in 2020. This recovery might be temporary if it is a result of the measures put in place to retain employees during the economic shock produced by the COVID-19 pandemic and would suggest that the most affected part of the population in terms of job losses were those in the informal sector or uncovered by social insurance.

Figure 2. Total employment and coverage of the pension system



Source: Labour Force Surveys and PIO Statistics, various years

The number of beneficiaries is growing, and the dependency rate is high and will continue to increase in the system. In 2020, the total number of contributors was 2.25 million, compared with a total number of 1.7 million beneficiaries, which means that there are 75.5 beneficiaries for every 100 contributors. This is a comparatively high dependency ratio by international standards, and population ageing will probably make it worse in the future.

The increase in total contributors observed since 2012 has been driven by dependent workers and the self-employed, while farmers show a decline in contributors.[1] Contributions from the dependent workers category went from 1,648,295 in 2012 to 1,901,924 in 2020, and contributions from self-employed workers increased from 203,976 in 2012 to 249,464 in 2019, before falling to 247,165

1 Despite consolidation of the three separate funds into a single insurance fund, for registration purposes, covered population is still classified into three categories of workers: employees (salaried workers), farmers, and the self-employed (independent activities).

in 2020. Farmers contributions, on the other hand, have shown a sharp decline, falling from 172,509 in 2012 to 105,344 in 2020, underscoring the difficult situation that this subset of the population is facing in terms of coverage and inclusion in the pension system in Serbia and the financial strain that it constitutes for the Serbian Pension Fund.

As a result of parametric changes and the gradual increase in retirement ages, benefits have concentrated in the population 65 and older. The total number of old age beneficiaries has declined from 80 to 76 per cent of the population (65 years or older) between 2011 and 2019. However, old age beneficiaries who are 65 and older represented 83 per cent of total old age recipients in 2019, compared with 67 per cent in 2012. As a result, coverage of pension benefits among old age population has increased from 83 per cent in 2012 to 90 per cent in 2019. As population ages it will be more relevant to maintain high levels of coverage among the older population, which represents an additional challenge to increase contributory coverage during active life.

ADEQUACY

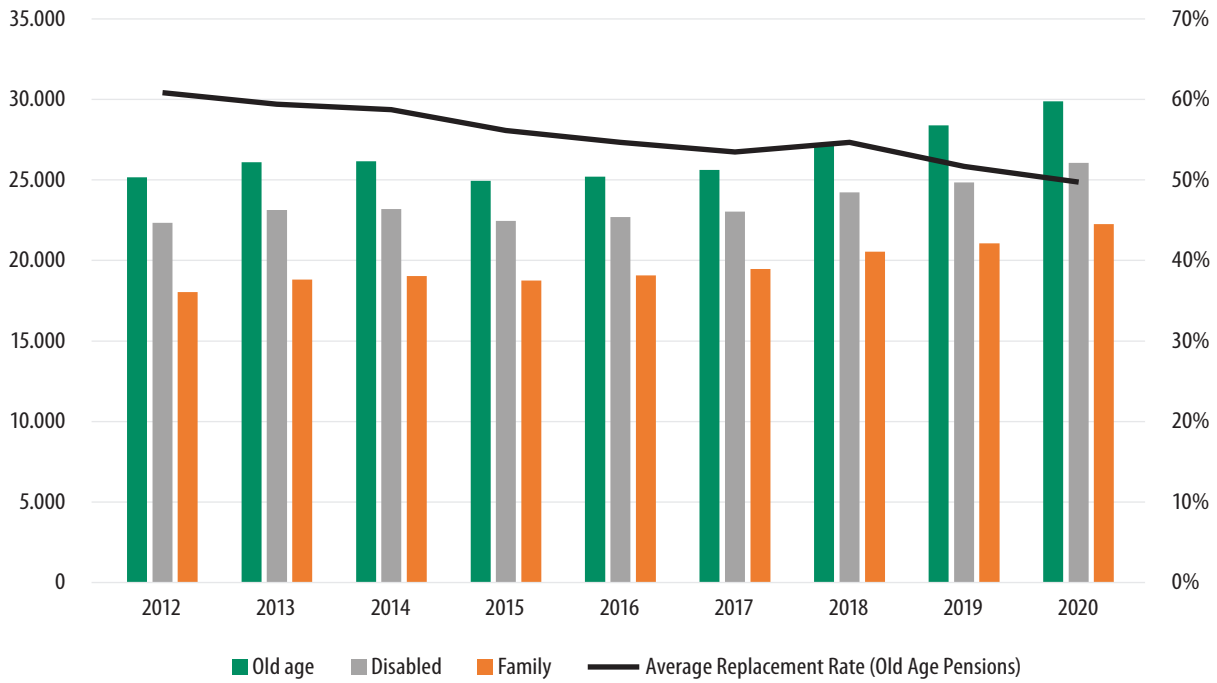
The design of the Serbian pension system intends to provide adequate benefits based on a points system, but several aspects affect the actual benefit levels, some by design and some by intervention through ad hoc decisions. The benefit amount is determined according to a formula that takes into account the total number of contributions made by the individual, the ratio of the individual's gross earnings to the national average annual wage in each year of contributions, and the value of the general point. A crucial aspect of the system is how the value of the point is determined and previous wages are valorized. Under current rules, past wages are actualized at less than the overall wage growth in the economy, affecting the value of benefits. However, several aspects affect the level of benefits and their relationship with contributions, such as: existence of minimum pension, ad hoc adjustments to the value of pensions, valorization and indexation policies.

The most recent policy that significantly affected the value of pensions was the temporary reduction of pensions that went into effect between 2014 and 2018. During that period, pensions in payment and new pension benefits were reduced in up to 25 per cent in nominal terms. While average pensions were growing at a rate of about 4 per cent per year before 2014, they did not grow on average between 2015 and 2018 and grew again at a 5 per cent rate on average in the 2018–2019 period. The average replacement rate[2] for old-age pensions was 61 per cent in 2012 and has declined to 50 per cent in 2020, despite a brief recovery to 55 per cent in 2018 (due to the restoration of benefit amounts).

Although the value of pensions was restored in 2018, the application of that measure introduced certain elements that affect the value of pension until today. To compensate lower pension beneficiaries who were not largely affected by the temporary reduction in pensions, additional adjustments of pension benefits were introduced in 2018, with a total cost cap of 0.3 per cent of GDP. These adjustments were made 'out of the formula' that determines pension benefits and therefore further erode the relationship between contributions and benefits. In addition, the 2018 legislation did not reintroduce indexation of benefits, further affecting the real value of pensions, even though they were adjusted in nominal terms. Indexation was ultimately reintroduced in 2019 utilizing the 'Swiss formula', but discussions remain on whether this will be the formula to utilize permanently.

2 Calculated as average pensions divided by average earnings.

Figure 3. Average pension by type of benefit (in dinars) and average replacement rates (in %)



Source: PIO Statistics

The link between valorization of wages and indexation of pensions has important consequences in the adequacy of benefits in the case of Serbia. The Serbian legislation indicates that the same rule used for valorization of wages included in the point calculation should be used to index pension in payments. This apparently technical rule actually affects pension in important ways, both at the point of pension calculation and throughout the retirement period. At retirement, valorization is used to bring forward the actual value of contributions paid in the past, sometimes starting 30 or 40 years prior. In order to compare the monetary value of contributions paid at each point in time, until retirement, we need a method to calculate the present value of each of these historical payments. Since contributions are made out of wages, a useful yardstick for this comparison is the evolution of average wages in the economy. On the other hand, pensions in payment do not necessarily need to keep up with wage growth, since they are not 'active' income anymore. Pensions do need to satisfy a certain level of expenditures and should be safeguarded against inflation at least.[3] Therefore, there is no reason a priori to justify linking both the valorization of wages and the indexation of pensions in payment.

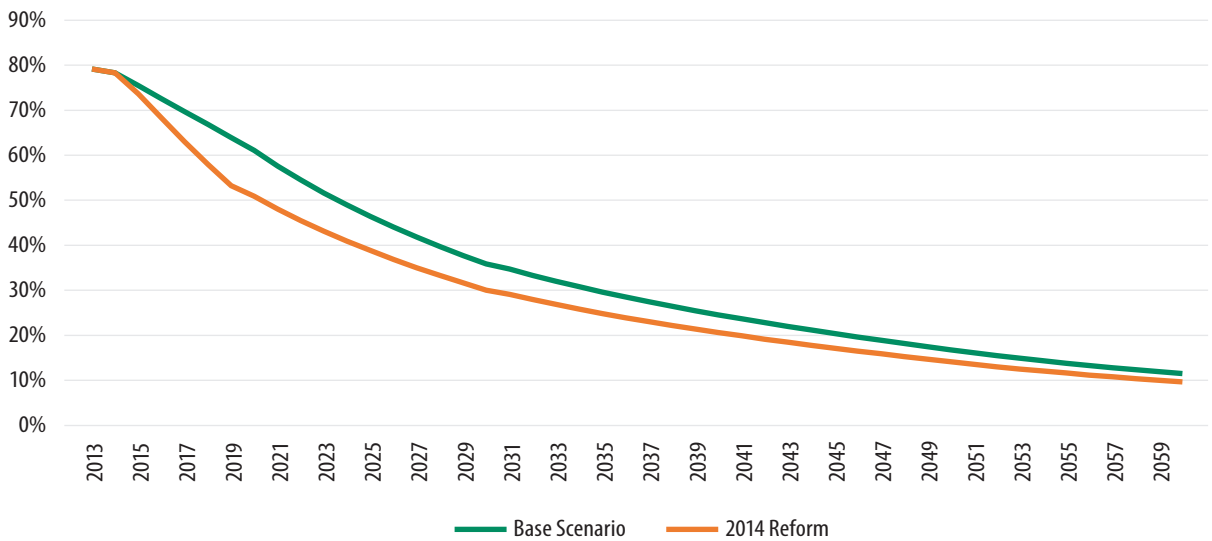
The consequence of linking valorization and indexation is trading off pension adequacy and financial sustainability of the scheme. Utilizing a valorization mechanism that more closely resembles the evolution of wages would increase replacement rates compared with the whole history of contributions and provide a more equal weight to contributions paid at different points of the individual careers in the determination of benefits. On the other hand, providing pensions in payment with a

3 Adjustment of pensions above inflation may be justified if social objectives indicate that pensioners' standard of living should not depart significantly from the standard of living of the salaried population, provided that such adjustment is affordable for the system.

less generous adjustment mechanism, while still protecting against inflation, would reduce the fiscal burden of the pension scheme, while maintaining the real value of pensions.

The 2015 Public Expenditure Review (PER) estimated a quick erosion in the value of pensions in the future with respect to the level of real wages due to the existing rule used to index the value of the general point to inflation. Given this rule, prior contributions do not keep up with the increase in real wages, resulting in a systematic reduction of pension values with respect to observed wages for each generation of new retirees. Regardless of the increase in pensions introduced in 2018, the PER estimated that this erosion in the value of pensions will continue into the future,[4] as it is the result of permanent measures embedded in the system, which link the indexation of the value of points (which represent contributions made into the system) with the formula used to index pensions in payment. This link creates a clear tension between sustainability and adequacy in the system. The current situation of ad hoc indexation or the previous rule of inflation indexation tilts the balance in favour of sustainability and against adequacy. On the contrary, any rule that would provide more adequate benefits would also affect the financial sustainability of the system.

Figure 4. Average replacement rate as percentage of net wage



Source: Results from 2015 PER, World Bank

FINANCIAL SUSTAINABILITY

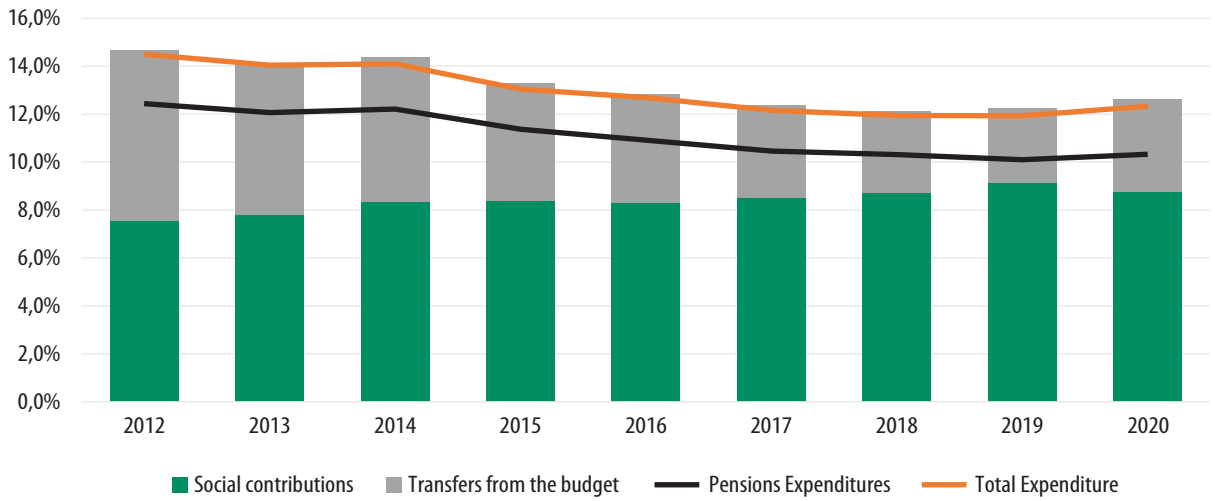
The Government was able to contain increasing pension expenditures through the Law on Temporary Reduction of Pensions implemented in 2014. Prior to 2014, there was an increasing trend on the level of pension expenditures in absolute terms, which reached more than 500 billion dinars (12.3 per cent of GDP) by 2014. Total expenditures in 2015–2017 were on average 2.7 per cent lower

4 Figures for replacement rates calculated in the PER differ from those presented based on observed data because the PER used average contributory wages, while we can only observe average overall wages in the statistical data.

than in 2014, enough to decrease the level of expenditures to 10.5 per cent of GDP by 2017. Since 2018, the absolute level of pension expenditures has once again increased, but strong economic growth led pension expenditures to a level of 10.1 per cent of GDP by 2019. The global economic crisis resulting from the COVID-19 pandemic had a moderate impact in Serbia. However, an increase in the absolute level of pension expenditure and a slowdown in economic growth led pension expenditures to a level of 10.3 per cent of GDP in 2020.

Due to positive trends in the labour market, contributory revenues steadily increased between 2012 and 2019, before declining in 2020. Although coverage of the employed population has been flat over the last five years, the increase in total employment and in average wages resulted in a nominal increase in contributory income of 8.1 per cent per year on average between 2012 and 2019. Contributory revenue reached 9.1 per cent of GDP in 2019 before falling back to 8.7 per cent of GDP in 2020.

Figure 5. Revenues and expenditures as percentage of GDP



Source: Pension and Disability Insurance Fund of the Republic of Serbia

The financing gap for the pension schemes has decreased recently, but this trend may not continue into the future. As a result of reducing expenditures and increasing contributions, the financing gap covered by transfers from the Government has declined from 7.1 per cent of GDP in 2012 to 3.1 per cent of GDP in 2019. Due to contribution holidays and special benefits provided during the pandemic, the financing gap increased to 3.9 per cent of GDP in 2020 (a level last observed in 2017).[5] However, there are several reasons that indicate that the pre-COVID-19 trend may not continue into the future, including evolution of labour market conditions, declining population, increasing number of beneficiaries and resumption of benefit indexation.

The recent decline in pension expenditures was due to the Law on Temporary Reduction of Pensions. Since 2018, pensions in payment have been restored in value and the Government has recently reintroduced indexation. We observe a 5 per cent increase in pension expenditures in 2018 and 2019, which would be a figure closer to what we can expect in the future.

5 Not all budget transfers cover the financing gap. Part of the transfers generates from the legal obligation to compensate the lower level of pensions (0.28 per cent of GDP in 2020) or pensions from special regulations (0.16 per cent of GDP in 2020).

The pre-COVID-19 favourable evolution of the labour market will be difficult to replicate post-pandemic. Although the labour participation rate and employment rates recovered in Q3 of 2020, after a sharp drop in Q2, employment growth remains bounded by the strength of the recovery in the medium term. In addition, Serbia faces significant risks of job-losses due to automation and digitalization, processes that have been accelerated due to the pandemic.[6]

Demographic projections suggest that, even if the labour market behaves like in the last decade, contribution revenues will not be enough to cover pension expenditures. Despite a reduction of 10.4 per cent in the working age population between 2010 and 2019, the increases of 8 percentage points in labour force participation, more than 12 percentage points in employment rates and an average annual increase of 5.4 per cent for average wages explain the increase in contributory revenue over the period. In the next 20 years, working age population is expected to decrease by more than 15 per cent, while the older adult population will increase by more than 8 per cent. In order to maintain revenue levels observed in 2019, the combination of employment rates, wages and formal share would have to increase by at least 15 percentage points. Considering that it is difficult to increase formality significantly (it has hovered around 80–84 per cent levels since 2011) and employment rates have reached a relatively high level of 68.2 per cent, the country would require a significant and steady increase in labour productivity to sustain the increase in average wages that would allow the pension system to maintain the level of revenues it observes today. Considering that expenditures are also expected to increase, it is very unlikely that the system will continue closing the financing gap in the future.

We can use the PAYG formula to analyse how the financing balance has evolved in recent years and how it is expected to behave in the future. Using the identity between revenues and expenditures that needs to hold for a PAYG system to be in balance, we can express the equilibrium contribution rate in terms of the system's replacement rate, contributory and beneficiary coverage, and demographic replacement rate as follows:[7]

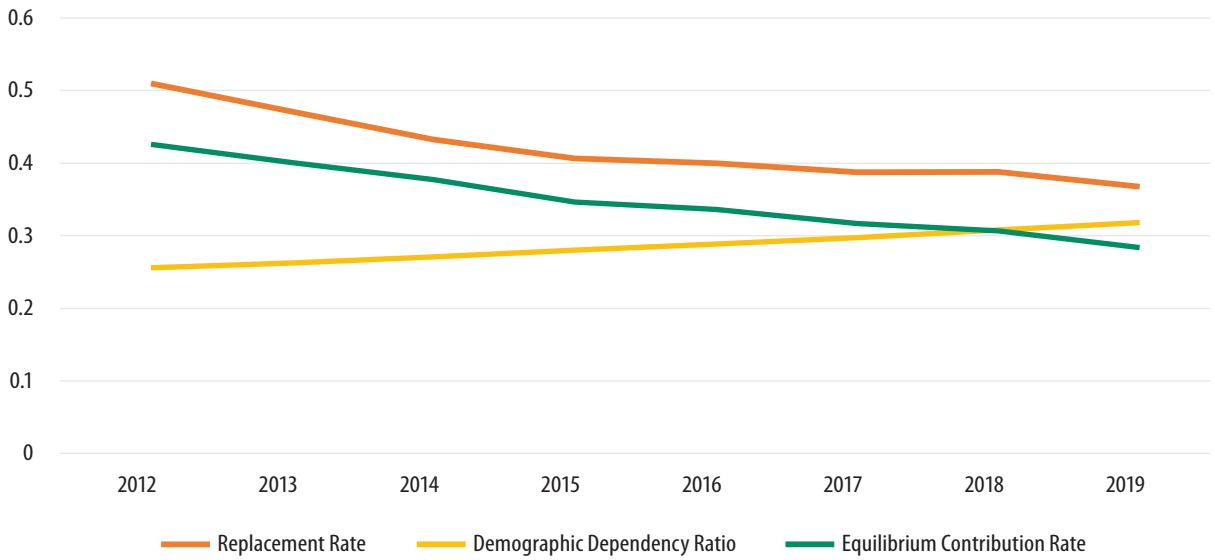
$$c = \textit{Average replacement rate} * \frac{\textit{Beneficiary Coverage}}{\textit{Contributory Coverage}} * \textit{Demographic Dependency Ratio}$$

Where the average replacement rate is measured as the ratio between average benefits and average contributory wages, beneficiary coverage is the number of pension beneficiaries divided by total population 65 and older, contributory coverage is the number of contributors divided by working age population, and the demographic dependency ratio is the ratio of population 65 and older to working age population.

While the demographic dependency ratio has increased in recent years, increases in contributory coverage and, crucially, reductions in replacement rates have resulted in a reduction in the equilibrium contribution rate. While the equilibrium contribution rate stood at 42.6 per cent of wages in 2012, it decreased to 28.3 per cent by 2019, which is very close to the actual contribution rate of 26 per cent. This is another way of looking at the reasons behind the closing of the financial gap observed in the system throughout this period and the consequent reduction in government transfers to cover that gap.

6 See World Bank & Vienna Institute for International Economic Studies (wiiw) (2019).
7 See Annex for a derivation of this formula.

Figure 6. Evolution of replacement rate, demographic dependency and equilibrium contribution rate, 2012–2019

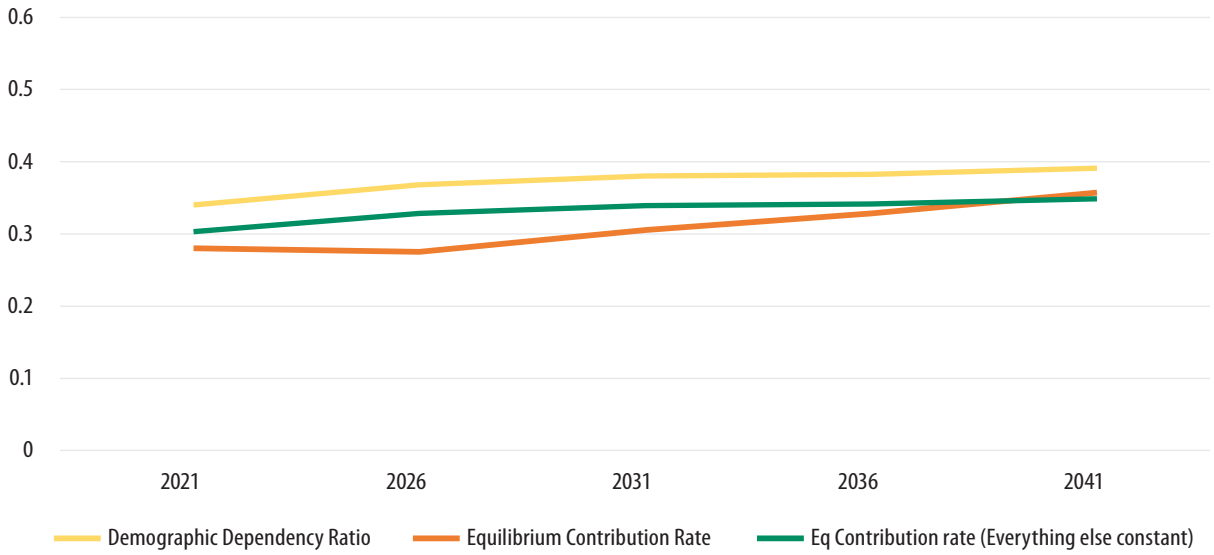


Source: Population estimates, Statistical Office of the Republic of Serbia and PIO Statistics

Using demographic projections, the projected evolution of the equilibrium contribution rate in the future under alternative scenarios shows that the system will remain in deficit. We can calculate the demographic dependency ratio from the medium variant demographic projections and plug it into the equation for the equilibrium contribution rate presented earlier. Alternative scenarios can be used for the remaining variables, and here we present two: in the first scenario, all other parameters remain constant at their 2019 levels. However, this implies that replacement rates would remain at a relatively low level of 36.7 per cent and contributory coverage stops growing at 49 per cent. Therefore, in an alternative scenario, we propose target values of 50 per cent replacement rate and 55 per cent coverage to be achieved by 2041. In the first scenario, the equilibrium contribution rate is determined by the increase in dependency ratio, growing from 30 per cent in 2021 to 35 per cent by 2041. In the alternative scenario, the increase in coverage allows the contribution rate to reach 27.5 per cent by 2026, but the increase in replacement rates eventually increases the contribution rate to 35.7 per cent by 2041.

Serbia needs to complement its current pension system with additional sources of retirement income to maintain the levels of coverage and protection in old age. Given the demographic projections and the limits to expand coverage significantly, the only way for the system to achieve financial balance would be to reduce benefits or reduce beneficiary coverage, resulting in worse levels of protection for retirees. It is apparent that the policy decision in Serbia is whether to maintain a financially unsustainable system with additional subsidies to provide adequate levels of income to a large proportion of the older adult population or to achieve sustainability at the expense of protection in old age. Given the design of the system and the context in which it operates (demography and labour market), it is clear that it cannot achieve both sustainability and adequacy plus coverage at the same time. Additional resources, such as subsidies or higher private savings, would be needed to provide a sustainable and adequate level of income protection in retirement for most of the population.

Figure 7. Projected dependency ratio and equilibrium contribution rate under alternative scenarios

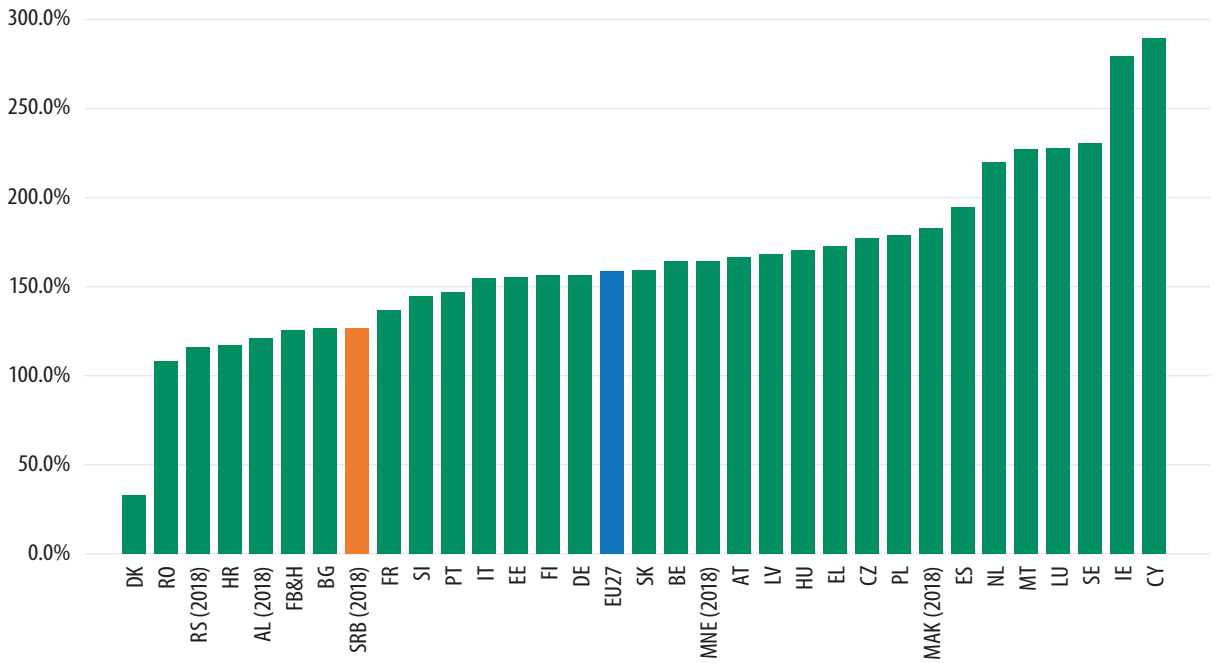


Source: Population projections, Statistical Office of the Republic of Serbia and simulations

3 INTERNATIONAL COMPARISON

Serbia tends to fare unfavourably when its main indicators are compared with other pension systems in the Western Balkans region and the European Union (EU). Serbia's support ratio (SR, the ratio between contributors and pensioners) is one of the lowest in the continent, comparable with the ones found in Bosnia and Herzegovina and Bulgaria and higher than Croatia and Romania.

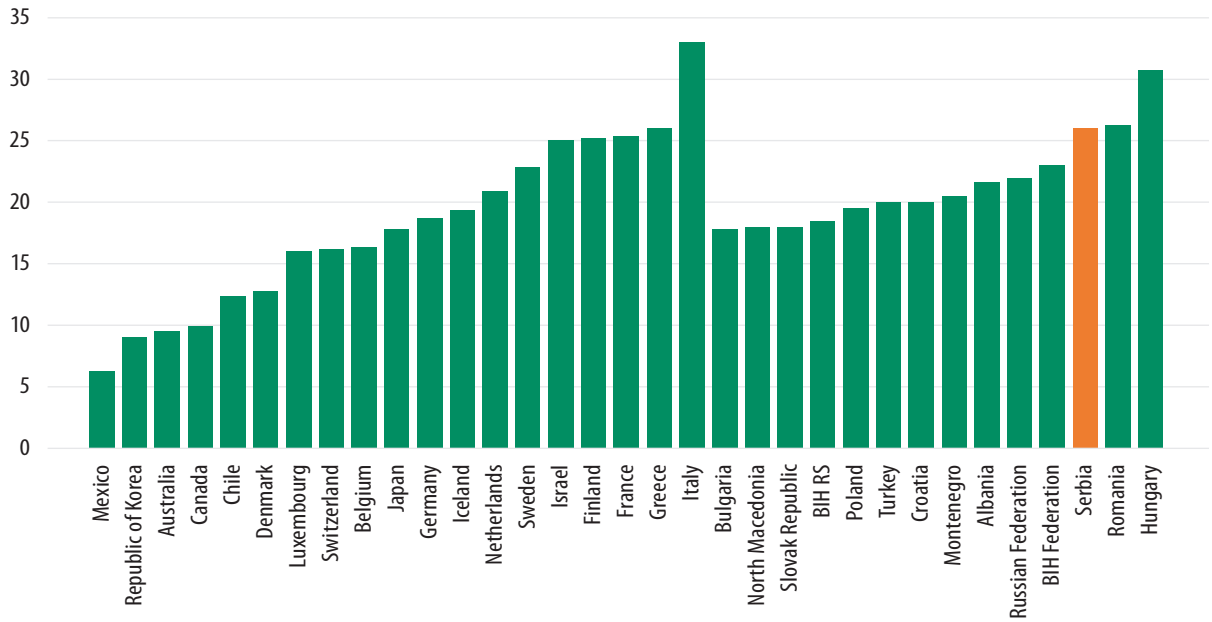
Figure 8. Support ratio (ratio of contributors and pensioners) across EU and Western Balkans countries



Source: EU Ageing Report 2018, PAYG pension agencies in Western Balkans countries

At the same time, Serbia's contribution rate is one of the highest compared with Organisation for Economic Co-operation Development (OECD) and EU member countries. The recent reduction in half of a percentage point to 25.5 per cent would bring it to the same level as observed in France.

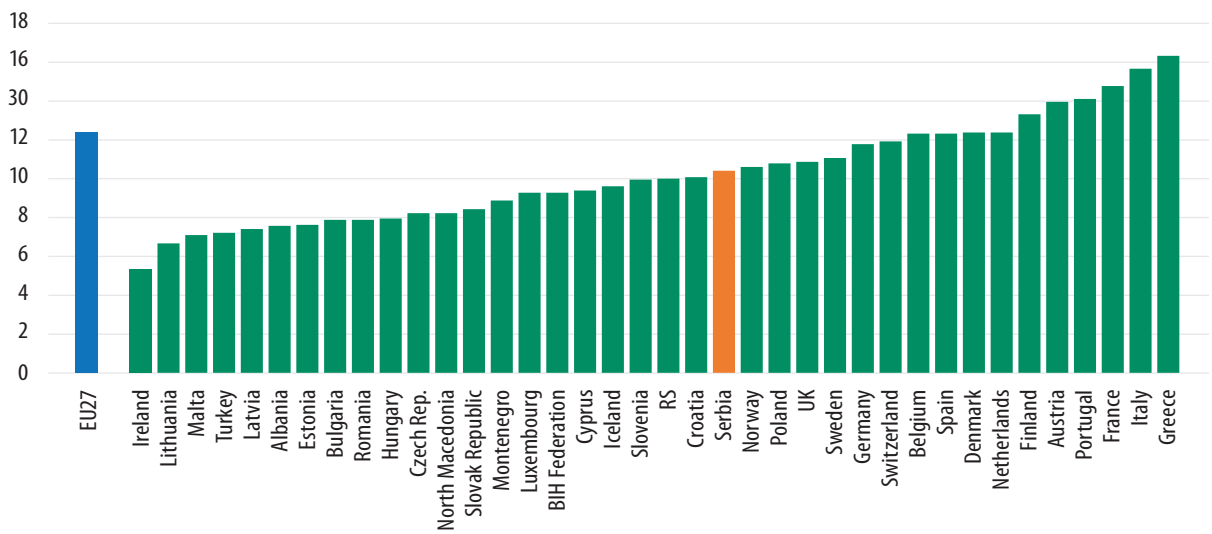
Figure 9. Mandatory pension contribution rates for an average worker in OECD and Europe



Source: OECD, Pensions at a Glance, 2018, pension agencies in Western Balkans countries

Serbia's pension expenditure is the highest among the Western Balkan countries, but it is actually lower than many European countries and falls below the EU average of 12.5 per cent of GDP.

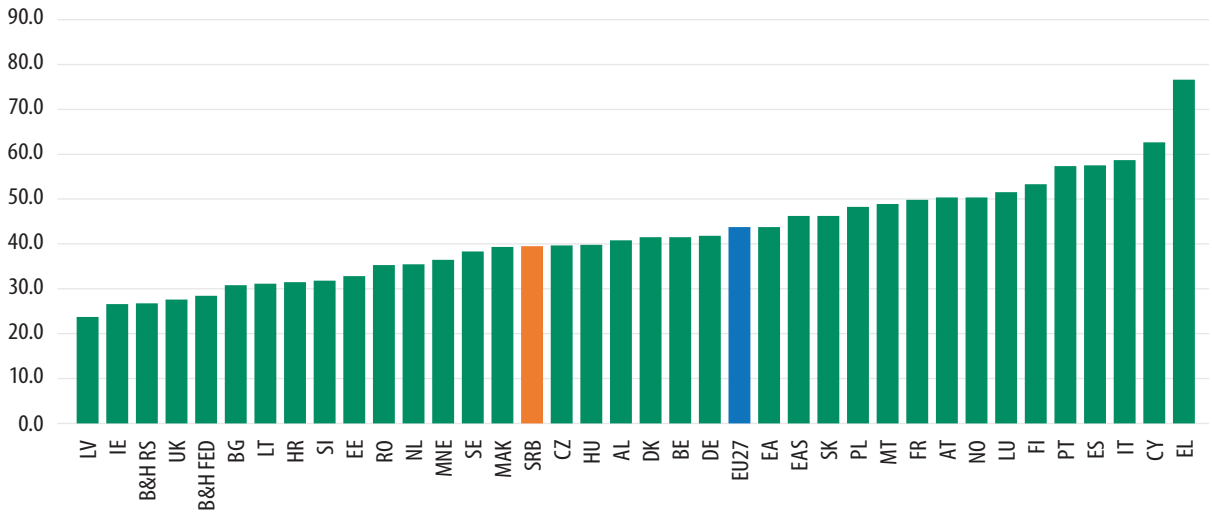
Figure 10. Pension expenditure as percentage of GDP



Source: Eurostat, pension agencies in Western Balkans countries

Benefit adequacy is higher in Serbia than in other Western Balkan countries but still lower than in most European countries and below the EU average, when measured as the ratio between average pensions and average gross wages.

Figure 11. Benefit ratio (average pension/average gross wages)



Source: EU Ageing Report 2018, PAYG pension agencies in Western Balkans countries

4 ADDITIONAL COMPONENTS OF THE PENSION SYSTEM

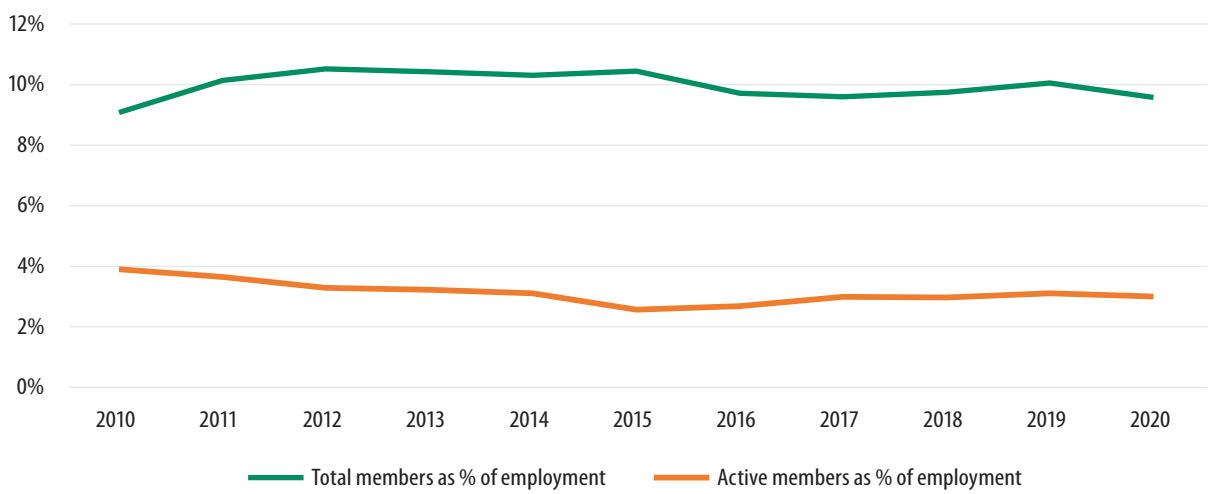
VOLUNTARY PENSION FUNDS

Serbia introduced in 2006 a voluntary pension system based on private provision of defined contributions pension plans. The law established that both occupational and personal pension plans would be managed by private pension fund managers established as separate legal entities supervised by the National Bank of Serbia. Over the years, the system has slowly evolved until reaching a coverage of around 9.8 per cent of employees, with assets under management that are equivalent to 0.85 per cent of GDP.

Voluntary contributions are tax exempt up to RSD 5,984 per employee per month, subject to inflation adjustment. This exemption is equivalent to around 8 per cent of average wages in Serbia. Generally, tax exemptions for voluntary pension plans tend to be regressive, but the flat income tax rate of 10 per cent and the relatively low exemption ceiling limit the regressive impact of this regulation in the case of Serbia. Investment returns are also tax exempt, and withdrawals pay a special tax rate in the case of lump-sums, while the tax is waived if the retiree uses the funds to buy an annuity.

Coverage of voluntary pension plans has remained steady over the past decade. Total members have hovered between 9 and 10 per cent of total employment between 2010 and 2020, while active members (those who paid contributions in the last year) have actually declined from 4 per cent in 2010 to 3 per cent in 2020. This evolution underscores the lack of expansion of the system in Serbia and the challenge of maintaining systematic contributions in contexts of labour mobility and non-zero risks of exiting formal employment.

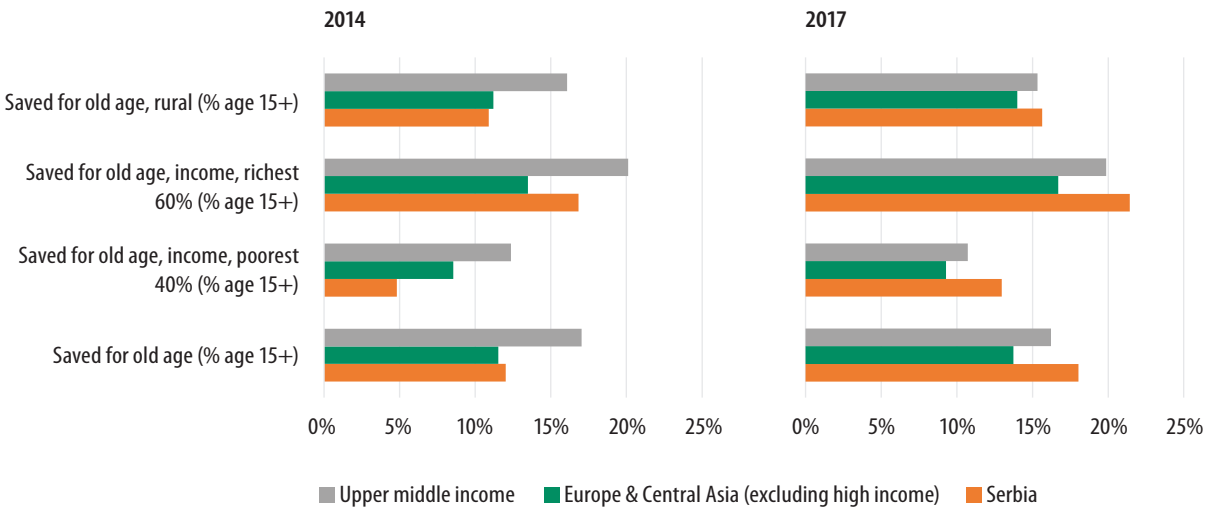
Figure 12. Coverage of voluntary pension plans as percentage of employed population



Source: National Bank of Serbia and Statistical Office of the Republic of Serbia

Given the expected evolution of the PAYG system in Serbia, the country will need to expand coverage of the voluntary pension system to maintain adequate and sustainable sources of income in retirement. Data from Global Findex surveys show that 18 per cent of Serbians aged 15 and older indicate that they save for old age. This might mean that voluntary pension plans are not the only vehicle used for this purpose. This figure is 13 per cent among the poorest 40 per cent of the population and 21 per cent among the richest 60 per cent. These numbers represent a significant increase with respect to the 2014 version of the survey in Serbia. Although these figures are above the average observed in Europe and Central Asia and in upper middle-income countries, the reality in Serbia suggests that even a larger portion of the population, especially among the middle class, should be saving for retirement.

Figure 13. Savings for old age by income and residence, Serbia and selected groups of countries



Source: Global Findex database 2017 & 2014

International evidence suggests that tax incentives are not an effective mechanism to increase participation in retirement savings among the middle class. The groups that tend to be more responsive to tax incentives are high-income individuals, those who face the highest marginal income tax rates and workers closer to retirement.[8] In the case of Serbia, the flat income tax rate and the relatively low exemption ceiling might limit the impact that a tax benefit has on incentivizing retirement savings. Further increases in the exemption ceiling or introducing direct subsidies might generate fiscal costs without much impact on overall retirement savings, due to crowding out effects.

Auto-enrolment and mechanisms that generate a behavioural response from individuals to save have proved an effective way to increase participation in voluntary retirement plans. Occupational plans that allow aggregation of membership across the full spectrum of employees within a firm, simple default option plans that are easy to set up and do not impose significant costs on employers (such as NEST in the United Kingdom) and auto-enrolment of employees into those plans, where they are enrolled by default and have to actively declare that they wish not to participate are some interventions that can significantly increase participation in retirement savings plans without

8 See Carbonnier, Direr and Houti, "Do Savers Respond to Tax Incentives?"

incurring additional costs. The design of these plans can be complemented with additional features that increase participation such as matching contributions, automatic saving increase plans (e.g., Save More Tomorrow) and financial education campaigns among plan members.

Serbia should consider regulatory changes that foster voluntary saving schemes as a complement to the traditional PAYG pensions provided by PIO. The existing regulatory framework has proved insufficient for expanding coverage of voluntary pension schemes. At the same time, current workers will need additional sources of retirement income to supplement pensions provided in the PAYG scheme, given that replacement rates are expected to fall and the financial sustainability of the scheme will continue to be in danger. Analysis on the feasibility of establishing a large-scale low-cost pension provider as an attractive default option for employers, mandating the provision of retirement plans to certain type of employers and implementing auto-enrolment schemes into these plans could be the first steps for Serbia to enhance the retirement income security of middle-income workers.

FARMERS PENSIONS SCHEME

Coverage of farmers

In Serbia, farmers are covered under mandatory social insurance for old age, disability and survival by the Pension and Disability Insurance Fund of the Republic of Serbia (PIO). Insurance is compulsory for the farming household holder or at least one household member, while other household members may get insured under conditions specified by the Law on Pension and Disability Insurance.

Farmers pension insurance is relatively recent in Serbia – it was introduced in 1979, as voluntary. Until then, farmers were not pension insured in any way, but relied, in old age, on intergenerational family solidarity; i.e., the work of their children, their own and, possibly, that of close relatives. Three years later, in 1982, mandatory insurance of associated farmers was introduced; i.e., of those who have worked closely with government and social sector in agriculture, under the so-called associations.

Since 1986, pension insurance for farmers is mandatory, but it is weakly enforced. According to the law, farmers are obliged to register in the pension fund and pay pension contributions, similar to all other pension insured persons (employees and the self-employed). However, farmer participation in pension schemes was low when voluntary, and, in practice, enforcement of the contribution mandate has not been thoroughly implemented by the Government.

Farmers pension insurance was organized, since its creation, as a separate pension fund, but merged into the Republic of Serbia Pension Fund starting in 2008. The farmers pension fund was originally independent from the other two (of the employees and the self-employed). It had its own management board and directors and enjoyed account and financial independence. However, from 1 January 2008, an administratively unique Pension and Disability Insurance Fund functions, and it includes the three previously existing funds. During a three-year transitional period, there were three financial sub-accounts, but from 1 January 2011, the consolidated Fund uses a single account.

Pension contributions from farmers

In practice, farmers pay a flat contribution, although the original intention of the law was to establish contributions that are proportional to income. The original law on contributions stipulated that the insured from the agricultural pension fund pay contributions on the basis on which personal income tax is paid, for income from agricultural activities. However, enforcement of this tax was not implemented in a regular basis. Therefore, the law stipulates that pension contributions should be calculated according to the lowest monthly basis for employees during the previous year. Thus, in practice the pension contribution for farmers is a flat contribution, independent of farmers' income and activities. As a result, the farmers pensions, due to the manner of pension calculation based on the amount of paid contributions, will inevitably be low.

While calculation of contributions based on income has not been feasible, technological improvements and newer methodologies might allow the Government of Serbia to collect proportional contributions from farmers. The lack of enforcement in contributions is in part due to the outdated calculation of cadastral income for income taxes, since it was evaluated decades ago at the time of other agricultural technologies and has never been recalculated. Such a tax basis did not have a close relation with the actual situation for many farmers and was, for taxes, a poor substitute for identification of real income. The Ministry of Agriculture is of the opinion that new technologies and the implementation of an EU methodology (with technical and financial support from the EU) will allow a more accurate and up-to-date calculation of the 'economic strength' of each agricultural household and proposes to use this calculation as a basis for establishing contributions for farmers pension insurance, instead of the flat contribution base currently in effect.

Pension benefits

Although old-age pensions for farmers are calculated in the same manner as for other beneficiaries, in practice 90 per cent of farmers receive the minimum pension. Personal points are calculated per year, realized from the contributions during the pensionable service, and they are multiplied by the value of a general point. However, the mechanism for calculating old age and disability pensions is virtually redundant for the farmers, since the calculations indicate that on their paid minimal base they would receive a pension that is lower than the minimum one, and therefore the minimum pension is applied.

In practice the pension system for farmers is reduced to a flat contribution and flat benefit pension system. Given the amounts of contributions and benefits, it is estimated that 90 per cent of farmers pensions is actually funded by the state subsidy and only 10 per cent is funded by contributions. Therefore, the system is semi-non-contributory instead of contributory.

Challenges and proposals

The pension system for farmers faces two main related challenges: low participation (coverage) and high debt accumulated through a long period of non-compliance of pension contributions by farmers. The Ministry of Agriculture has obtained information from the Tax Administration that details the amounts of debt and characteristics of agricultural households holding that debt. It has prepared a proposal on the feasibility of collecting the outstanding debt and on the reform of pension

contributions from farmers, such that it depends on the economic power of each household and the payment is enforceable.

High contributions debt might not be recoverable. The Tax Administration data show a total of almost US$ 1.5 billion in accumulated debt, more than half of it corresponding to interest accumulated over the period of more than 30 years since inception of the mandatory insurance scheme. This debt corresponds to almost 228,000 households. The Ministry of Agriculture plans to collect part of this debt, from those households that are deemed able to repay, and work out a collection plan based on administrative data.

A new methodology for collecting contributions and enforcing collection would need to be implemented. In addition, the Ministry of Agriculture also proposes to reform the way in which contributions are calculated and collected. In short, the process would entail calculating the economic strength for each agricultural household registered within the PIO. It would then establish a minimum amount of economic strength under which households would be exempted from paying contributions. This amount should be consistent with the minimum contribution base applicable to employees and the self-employed. Households above this minimum threshold would pay contributions as a proportion equal to the contribution rate currently in effect applied to the estimated revenues of the agricultural unit based on its economic strength. Some contribution subsidies might be considered for households in the lower end of the economic strength spectrum and above the minimum threshold.

The implementation of this proposal requires a strong information system that allows inter-operability across different sources of information. The sources of information that should interconnect are, at least, the following:

1. Ministry of Agriculture records containing census of agricultural households.
2. Records containing economic strength estimation for each household.
3. Records of Insured Units from PIO.
4. Tax Administration records and payment systems.
5. CROSO records and system for the collection of contributions.

The implementation of an information system that enables data and information flows across these multiple sources would allow the implementation of the proposed reforms in the collection of contributions for agricultural households. However, it is advisable that such a system is used in a pilot to test the feasibility of the proposed mechanism of determining contributions and to test any alternatives or further features that would be required to successfully implement the system.

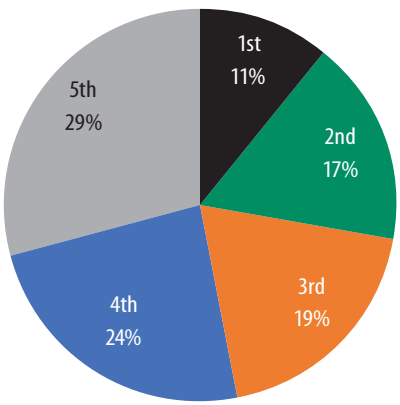
The Serbian Government will need to assess whether the investments in revitalizing the farmers pension scheme are worth it. The farmers pension scheme, with a total of 110,700 covered members and more than 170,000 beneficiaries as of 2019, is in a downward trend in terms of its size. The high level of subsidization in the system may make it not possible to transform back into a fully funded contributory system. In addition, agriculture and farming has lost preponderance in the labour market in Serbia. Employment in agriculture has decreased from 25 per cent in 2008 to 15.6 per cent in 2019.[9] A realistic approach would be to introduce a pilot at a fraction of the cost of the total system revamp to analyse whether the new contribution mechanism would have a significant impact on contributory revenue and coverage of farmers before deciding to implement such a system at full scale.

9 See https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=RS&view=chart

ROLE OF A NON-CONTRIBUTORY PENSION IN SERBIA

The main source of income in retirement in Serbia is contributory pensions, but these are unequally distributed. As expected, given the characteristics of the system, data from 2015 indicate that 12 per cent of benefits go to the poorest 20 per cent of the population, while 29 per cent of benefits are paid to the richest 20 per cent. Despite these figures, pension income still represented 65 per cent of total income in the poorest quintile and 53 per cent of income in the richest quintile in 2015. However, recent trends in the coverage of pensions among old age and their adequacy suggest that these figures might have deteriorated since 2015.

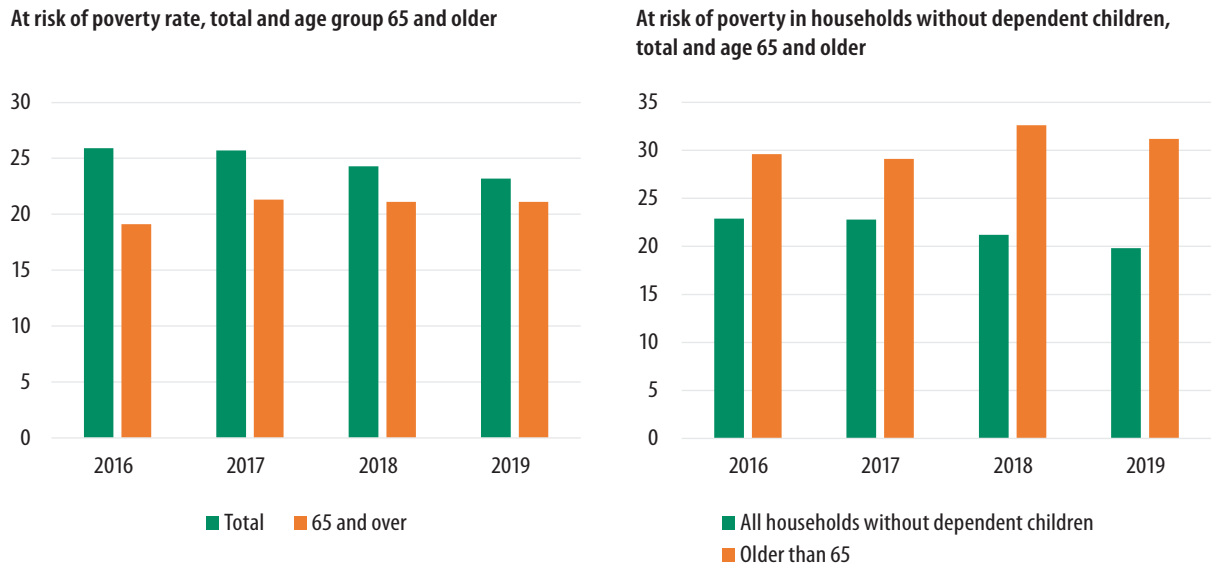
Figure 14. Distribution of contributory pension benefits by income quintile



Source: ASPIRE database

Poverty in old age has increased in Serbia, despite the overall decline in poverty observed in recent years. While the overall 'at-risk of poverty' rate decreased from 25.9 per cent in 2016 to 23.2 per cent in 2019, the same indicator among individuals aged 65 or older increased from 19.1 per cent to 21.1 per cent over the same period. At the same time, while poverty among all households without dependent children declined from 22.9 per cent to 19.8 per cent between 2016 and 2019, poverty in single person households composed of an individual older than 65 increased from 29.6 per cent to 31.2 per cent. Although poverty in old age is still lower than poverty for children in Serbia, its increasing trend in a context of declining overall poverty suggests that current policies are not tackling the risk of poverty in old age in the context of an ageing population.

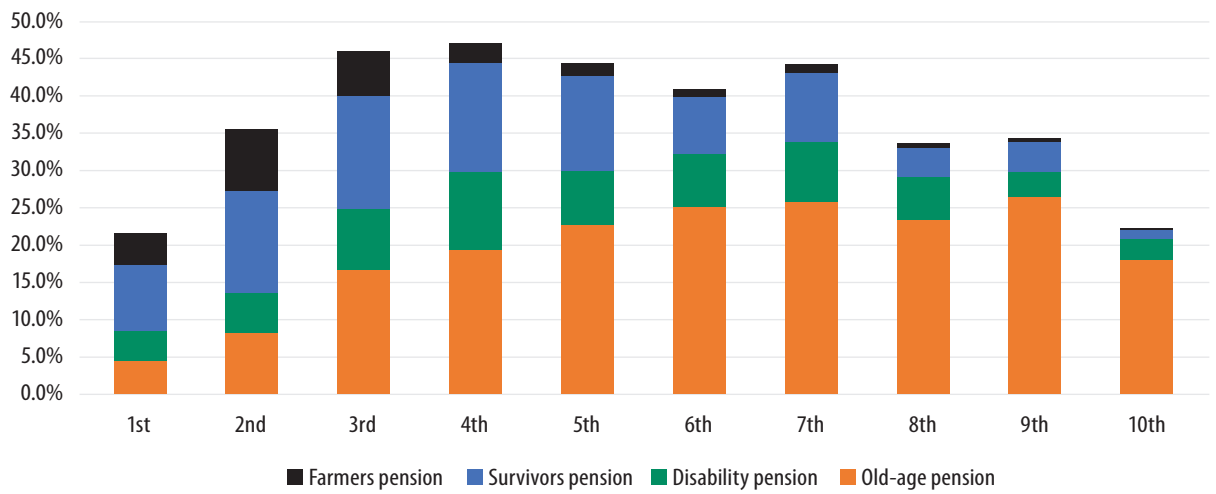
Figure 15. Poverty statistics, older vs general population



Source: SORS, Poverty and Social Inequality, various years

Although farmers pensions are more common in lower income households, their relevance has decreased in recent years. Data from 2012 show that farmers pensions were indeed more concentrated among lower income deciles. However, as we have seen from the administrative data, farmers pensions have declined in terms of coverage and absolute number over the past years, and it is likely that they have become a less relevant source of income for poorer households in the meantime.

Figure 16. Income from pensions by decile and type of benefit



Source: UNDP 2018 using data from SILC 2012

The overall figures showing declining adequacy of pensions and increasing poverty risk in old age indicate that a new tool might be needed to provide retirement income among the relatively

poorer households. The increase in informal employment and in vulnerability to shocks indicate that contributory pensions may not be enough to prevent poverty in old age. Although less common in Eastern Europe, non-contributory pensions have long been used to provide a basic income support in old age and are increasingly being implemented in countries facing high levels of informality and low coverage of their contributory schemes.

A means-tested social pension could be implemented using the existing Financial Social Assistance programme, by including an age-eligibility component. The advantage of this approach would be to make use of the existing infrastructure to register and pay benefits through the local Centres for Social Welfare and the use of existing proxy means test tools. However, this programme might not be adequate to cover the needs of the elderly poor, especially in rural areas. One of the eligibility conditions of the programme is that the household does not own more than 0.5 hectares of land. This requisite in practice includes many agricultural households where older people live but do not make productive use of the land.

An alternative social pension could be designed as a geographically targeted 'rural pension'. Although in Serbia there is no formal classification of urban and rural areas, we can use criteria such as the one presented in Zivanovic and Tosic (2017) to define urban regions in Serbia. These criteria would target the benefit in localities that are not considered urban settlements, leaving out the main urban areas of the country. In addition, to improve the targeting of the benefit, we can use the Serbia Poverty maps to target in those localities that present poverty levels which are higher than a predetermined threshold. An exercise using the 2011 Census data on population by age and municipality shows that targeting a social pension with benefit level equivalent to the current farmers pension to the non-urban municipalities with poverty rates higher than 40 per cent would cover more than 10 per cent of the population 65 and older at a similar cost as the current farmers pension. The estimated cost of different versions of this geographically targeted pension range between 0.07 per cent and 0.55 per cent of GDP in 2020, highlighting the importance of availability of fiscal resources to finance this benefit.

Table 2. Simulation of cost for a geographically targeted social pension, by benefit level and target areas

		Target municipalities		
		>50% poverty rate	>45% poverty rate	>40% poverty rate
	Number of municipalities	14	25	38
	Coverage of 65+ population	2.8%	6.0%	10.5%
Value of benefit (dinars per month)		Annual cost (thousand dinars)		
Half poverty threshold	9,690.5	4,113,733.54	8,678,307.89	15,243,931.74
Current minimum farmers pension	11,881.5	5,043,839.33	10,640,453.56	18,690,550.02
Poverty threshold for single person household	19,381	8,227,467.07	17,356,615.79	30,487,863.48

Source: Simulation based on Census data and SORS Poverty Maps

A geographically targeted old age benefit would be simpler to administer but could be subject to political pressures. Many social pensions that started with tight demographic and geographic targeting over time expanded coverage and benefit amounts[10] to end up being a quasi-universal benefit. This expansion has fiscal implications that can be relevant for a country like Serbia. As such, the programme should be subject to tight budget constraints, medium- and long-term financial planning and strict rules to change its parameters. The advantage of geographic targeting is that a proxy means test is not necessary and the benefit becomes universal for old age within the target municipalities.

10 This happened to the rural pension in Mexico, which ended up as a universal pension benefit for 65 and older; or the social pension in Panama, which started providing US$ 100 to all citizens 70 and older to end up providing US$ 120 to those 65 and older. See Rofman, Apella and Vezza (2015).

5 CONCLUSIONS

The economic landscape has evolved in Serbia in the last decade, but the pension system has not adapted accordingly. An ageing population along with increased informal employment will require additional sources of income security than the current pension system in Serbia can provide. Despite the recent favourable trend in system finances, pension benefits have declined in adequacy and that decline is expected to continue. In addition, coverage both at the higher and the lower end of the income distribution is expected to decline, as well as coverage of benefits in old age.

The contributory pension system can maintain its design but will need to adapt its parameters and permanently rely on budget transfers to cover its deficits. It is estimated that the equilibrium contribution rate for the system will be above the effective contribution rate for the foreseeable future, given the increase in the dependency ratio as a result of population ageing. The formula used to valorize wages could be decoupled from the indexation rule in order to increase adequacy of benefits with little effect on fiscal costs. The current Swiss formula could be decomposed in using average wage growth for the valorization of wages and prices for the indexation of pensions in payment. That way, benefits would more closely reflect the career average earnings and pensions would maintain their purchasing power during retirement.

Middle- and higher-income workers would need supplemental sources of income to achieve adequate retirement benefits. Voluntary pension plans are underdeveloped in Serbia. Given the tax structure in the country, tax benefits are unlikely to provide sufficient incentives to expand their coverage. Measures such as auto-enrolment and the provision of a clear and well-regulated default option for contributors could significantly increase participation in voluntary pension plans at little additional cost to the Government.[11]

Serbia could consider introducing a social pension to reduce the risk of poverty in old age. The current farmers pension operates in practice as a quasi-social pension given that contributions only cover 10 per cent of the cost of benefits and almost all beneficiaries receive the minimum benefit. However, this is a suboptimal design and coverage has decreased over time. An alternative to introducing an age eligibility component in the Financial Social Assistance programme would be to provide a benefit targeted to geographic areas that are rural (non-urban) and concentrate high poverty levels. This benefit could also replace the current farmers pension, providing a better instrument to prevent old age poverty in rural areas. In addition, this would be a more redistributive use of public resources than the general budget transfers used to cover the deficits in the contributory pension scheme.

11 See, for example, Bouchal and Norris (2014) for the experience of NEST in the United Kingdom.

REFERENCES

Bouchal, Petr, and Emma Norris, *Implementing Automatic Enrolment into Pensions*, Institute for Government, London, 2014.

Rofman, Rafael, Ignacio Apella and Evelyn Vezza, *Beyond Contributory Pensions: Fourteen Experiences with Coverage Expansion in Latin America,* Directions in Development--Human Development, World Bank, Washington, DC, 2015.

Statistical Office of the Republic of Serbia, *2011 Census of Population, Households and Dwellings in the Republic of Serbia*, SORS, Belgrade, 2011.

Statistical Office of the Republic of Serbia, *Poverty and Social Inequality*, SORS, Belgrade, (various years).

Statistical Office of the Republic of Serbia and World Bank, *Poverty Map of Serbia*, SORS and World Bank, Belgrade, 2016.

United Nations Development Programme, *Human Development Paper on Income Inequality in the Republic of Serbia*, UNDP, Belgrade, 2018.

United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects 2019*, UN, New York, 2019.

World Bank and The Vienna Institute for International Economic Studies (wiiw), *Western Balkans Labor Market Trends 2019*, World Bank and wiiw, Washington, DC, 2019.

Zivanovic, Zora, and Branka Tosic, 'Defining urban regions in Serbia', *Geographica Pannonica*, vol. 21, no. 2, June 2017, pp. 85–95.

ANNEX PAY AS YOU GO FORMULA

In a pure Pay as You Go system, total revenues should equal total expenditures. Revenues come from workers' contributions, while expenditures are given by benefits paid. Thus, for the system to be in balance, the following equivalence has to hold:

$$c * \overline{w} * L = \overline{b} * R$$

Where:

$c = Contribution\ rate\ (in\ \%)$

$\overline{w} = Average\ wage$

$L = Total\ number\ of\ contributors\ (formal\ employment)$

$\overline{b} = Average\ pension\ (benefits)$

$R = Number\ of\ pensioners\ (retirees\ or\ beneficiaries)$

We can reformulate in terms of the needed contribution rate to pay a desired replacement rate:

$$c = \frac{\overline{b}}{\overline{w}} * \frac{R}{L}$$

$\frac{\overline{b}}{\overline{w}} = Average\ replacement\ rate$

$\frac{R}{L} = Dependency\ ratio$

Therefore, the needed contribution rate is a function of the target replacement rate and the dependency ratio of the system.

$$c = Average\ replacement\ rate * Dependency\ ratio$$

We can further decompose the variables in this formula to get to an expression that depends on the demographic dependency ratio and the employment rate of the working age population, using the following definitions:

$$Beneficiary\ Coverage = \frac{R}{Pop65_+};\ Contributory\ Coverage = \frac{L}{WAP};$$

$$Demographic\ Dependency\ Ratio = \frac{Pop65_+}{WAP}$$

Where Pop65+ is the total population 65 and older, and WAP is the working age population, generally between 15 and 64 years of age.

Then:

$$c = Average\ replacement\ rate * \frac{Beneficiary\ Coverage}{Contributory\ Coverage} * Demographic\ Dependency\ Ratio$$

The advantage of this expression is that projections for the demographic dependency ratios are available for most countries based on United Nations Population Division. The average replacement rate can be treated as a target for the system and different assumptions can be made about the evolution of beneficiary and contributory coverage, which tend to be relatively stable and are usually interrelated (a decline in contributory coverage will likely result in a decrease in beneficiary coverage in the future).

THE SERBIAN PENSION SYSTEM