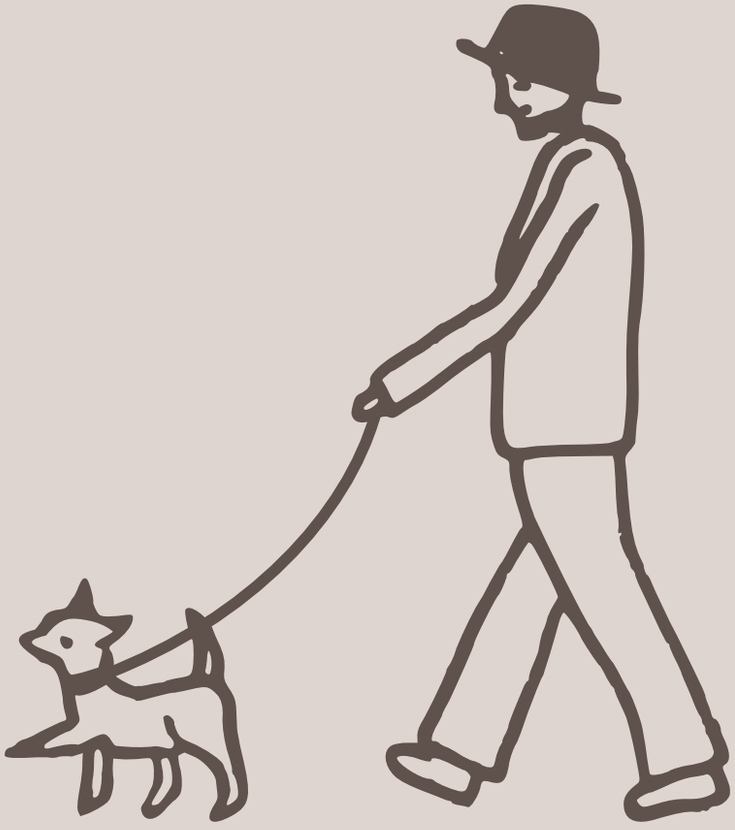

CHAPTER 7

Population Ageing

Gordana Matković

1 Key Demographic and Economic Consequences of Population Ageing

Population ageing is a key demographic feature of early 21st century Serbia and one of the major challenges in the context of depopulation. Longer participation in the workforce will certainly contribute to a solution, assuming a sufficient supply of jobs, healthy ageing and greater investment in the skills of older persons. In the short term, tackling the risks and effects of ageing will involve an appropriate pension policy, the development of a long-term care system and the reduction of extreme poverty among old persons.[116]

According to 2019 data, Serbia had approximately 1.4 million people aged 65 and over (20.7%), of whom over 320 thousand were the oldest-old (80+) (4.6%). The older population was predominantly female, with a share of about 60% and rising in the oldest age groups.

Population ageing is becoming increasingly pronounced over time. According to the first post-war census of 1948, the share of the older population[117] was three and a half times lower than today (5.6%). Projections show that demographic ageing is set to intensify in the future and that the ageing of the older population will continue. Under the given assumptions (medium-variant), in 2041, the share of older persons (65+) will exceed 24%, and that of the oldest-old (80+) will rise to 7.5% (Table 1). Long-term projections, until 2100, show, however, that this upward trend can be slowed down and even stopped, depending on the assumptions about the determinants of population change, especially migration.[118]

The share of older people (65+) in Serbia is slightly above the EU average, while the share of the oldest-old (80+) is below average. The lower ranking according to the latter indicator is a result of a larger difference in the oldest-old mortality compared to EU countries and the specificity of the age waves in Serbia (Stojilković Gnjatović &Devedžić, 2020).

According to 2019 estimates, the share of the older population was above the national average in two thirds of Serbia's municipalities. In fewer than ten municipalities, mainly small ones in eastern and southern Serbia, the share of older persons exceeds 30% (municipalities of Babušnica, Crna Trava, Gadžin Han, Knjaževac, Kučevo, Ražanj, Rekovac, Svrljig, Žagubica) (RZS, 2021a). All are in development tier 4, i.e. the least developed local governments in Serbia. Large differences are also noticeable at the district and regional level, which is reflected in the sub-national human development index.[119]

	2002	2011	2019	2041
Median age	40.5	42.5	43.7	44.8
Older persons, 65+	1,240,505	1,247,876	1,436,930	1,644,912
Share in total population (%)	16.6	17.3	20.7	24.1
Share of women (%)	57.7	57.9	57.1	57.5
Oldest-old, 80+	145,477	252,087	321,333	511,175
Share in total population (%)	1.9	3.5	4.6	7.5
Share of women (%)	63.3	63.1	61.8	64.3
Old-age dependency ratio (3rd variant* (%)	27.3	27.4	33.9	42.3

Table 1. Serbia population ageing indicators, 2011 and 2019, and projections for 2041, medium fertility variant

Source: RZS (2021), RZS (2003), Eurostat, code demo_pjanind
Note: Old-age dependency ratio 3rd variant - population 65 years or over to population 20 to 64 years

Quite rightly, the definition of population ageing based on a fixed age threshold has been challenged in recent years. Hence, new indicators have been developed, such as the prospective proportion old and the prospective old-age dependency ratio, based on the measure of remaining life expectancy (Sanderson & Scherbov, 2008). Under this concept, old persons are those whose life expectancy is below 15 years (prospective threshold). The United Nations has also started monitoring indicators based on the prospective threshold in its publications on population ageing.[120]

If this concept were applied to Serbia's past situation, ageing would be even more pronounced (Devedžić & Stojilković, 2012), but future prospects are more optimistic. Based on Sanderson & Scherbov (2015), Serbia's proportion of older persons with a life expectancy

[116] Among other issues outside the scope of this chapter are numerous social concerns that intensify with ageing, such as ageism, social participation of the older population, domestic violence and abuse, etc.

[117] For the purposes of this report, the older population is defined as the population aged 65 and over.

[118] For more details see Arandarenko, 2021.

[119] For more details, see Arandarenko, 2021.

[120] See, for instance, United Nations Department of Economic and Social Affairs, Population Division, 2020:15.

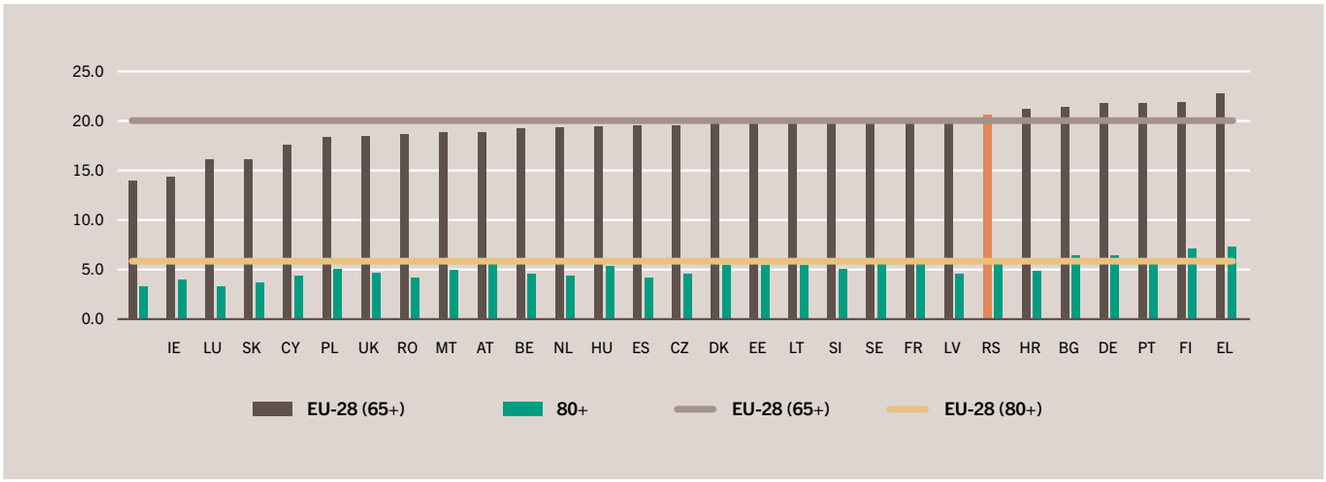

Figure 1. Share of persons aged 65+ and 80+ in total population, Serbia and EU-28, 2019

Source: Eurostat, code demo_pjanind

below 15 years can be estimated at between 19 and 21.3% in 2041, depending on the scenario.[121]

Population ageing in Serbia is primarily due to fertility decline (ageing from the population pyramid base) (Penev, 2015: 139; Devedžić & Stojilković Gnjatović 2015: 24). The total fertility rate declined from 3.13 in 1950 to only 1.52 in 2019. Unlike fertility decline, which has a long-lasting, yet temporary impact on the age structure, increases in longevity bring permanent change (Bussolo, Koettl & Sinnott, 2015).

Reduced elderly mortality, which has substantially affected the ageing process in developed countries, has been of lesser importance in Serbia in recent years. In 2019, life expectancy at 65 reached 14.8 years for men and 17.3 for women (Table 2). Unlike life expectancy at birth, which recorded a steady rise in Serbia, life expectancy at 65 virtually stagnated in the second half of the 20th century (Devedžić & Stojilković Gnjatović 2015), and reversible processes were even registered in 1990s (Radivojević, 2002).

Life expectancy of older persons in Serbia is below the EU-28 average, especially for women, who record lower values than in any EU

	2002	2011	2019
Men	12.8	13.9	14.8
Women	14.9	16.3	17.3

Table 2. Life expectancy at age 65 in Serbia, 2002, 2011 and 2019

Source: Eurostat, code demo_mlexpec

Figure 2. Life expectancy at age 65 for women and men, Serbia and EU-28, 2018

Source: Eurostat, code demo_mlexpec

121 Sanderson & Scherbov (2015), data taken from S2 Table. Proportions Old (both sexes combined. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4398478/

Figure 3. Healthy life expectancy (HALE) at birth (years), Serbia and EU-28, 2019.

Source: WHO Database

country. For men, values somewhat below Serbia's were recorded in 2018 in Lithuania, Bulgaria, Latvia and Hungary (between 14.1 and 14.6 years) (Figure 2). According to Eurostat data, most EU countries recorded a significant decline in life expectancy at 65 in 2020, as well as life expectancy at birth, owing to the COVID-19 pandemic (Eurostat, 2021).

Migration also contributed to population ageing in Serbia, albeit to a lesser extent (Penev, 2015; Nikitović, 2019).[122] During the 1990s, over 320 thousand people, predominantly those younger and better educated, left the country (Penev, 2006). Emigration continued in the following years as well. According to the estimates, about 60 thousand people left between the population censuses of 2002 and 2011 (Penev, 2015:141).

Ageing is associated with extending not only healthy life years, but also life years with disability. A slower increase in health-adjusted life expectancy (HALE)[123] than an increase in life expectancy, indicating more years spent in poor health, is particularly relevant for long-term care policies and health care expenditures. According to WHO (2021) data, in Serbia in 2019, health-adjusted life expectancy at birth stood at 65 years for men and 68 for women – between 8 and 10 years below life expectancy. HALE for women is lower in Serbia than in any EU country, while for men it is among the lowest (Figure 3). Further in-

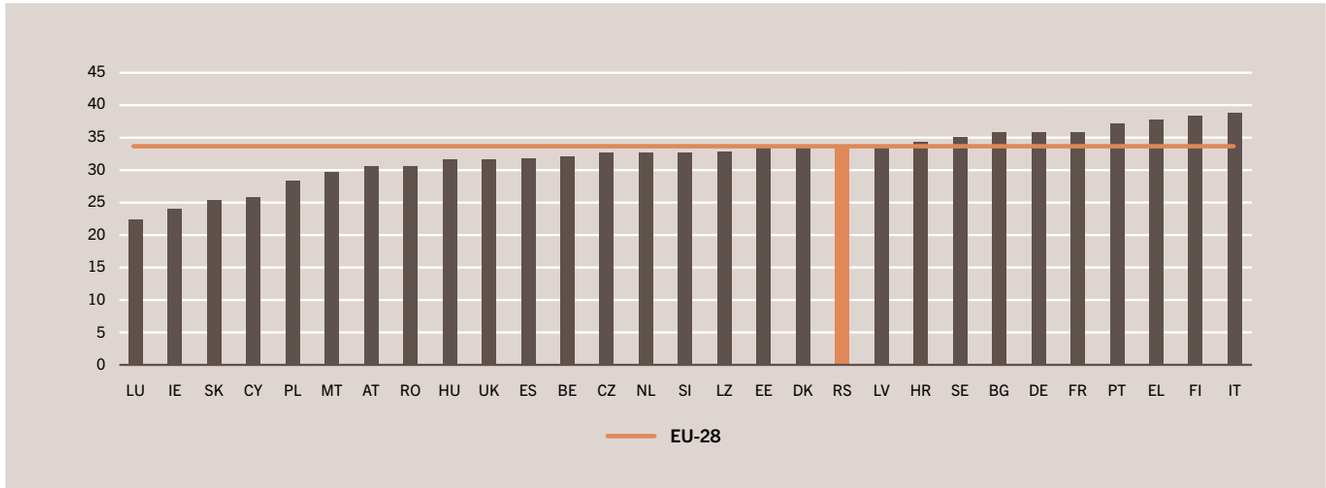

Figure 4. Old-age dependency ratio, Serbia and EU-28, 2019

Source: Eurostat, code demo_pjanind

[122] See also Arandarenko, 2021.

[123] WHO definition: Average number of years that a person can expect to live in 'full health' by taking into account years lived in less than full health due to disease and/or injury.

creases in HALE are essential not only to ensure the sustainability of health expenditures, but also to improve the quality of life.

Ageing also led to a rise in the old-age dependency ratio, which shows the number of old people (65+) per 100 working-age people (20–64) and, in fact, indicates the country's potential to face the economic con- sequences of ageing. According to 2019 data, this ratio stood at 33.9% in Serbia and corresponded to the EU-28 average (33.8%) (Figure 4). The dependency ratio has grown over time and, based on population projections, is expected to reach a remarkably high 42.3% in 2041 (Table 1).

Serbia's prospective old-age dependency ratio suggests a lower 'burden' on the labour force. It is the ratio of old people with a life expectancy below 15 years to the population aged between 20 and the prospective threshold. Serbia's prospective threshold in 2041 is estimated at 68 years,[124] and the prospective old-age dependency ratio – at 31.0%.[125] This is more than 10 percentage points below the conventional old-age dependency ratio (Table 1) indicating a more successful response to the consequences of population ageing.[126]

The economic consequences of ageing are analysed in the context of rising consumption and declining savings in the later stages of the life cycle, shrinking and ageing of the labour force and potential deceleration of labour productivity growth. Another area in focus is public finance sustainability.

The empirical findings on the impact of ageing on economic growth are not conclusive. Bloom et al. (2011) show that the negative 'accounting' effects of population ageing on growth owing to life-cycle differences in consumption, savings and economic activity may be compensated for by taking into account behavioural changes – longer working lifespans owing to improved health conditions, increase in savings for old age and investment in human capital. Additional emphasis is placed on policies to encourage behavioural change, as well as promotion of immigration.

Using the OLG model,[127] Bussolo, Koettl & Sinnott (2015) show that reduced fertility entails a shrinking population and smaller output, while increased longevity results in a larger population and larger economy, with both scenarios having a medium-term positive impact on GDP per capita, which returns to the steady state in the long term.

Lee & Mason (2006) argue that population ageing allows space for the 'second demographic dividend', as a result of incentives to ensure substantial accumulation of assets with a view to security in old age.[128] According to some authors, if older persons rely on public transfers, the positive effect of the second demographic dividend will be negligible. This is the case in most EU countries (Prskawetz & Sambt, 2014:966). Nicholas Barr, on the other hand, points out that the issue of the sector (public versus private), and even pension design (PAYG versus funding) is not decisive. Increased output and good governance are crucial, as are human capital investment policies and increased labor supply (Barr, 2021).

In ageing populations, there is certainly a window for raising the human capital of the smaller young age groups, thus enabling a rise in productivity and welfare per capita (Bussolo, Koettl & Sinnott, 2015). Research findings on the overall impact of ageing on labour productivity are mixed and vary by occupations and sectors, as well as country-specific circumstances (Bussolo, Koettl & Sinnott, 2015). IMF simulations indicate that between 2020 and 2050, as a result of labour force ageing, the average annual reduction in total factor productivity growth in Serbia could amount to 0.34, which corresponds to the Western European countries' average (Batog, et al., 2019).

Empirical data support the theses about a possible activity rate increase due to women's higher labour market participation, increase in older generations' employment rates and longer working lifespans. Ambitious reforms could limit Serbia's labour force decline to only a few percent by 2050 (Batog, et al., 2019).

According to IMF simulations, population ageing would have the effect of decelerating GDP per capita growth rates across the CESEE region by 0.6% per year until 2050.[129] Using the complex EEUMOD model, the report assesses that, with regard to the impact of demographic shifts on GDP, 'South-eastern Europe and Serbia would be the least affected, as their outlooks for labor supply, TFP,[130] and fiscal balances are not as bad as those for the rest of the CESEE region'(Batog, et al., 2019:50).

Consequences in the domain of public finance sustainability are assessed in the context of the impact of ageing on public revenues, but with an even stronger focus on public expenditures. The concern that the growing share of older persons drives an unsustainable increase in demand for public services and social transfers prevails in a significant proportion of research and policy papers, starting from the notable World Bank report on averting the old-age crisis (World Bank, 1994). It is also argued that an ageing electorate can further exacerbate public finance unsustainability, although empirical research into voter preferences by age profile is limited (Bogetić, et al., 2015). Simultaneously, solutions are sought in adjusting the systems that potentially bear the brunt of ageing. Hence, consideration of reform options in the areas of pensions and long-term care, as well as old-age poverty reduction instruments, is crucial in Serbia as well.

[124] Sanderson, WC & Scherbov, S. (2015a). Table 1 ReAging1_v2.1 from the International Institute for Applied Systems Analysis (IIASA) website.

[125] Based on the population projections of RZS (2021).

[126] Serbia's participation in longitudinal research such as the Generations & Gender Program and the Survey of Health, Aging and Retirement in Europe (SHARE) would be of particular importance for policy formulation and better understanding the consequences of aging.

[127] The 'Overlapping generations (OLG) model mimics an economy in which multiple generations, at different stages of their life cycle, contribute to economic activity by supplying labour, saving, and investing and also interact with firms and government.' (Bussolo, Koettl & Sinnott, 2015: 151).

[128] See also more recent research, e.g. Lee & Mason (2010).

[129] The CESEE region includes Central, Eastern and South-Eastern European countries.

[130] TFP – total factor productivity, refers to the productivity of all inputs taken together.

2 Pensions

Population ageing and high public expenditure on pensions, comprising the largest single expenditure item within the social sector, prompted numerous public pension system reforms in developed countries. Reforms are predominantly geared towards reducing pension generosity in relative terms, strengthening the link between benefit amounts and pre-retirement earnings, restricting early retirement options and promoting postponement of labour market exit as far as possible. Introducing an automatic balancing mechanism, sustainability factor, or automatic link between the retirement age and life expectancy is considered an especially relevant aspect of such reforms. Although public schemes continue to provide the vast majority of pension income, there is a discernible trend towards privatisation and the rising importance of providing part of pensions within the private sector. Since 2015, measures to improve pension adequacy have gained relevance in the EU (OECD, 2019; European Commission, 2018; Carone et al., 2016). During the COVID-19 crisis, the focus of interventions has been on the reduction of contributions or exemption from the payment thereof for specific insured categories, additional investments in pension funds and benefit increases, especially for the more vulnerable pensioners (Natali, 2020).

In the EU, reforms are deemed to have ensured system stabilisation, accompanied by sustaining the ratio of public pension expenditure to the GDP at the same level by 2070, partly at the expense of decreasing relative benefit amounts, which raises the issue of their adequacy, especially in some countries (EPC-SPC, 2020).

2.1 Outline of the Serbian system

The Serbian pension system comprises mandatory pay-as-you-go (PAYG) pension and disability insurance (PDI) and voluntary private pension insurance. The total number of old-age, disability and survivor pensioners in the public sector has reached almost 1.7 million, or over 24% of the total population. The ratio of pension expenditure to GDP stood at approximately 10.1% in 2019 and was below the EU- 28 average (12.4% in 2018) (Eurostat, code spr_exp_pens).

Finance for pensions and other entitlements under PDI is provided from the budget as well, to cover the deficit and fulfill the legal obligations (benefit top-up to the minimum pension level, accelerated benefits, etc.). The amount of budget funds required decreased over time and stood at 3% of the GDP in 2019, i.e. about 25% of the total revenues of the Fund (PIO; 2019) (VRS, 2018). The PDI contribution rate is 25.5%, which is relatively high, but is not directly internationally comparable owing to differences in system design, in entitlements covered from these funds in different countries, and in the level of funds secured from the national budget.[131]

Pension adequacy in Serbia is on the decline. According to 2019 data, the net replacement rate stood at 61.3% (Matković & Stanić, 2020), and the aggregate replacement ratio at 42% (the respective EU-28 values exceed 63% and 57%) (OECD, 2021; Eurostat, code ilc_pnp3).[132] The number of insured persons per 100 pensioners is only 130, significantly below the EU-28 average (169) (PIO, 2020) (European Commission, 2018). Such a low rate is not mainly the result of demographic aging. Compared to more developed countries, Serbia has considerable space to improve the insured-to-pensioner ratio, given the low employment rate and widespread informal economy (VRS, 2018). An IMF report places Serbia among countries with substantial scope for increasing the labour force participation rate and argues that, if policies geared toward that end were implemented, the public pension expenditure would be curbed (Batog et al., 2019:20-26).

2.2 Options for further parametric changes

2.2.1 Pension and general point indexation

In Serbia, pensions are currently indexed to wages and prices according to the 'Swiss formula'.[133] Most EU countries also apply some combination of these two parameters in pension indexation, with greater weight assigned to prices (European Commission, 2018). In contribution-based pension schemes, indexation to wages is an exception, and even when applied, it is linked to sustainability factors (Hohnerlein, 2019: 253). A number of countries opt for indexation to prices only, with an additional increase if GDP growth exceeds a certain level (Hungary, Portugal). In the constant search for a balance between sustainability and adequacy, frequent changes in indexation parameters, both in Serbia and in Europe, are the rule rather than the exception.[134]

A distinctive feature of Serbia's system is equal modalities of pre-retirement earnings valorisation[135] i.e. indexation of general

[131] Budget subsidies are often present, and in some countries tripartite funding is mandated by law. The data on contribution levels in EU countries are available in the European Commission's Ageing Reports (European Commission, 2018:51,61).

[132] Net replacement rate - benefit in the first year of retirement divided by pre-retirement income for a single person with a 40-year career with constant average earnings (base case). 'The aggregate replacement ratio is gross median individual pension income of the population aged 65–74 relative to gross median individual earnings from work of the population aged 50–59, excluding other social benefits' (Eurostat, 2011).

[133] 'Indexation refers to the policy for the up-rating of pensions in payment from the point of claim of the pension benefit onwards.' (OECD, 2005: 34). According to this formula, wages and prices carry equal weights – 50:50. Serbia's pension indexation modality was modified frequently in the past 20 years (Matković & Stanić, 2020).

[134] For details on the changes in the pension indexation in Serbia, see Matković and Stanić, 2020.

[135] 'Valorisation: the adjustment of past earnings to account for changes in living standards between the time when pension rights are earned and when they are claimed.' (OECD, 2005:17).

point and pension indexation, found in only a few EU countries (Germany, Croatia and Romania until 2030, are among those with point systems). In general, in most countries, valorisation is predominantly or solely tied to wage growth, while pension indexation is predominantly tied to prices (European Commission, 2018). In addition, Germany includes a sustainability factor, whereby point value uprating is also dependent on the ratio of pensioners to contributors (Boulhol, 2019).

The decision not to introduce separate indexation parameters, taken in Serbia in 2003, resulted from the finding that, under the conditions of rapid wage growth, the indexation of the general point value to wages, and of pensions to prices would lead to wide disparities in pension levels for pensioners with equal work histories.[136]

The decrease of the net replacement rate in Serbia and the fact that the economy is better managed than it was in the initial years of transition point to the need to review this arrangement. In case of a separation whereby the valorisation formula would assign a higher weight to wages, while the pension indexation formula would assign a higher weight to prices, "new" pensioners would have higher replacement rates. Essentially, their living standard deterioration immediately upon retirement would thus be less pronounced, while later on, benefit amounts would grow more slowly, but would allow maintenance of the real pension value and the standard enjoyed during their working life. It should, however, be noted that, in the recent past, Serbia's average wage growth was still high in some years (the real wage index stood at 8.4 and 7.8% in 2019 and 2020, respectively) (RZS, 2021b). The volatile nature of average wage growth calls for caution and suggests that, if implemented, the separation of valorisation and indexation parameters should not be drastic (the former to wages only, and the latter to prices only) to avoid creating wide disparities in pension levels between old and new pensioners.

An additional possibility to be considered is abandoning the average wage criterion and relying on the wage bill as a parameter, which accounts for employment development as well, thus better reflecting any impact of population ageing on the labour market. Owing to differences in contributions paid in Serbia depending on type of employment, the contributions bill may, in fact, be an even better choice. As both Serbia's wage bill and contributions bill may grow independently of productivity growth, it also makes sense to include the GDP growth rate, in particular as a trigger governing the application of one indexation parameter or the other. GDP is currently taken into account only in terms of indicating the desirable share of pension expenditures (11%). The parameter of price index could also be reviewed in terms of identifying a consumer basket more relevant from the aspect of pensioners' living standards. These options should be explored further, together with an assessment of their impact on both fiscal sustainability and pension adequacy.

2.2.2 Retirement age and effective retirement age

An obvious solution to ensure both adequate pensions and system sustainability in the face of population ageing is longer working lifespan. Serbia's legal retirement age, which currently stands at 65 years for men and 63 for women, is not low in comparative terms (EPC-SPC, 2020:11), especially given that life expectancy at 65 in Serbia lags behind the EU average. It should be stressed that several EU countries have already opted for further gradual increases of this threshold; however, these changes are assessed as insufficient to compensate for life expectancy gains among old persons in the long run (EPC-SPC, 2020:4).

In present-day Serbia, it is worth reflecting on retirement age provisions primarily in the context of a possible automatic link to life expectancy gains. Eight EU-28 countries have already included such provisions in their systems (EPC-SPC, 2020:13). The advantage of automatic rules stems from the fact that discretionary decisions to raise the retirement age tend to be politically unpopular. On the other hand, the absence of social dialogue and even the undemocratic character of such rules are inevitably highlighted as disadvantages (OECD, 2019). In the post-COVID world, the introduction of automatic links may need to be re-evaluated.

An alternative to an automatic link is a strategic commitment to define indicators whose change would trigger a review of the current retirement age. Besides life expectancy gains for older persons, healthy life years, older workers' disability and health status, proportion of workers in physically demanding jobs etc. should be taken into consideration. The review should include an impact assessment of raising the retirement age on different groups of employees, in view of life expectancy differences between men and women, as well as any differences between high and low-income earners etc.[137] If an automatic rule is to be introduced, it is also necessary to specify the relationship most appropriate in our circumstances. In some countries, for each year of life expectancy gains for older persons (65), the retirement age is raised by one year, and in some – by less (e.g. 2/3 of a year).

It must, however, be emphasised that nothing is achieved by constantly raising the (statutory) retirement age if early retirement options remain available, including through accelerated or disability pensions. In Serbia, in 2019, despite reforms aimed at reducing early retirement, new old-age pensioners' average length of pensionable service stood at 32 years for men and 30 years for women, below the EU average (PIO, 2019)((EPC-SPC, 2020:12). One out of seven new pensioners benefit from the early retirement option. Both sexes' effective retirement age reached 63.8 years (old-age pensions, all categories), but remained substantially lower for military pensioners, at only about 56 years.[138]

[136] In 2008, a person with lifetime earnings three times higher than average who retired in 2003 would receive pension equal to 48,700 dinars, while a person with the same work history who retired in 2008 would receive pension equal to 77,300 RSD (Stanić, 2010:33).

[137] Raising the retirement age may be regressive if low earners live shorter lives, although these effects are not large (OECD, 2017:163). Only data on old (65) life expectancy by education level are available for Serbia, showing that there are no differences between those with highest and lowest education levels, but that life expectancy is shorter for people with secondary education (Eurostat, code demo_mlexpecedu).

[138] Ministry of Labour data, 2021.

Pension benefit reduction on account of early retirement is fully justified, since, under the same conditions, individuals retiring before reaching the retirement age will, in theory, receive pensions longer. 'Penalties', however, raise the issue of fairness if those who started working at a younger age live shorter. It is also worth noting that individuals may value retirement despite penalties – the 'personal discount rate may exceed the rate of actuarial adjustment' (Barr & Diamond, 2006:27). Employers may also request workers who have fulfilled at least one retirement requirement to retire owing to their lower productivity or outdated knowledge and skills in the context of implementing new technologies; the demand for the older labour force may also be low, leaving workers with no other option except to retire as soon as possible. Retirement may also be due to health reasons that persist but are not severe enough to qualify for a disability pension. Under these conditions, penalties result in low pensions, which may lead to poverty in old age. It is also worth noting that raising the retirement age, as well as closing off early retirement pathways may lead to a rise in the number of disability pensioners. A certainly unacceptable arrangement in the existing system is that accelerated benefits, which constitute a major pathway to retiring (too) early, are not subject to penalties.

In the given circumstances in Serbia, it is essential to gain a better understanding of the reasons for early retirement so as to assess to what extent pension policy is even capable of affecting retirement decisions, and to what extent solutions need to be sought in other domains – employment, health and education policies. Furthermore, an insight into the differences in the length of retirement between recipients of low and high pensions would make it possible to determine whether and to what extent penalties include redistribution among pensioners according to their financial situation.

Stronger encouragement of later retirement is another option to be explored and one that is embedded in the Serbian system in a relatively modest form; however, old-age pensioners have the possibility of working, along with having their benefit amounts recalculated on those grounds.[139] EU reforms involve different arrangements, from earnings valorisation even beyond 45 years of pensionable service (Belgium), to one-off bonuses in case of later exit from the labour market (Denmark) (OECD, 2019).

2.2.3 Other parametric changes, options to be explored

Beside the above automatic mechanisms, many countries have also introduced automatic adjustment of pension levels to increased old-age life expectancy (a type of sustainability factor). This includes all countries that have shifted to notional defined contribution systems,[140] as well as a number of those with defined benefit systems[141] (Finland, Spain and partly Portugal) (OECD, 2019; Carone et al., 2016). In the context of deliberation on structural reforms and implementation of a new system, France envisages defining the point value at cohort level, with the proviso that, besides the wage bill, its value is also informed by inter-generational life expectancy differences, which is viewed as a 'major innovation in the point system' (Boulhol, 2019: 34, 45).

To curb expenditure in Serbia, it is essential to further tighten the eligibility requirements for accelerated benefits and to explore whether the provision of specific non-contributory benefits such as personal disability would reduce the number of recipients of and expenditure on survivor and disability pensions, while extending protection to all who need it and enhancing possibilities for combining social benefits with employment.

Cost curbing and expenditure-side measures are not the only strategic option to ensure balancing the pension system in the face of population ageing. Employment and output growth, reduction of the grey economy, more efficient administration and better collection of taxes and contributions are crucial in Serbia (Matković, 2016).

2.3 Shift to the notional defined contribution system

In the mid-90s, a number of countries shifted from defined benefits (DB) to notional defined contributions (NDC) in the public part of the pension system, with a view to greater individualisation, lower redistribution and strong links between contributions paid and pension level (Italy, Latvia, Poland and Sweden). In NDC schemes, which are also financed on a PAYG basis, contributions are recorded in individual accounts to which a notional rate of return is applied, and pensions are adjusted to the life expectancy of the cohort.

The key advantage of NDC systems is that they perform many automatic adjustments that reduce the scope for discretionary political decisions (Holzmann, 2017). As a result they are assessed as being the most resistant to economic and demographic shocks (Boulhol, 2019). Via the calculation formula, life expectancy gains automatically reduce pensions at the time of retirement. Incentives to retire later are explicit and substantial, which potentially drives the effective retirement age upwards and may be relevant in view of population ageing. As the notional interest rate is tied to parameters such as growth rates of the wage bill, contributions bill or GDP, the pension system is affected by changes in economic strength and labour market developments (Boulhol, 2019). Simplicity and low administrative costs are also cited as advantages (Barr, 2012), as is transparency, especially in terms of a clear distinction between the portion of old-age income funded with contributions and that provided from the budget to achieve redistribution goals (disability, child care, top-up for low pension recipients).

The most commonly cited disadvantage is the difficulty of understanding the concept and the impact of design on pension levels (Holzmann, 2017). According to some authors, possible disadvantages include inflexibility, as well as absence of social dialogue, especial-

[139] It is also necessary to review mandatory retirement, which has been repealed by a few countries (UK, Denmark and Poland) (OECD, 2017).

[140] Notional defined systems (NDC) will be explained in the following section.

[141] In defined benefit (DB) plans the level of pension is guaranteed and benefits are linked to length of service and earnings.

ly since automatic mechanisms have the sole purpose of ensuring fiscal stability, but not pension adequacy (Filgueira & Manzi, 2017). The absence of redistribution may also be a serious weakness, unless the country has other efficient instruments to reduce poverty and ensure adequate old-age income. Another challenge lies in including part-time workers, those with longer unemployment spells or working on a succession of temporary contracts in the scheme (Holzmann, 2017). If there are life expectancy disparities by socio-economic status, a formula that takes into account average remaining life expectancy is inadequate (Holzmann et al., 2019).

If this option were looked into more closely in Serbia, it should be noted that the same types of reforms are possible within all three closely related variants of earnings-related systems (OECD, 2005:72), in particular points and NDC systems (Boulhol, 2019), and that the change would be technically highly demanding and would also probably require considerable time to reach a political consensus. Hence, it is more efficient to incorporate certain properties of the NDC scheme into the existing system.

2.4 Privatisation and introduction of the second pillar

On World Bank recommendation, during the 1990s transition, most Central and Eastern European countries introduced mandatory insurance in private pension funds with the idea that the pension system would rely on three pillars. The reform entailed redirecting a portion of contributions from the first pillar (PAYG) to private individual accounts (second pillar), while incurring a transitional cost. Part of this cost was covered through decelerated pension bill growth, resulting in relatively low pensions and a low ratio of public expenditure on pensions in these countries (World Bank, 2005:5), and part by sovereign debt, to cover the first pillar deficit.142 The global financial crisis turned the spot- light on financing problems, while also revealing administrative and institutional inefficiencies (OECD, 2013.:11). Pressured by the crisis, indebtedness and transition costs, most Central and Eastern European countries discontinued or significantly reduced the second pillar. In the context of some countries abandoning the second pillar, the latest OECD report on pensions even states that 'the current context of low long-term yields might call for revisiting the trade-offs between PAYG and funded components' (OECD, 2019:38). European institutions warn that reforms aimed at promoting supplementary pension saving should 'avoid substitution of public pensions' (EPC-SPC, 2020:43).

In the early 2000s, in the first wave of reforms, Serbia dismissed the introduction of the second pillar,[143] and the rationale for its introduction was subsequently analysed and substantiated in detail, with emphasis on high transition costs, estimated at between 0.6% and 1.7% of the GDP per year, during more than 40 years (Matković et al., 2009).

If it is acknowledged that the pension privatisation model involving the redirection of contributions from the first to the second pillar was a failed experiment (ILO, 2018), a crucial issue in Serbia is the proportion of the first (public PAYG) to the third (private, funded) pillar, and measures that may need to be taken to facilitate the diversification of funding sources for old-age savings. According to National Bank of Serbia data and analyses (NBS, 2020), the number of active insured persons under private pension schemes is currently low; private pension funds mainly invest in government bonds, and possibilities for portfolio diversification are limited.

In many papers, Barr stresses that funding does not provide a response to demographic challenges, since it may preserve the nominal value of savings in individual accounts, but not necessarily their purchasing power (Barr, 2012:157),[144] and that demographic shocks affect all pension schemes, in both the public and private sector (Barr & Diamond, 2006:21, 32-33) (Barr, 2012:166). In his latest paper, he stressed that in both PAYG and funded schemes workers are trying to secure their consumption in retirement by building claims on future production and that economic growth and good government are more important than the specifics of pension design (Barr, 2021). Barr even argues that, in the case of predominant investment in government bonds, funded schemes become PAYG, as the payment of current insured persons' pensions will depend on future taxpayers (Barr, 2002:9).

In strategic decision-making on the size of each pillar, it is worth noting that in private schemes 'the risks of longevity, inflation, and financial (mis)management and market volatility are all borne by the future retiree' (Hinrichs & Lynch, 2010: 366). It is also necessary to take into account expenditure on direct subsidies and revenues lost owing to tax incentives granted to encourage saving in private pension funds. EU reports warn that reforms aimed at promoting supplementary retirement savings should consider not only the fiscal implications, but also redistribution effects, given the profile of private pension scheme clients, which is not gender-neutral and includes a higher proportion of males, more affluent individuals and permanent employees (EPC-SPC, 2020).

In the context of the third pillar at least three questions should be considered. First, what is the scope for supplementary savings and how can it be created in the context of high contributions and high contribution base ceiling in the first pillar (5 times the average wage)? Second, would direct subsidies instead of tax incentives also encourage lower-wage earners to invest in private pensions and how prevalent is the problem of inadequate financial literacy? And third, is the introduction of automatic enrolment in voluntary private pension schemes part of the solution and what would it, in fact, achieve??[145]

[142] Although the use of privatization revenues appeared to be an attractive option to cover transition costs it was sufficient only in part or only for a relatively short period (World bank, 2005:4).

[143] For more details, see Altiparmakov & Matković (2018).

[144] In the case when a large generation is followed by a smaller one, Barr explains how the value of the accumulation, and thus the annuity, will decrease 'Suppose that every couple has one child; thus each couple of the next generation will inherit two apartments and, other things equal, apartment values will fall' (Barr, 2012:168).

[145] This mechanism has resulted from research showing that participation in supplementary pension schemes is significantly hampered by procrastination and inertia. In the EU, automatic enrolment has been introduced in Germany, Italy, Poland, Lithuania and the UK (OECD, 2019a).

2.5 A break with Bismarck

An explicit shift from a Bismarckian social insurance to a Beveridgean basic income pension is not a common reform option. In a number of countries, however, reform processes have been found to imply a silent shift from one to the other, and similar tendencies are observed in Serbia too, given the significant increase in vertical redistribution within the system and the decline in current and perspective net replacement rates (Matković & Stanić, 2020). Consumption smoothing as a key pension system goal is thus passed on from the public to the private sector.

In the basic Beveridgean variant, full system transformation would involve providing all citizens with equal basic pensions which can vary by length of pensionable service, but are non-contributory and budget-funded, while the private sector would provide consumption smoothing (Ebbinghaus, 2021).

A break with Bismarck, both explicit and implicit, raises at least three issues. Firstly, the issue of transition cost, given that the present generations, especially older ones, who have paid contributions on a base of up to 5 times the average wage, expect to achieve the consumption smoothing goal through the public pension system (and are entitled to it). Secondly, the question which system – public or private – would ensure maintenance of the relative living standard more efficiently, given the circumstances in Serbia, in particular investment opportunities, as well as state capacities to regulate and oversee the private sector. Finally, the issue of old-age income in- equality, which tends to be more prevalent in systems with a more substantial presence of private pensions (Ebbinghaus, 2021), as well as redistribution towards the more affluent, in view of tax exemptions and subsidies.

Based on the data and research we have today, it seems that in Serbia it would not be effective to provide consumption smoothing predominantly through private pension schemes, and that major structural changes would not lead to improved outcomes.

3 Long-term care

Over the past decade, long-term care (LTC) system reforms in the EU have been geared towards deinstitutionalisation and stronger development of community-based services, as well as efforts to direct support, to a greater extent, towards those who need it most and/or cannot afford it.[146] The focus is also on reviewing financing modalities, from setting up a budget fund for non-institutional services (Austria), to a dedicated LTC insurance contribution (Germany). Some countries are introducing support for family members caring for the old, and ways to ensure a sufficient supply of high-quality workers are also being sought (European Commission, 2019) (European Commission, 2018). High mortality in care homes and other consequences of the COVID-19 pandemic in residential care facilities have crystallised the arguments for deinstitutionalisation (Knapp et al., 2021).[147]

3.1 Outline of the Serbian system

In Serbia, LTC needs are traditionally met within the family. The public social protection system provides cash LTC benefits, residential care and community-based services, while palliative care and home treatment are provided within the health system.[148] These segments are within the mandates of different governance levels and do not comprise an integrated system.

The 2019 Population Health Survey shows that 9.5% of old people in Serbia had great difficulties with the basic activities of daily living, and 31.5% – with instrumental activities of daily living (MZRS, 2021). According to SILC (2019) data, 11.4% of the old (65+) perceived severe long-standing limitations on their usual activities due to health problems, compared to 15.9% in EU-28 (Eurostat, code hlth_silc_12).[149] The proportion of women with severe limitations was above the average (12.7 and 17.3%, respectively).

The coverage of older persons by public LTC social protection schemes does not exceed 7% of the total population aged 65+, assuming no overlaps in uptake. According to 2020 Ministry data, the proportion of older people receiving LTC cash benefits, as the most prevalent form of assistance, is approximately 4.5%.

The total public expenditure on LTC for old persons in Serbia was assessed in earlier research at only 0.5% of the GDP, with cash benefits

[146] Long-term care (LTC) refers to cash benefits, as well as healthcare and social services provided to persons in need of assistance in performing activities of daily living (ADL) over an extended period of time.

[147] Deinstitutionalisation – the transition from institutional to community-based services.

[148] Earlier research shows that 59.3% of primary health centres in Serbia do not have a dedicated home treatment unit. In Belgrade, the City Gerontology Institute provides palliative care to 1500 older people per day (Đukanović & Bogdanović Vasić, 2020:12).

[149] This indicator is used in developing LTC expenditure projections in the EU report on ageing (European Commission, 2018:136).

accounting for the largest proportion (almost three quarters) (Matković & Stanić, 2014:79). According to OECD data, the average ratio of total public expenditure for these purposes in 23 EU countries where data are available stands at 1.2% of GDP. Lower expenditure is found mainly in new Member States (OECD, 2019b:239).

Looking ahead, the demand for LTC services in Serbia is expected to rise, primarily owing to the growing population of the oldest-old and increasing life expectancy with disability, heightened expectations, shifting family patterns and declining family support due, *inter alia*, to emigration flows. Another important consideration is society's decision about the proportion of LTC that should be funded by clients themselves, and the proportion to be covered from public funds. According to OECD findings, social protection is essential to ensure LTC affordability and reducing old people's risk of poverty (Oliveira & Llena-Nozal, 2020:52).

3.2 Improving the existing system

3.2.1 Development of community-based services and deinstitutionalisation

In Serbia, community-based services are within the mandate of local self governments (LSGs). The most prevalent service is home care, which, besides personal care, includes support for the instrumental activities of daily living. According to 2018 mapping data, this service covered 1.24% of the persons 65+ in 123 LSGs (out of 145), and total expenditure for this purpose amounted to only 0.02% of GDP (Matković & Stranjaković, 2020). The proportion of old persons and service provision intensity vary widely across LSGs. Funding is mainly provided from local budgets (approx. 2/3) and national ear- marked transfers[150] for social care services (1/4). In most LSGs, no co-payment is charged to beneficiaries. Despite the introduction of earmarked transfers in 2016, home care services have not been expanded. Local governments used the funds to decrease their own investment in home care or to develop other services. Looking at a longer time frame, this service developed vigorously in the first ten years or so of transition, but no major progress in coverage or prevalence has been observed since 2012.

The coverage of older persons by residential care is also low in Serbia. According to 2019 data, approximately 1% of the old were in residential care (RSZS, 2020). Almost half of the residents are in private care homes, whose capacities have recorded a steep rise in the past decade and whose services are entirely funded by clients. Residents and their families fund a significant portion of public sector residential care services, too. According to 2018 data, almost 40% of the residents needed the most intensive support, indicating that, in Serbia, old-age care homes largely operate as nursing homes and hospices (PIO, 2019:18). Serbia's public expenditure on institutional care is twice as high as that on local-level social care services (Matković & Stranjaković, 2020).

In 18 EU countries for which data are available in the OECD database, the proportion of persons aged 65+ in residential LTC facilities (excluding hospitals) is significantly higher, 3.8% on average (OECD, 2021a). The deinstitutionalisation trend is especially strong in the Nordic countries (Spasova et al., 2018:9).

Reforms in Serbia should indubitably support further development of community-based services. Reform options include reviewing home care standards to ensure appropriate service provision intensity in all LSGs throughout the year and uniform eligibility criteria, to enable better targeting of people with the greatest needs.[151] Although co-payment is a matter of local policy, the system-wide arrangement where beneficiaries pay for the support received in care homes indicates that a higher level of co-payment for social care services within the LSG mandate makes sense, too. According to 2018 data, the co-payments covered only 5% of the total costs of the home care service in Serbia (Matković and Stranjaković, 2020: 53).

Further reforms must also support the introduction of these services in municipalities where they are not available at all, as well as en- courage the development of services such as old person day care and supportive housing, which are almost non-existent. Reviewing the concept of earmarked transfers is an important prerequisite for the development of community-based services.

The area of institutional care is burdened by many outstanding issues, including prices in care homes, beneficiaries and their families' contribution towards care costs, cross-sectoral links to the health system, the potential shortage of middle-level medical staff, and a strategic approach to the role of this form of old-age care.[152] One proposal is to reserve institutional care only for older persons with the highest support needs provided that community-based services are developed. Rapid private sector development, waiting lists for public care homes and comparatively low coverage of older people by this form of care indicate that now is the crucial time to elaborate the institutional care concept more thoroughly.

3.2.2 Cash benefits

Three types of cash benefits for LTC are available in Serbia. They differ in terms of grounds for eligibility, funding source (budget or insurance) and amount. The non-contributory attendance allowance is awarded to those who were not insured, the contributory LTC benefit is an insurance-based entitlement, and the augmented attendance allowance targets individuals with the most severe disabilities, available to recipients of both of the previous two benefits, either in the full amount or as a top-up. According to 2019 data, the contrib-

[150] In 2016, the government adopted a decree on earmarked transfers that specifies the criteria and rules for the allocation of additional funds to local governments for social care services that are in their mandate.

[151] In this context, it is worth considering UK experiences with the introduction of national minimum eligibility criteria rather than giving local governments discretion with regard to needs assessment (European Commission, 2019: 497).

[152] Some of these issues are addressed in more detail in the draft version of Deinstitutionalization Strategy (MRZBSP (2021).

utory LTC ry LTC benefit amounted to 61% of the minimum wage (RSD 16,500 equivalent to €140),[153] and the augmented allowance – to 107% (approx. RSD 28,800 equivalent to €245). The coverage of older persons stood at approximately 4.5%, primarily under the contributory LTC benefit (approx. 57 thousand recipients, i.e. 4% of the population aged 65+). The adequacy of the augmented allowance is at an appropriate level, as this benefit is intended to cover the lost earnings of family members who stay out of the labour market to care for a child/person with disability. Recipients may use the benefits at their discretion, without monitoring, as in most EU countries (European Commission, 2019).

One possibility in cash benefit reforms is to disconnect the LTC benefit entitlement from the pension and disability insurance system. As the level of PDI contributions is set by the law governing contributions, rather than determined in such a way as to cover all the entitlements available to recipients,[154] the question is whether the contributory LTC benefit is truly an insurance-based entitlement, or whether it is, in fact, funded from tax revenues, through budget transfers to the pension fund. The suggestion is at least to review the status of current recipients who were granted the right under previous laws, among whom some groups receive very low amounts (Matković & Stanić, 2014). Their possible transfer to the non-contributory part of the system would simplify the administration of top-up payments to the recipients with the most severe disabilities. In most EU countries, LTC benefits are budget-funded and non-means-tested (Spasova et al., 2018) (European Commission, 2019).

Reforms could also include tying benefit amounts to the intensity of individual support needed and, in the long term, widening the scale of benefit amounts. Such practice is established in several EU countries (e.g. Austria, Czech Republic, Finland, France, Germany) (European Commission, 2019). Overall, eligibility assessment should be based less on medical criteria, and more on functional ones.

It is also necessary to reflect on the link between LTC cash benefits and LTC services. The discontinuation and subsequent reinstatement of cash benefits upon admission to old-age care homes exposes policy meanderings in search of system-wide solutions and highlights the need to explore them in depth. One proposal is that cash benefits should cover personal care needs, while beneficiaries themselves should cover the costs of instrumental support, and the overall system of co-payment for social care services should be designed accordingly (Matković & Stanić, 2014). If cash benefits are to be used as compensation for the care for old persons in the family, it would make sense to develop individual protection plans and monitor their implementation to prevent neglect. If this idea, recommended in EU documents (Spasova et al., 2018), is to be followed in Serbia, it inevitably requires significant strengthening and capacity building of centres for social work.

3.2.3 Other issues

One reform option that could reduce system fragmentation is the establishment of a dedicated government institution in charge of LTC, with a separate budget. Cross-sectoral cooperation protocols between health and social institutions could also help overcome system fragmentation. At the local level, it is essential to ensure coordination between home care and health home treatment services.

In the coming period, special attention should be given to improving control mechanisms. Another major challenge is exploring measures to retain and ensure an adequate supply of service provision staff. The straightforward part of the solution concerns training and retraining. However, high demand for these occupations in countries offering better pay and working conditions[155] may drive the emigration of precisely that segment of the labour force which is needed to introduce LTC services.

Investment in rehabilitation, prevention and innovative technologies may significantly contribute to containing costs and raising efficiency in the area of LTC (Spasova et al., 2018). Innovative technologies may mitigate workforce shortages and increase productivity, as well as improving the quality of care. In the future, remote medicine, artificial intelligence, Big Data, drones and robotics will be an essential part of the answer to the challenges of caring for the old.[156] In-home technologies for older people (safety and health monitoring) and 'products such as an artificial Intelligence wheelchair, a convertible bed and body sensors for bath and bed can help older people live more independently'.[157] Simpler technologies such as smartphones, alarms, sensors and GPS monitors are already available, and experiments are underway with companionship robots or smart homes (OECD, 2020:162). Improving service providers' and clients' digital competencies will inevitably become an important consideration for the future of the sector.

In the context of overall system reform, it is necessary to consider to what extent Serbia has the financial scope and the capacities to support family members caring for old persons. In a few EU countries, such support is provided through training, counselling and respite care services, introduction of formal psychosocial support, coverage of caregivers' social insurance contributions, and flexible working hours and sick leave for caregivers (Spasova et al., 2018).

[153] In 2019, the minimum wage stood at RSD 27,022 (€230) per month on average.

[154] By payment of PDI contributions, insured persons become eligible for an old-age pension and health insurance in old age; in the event of death, their heirs may be eligible for a survivor pension and a one-off funeral grant; in case of disability, insured persons with only a few years of pensionable service are eligible for a disability pension, and potentially also for a physical disability benefit and LTC benefit.

[155] In its LTC plans, the UK expressly refers to improving efforts to attract immigrants in order to meet workforce needs (European Commission, 2019:498).

[156] For more details see the UN specialized agency for ITCs website https://www.itu.int/hub/2020/02/from-robots-to-virtual-reality-4-ways-tech-can-improve-seniors-lives/

[157] Rosmino, C. (2019, October 29), https://www.euronews.com/next/2019/10/29/japan-leads-the-way-with-elderly-care.

3.3 Introduction of dedicated LTC insurance

The option of introducing a dedicated contribution to fund both cash benefits and LTC services would, to a substantial extent, solve the problems of fragmentation, inconsistent criteria and absence of co- ordination between the health and social sectors. Some authors argue that there is a stronger rationale for meeting the growing needs of the elderly through social insurance, and that, if tax-financed, LTC stands little chance in the competition for public funds with other sectors (Barr, 2010).

The key weakness of this option is that, in Serbia, a new contribution cannot be introduced at the expense of existing ones, in view of the shortage of funds for pensions and health care. Raising the total social contributions level is also unacceptable, as it would drive labour costs even higher.

Further deliberation on the introduction of dedicated LTC insurance would certainly require an in-depth analysis of experiences from Germany and Slovenia, as well as the experts' rationale for rejecting this idea in Austria (European Commission, 2019).

4 Old-age poverty

Old-age poverty reduction is chiefly ensured within the pension system through universal pensions or the institution of minimum pension, depending on welfare state type. Further, almost all EU countries award specific social benefits to older persons outside the pension system, especially those with Bismarckian traditions (European Commission, 2021).

In recent years, new measures and instruments for more comprehensive protection of older people have been introduced (European Commission, 2021); in the long term, there is a notable threat of growing old-age poverty, given the prevalence of atypical and non-standard jobs, part-time work, employment instability, young people's increasingly delayed labour market entry, and in some cases a widespread grey economy as well. According to the OECD, part of the solution lies in equal treatment of all workers in terms of coverage, contribution rates and pension entitlements, which would also reduce the incentive for employers to increase non-standard employment (OECD, 2019). Social pensions are also part of the solution.

4.1 Situation in Serbia

In Serbia, the proportion of older persons (65+) who are vulnerable ranges from 8%, according to the absolute consumption poverty indicator,[158] to 21.1%, according to the at-risk-of-poverty rate (AROP). According to the former criterion, old-age poverty is only slightly above the average (poverty incidence of 7%), while according to the latter, they fare somewhat better than the general population (AROP of 23.2%). Pensioners aged 65+ are less vulnerable (Figure 5).

Poverty rises with age. According to 2019 data, the share of persons aged 75+ that were unable to meet their basic needs was as high as 11.2%, and 24.8% were at risk of poverty.

Risk of poverty is more pronounced among women aged 75+ (27.7%). Older women are more likely to live in single-person households, put- ting them at a significantly higher risk of poverty (Matković & Stanić, 2020a). Further, women's pensions are lower than men's by about 20% as a result of the accumulated consequences of their less favourable labour market position (RZS, 2020).

In Serbia, the risk of poverty of both the general and the old population is significantly above the EU-28 average. By this criterion, however, in a number of EU countries, older persons are more vulnerable than in Serbia.[159]

Pension coverage of the population aged 65+ stands at about 90%, with wide gender disparities (97% for men vs. 86% for women). Vulnerable old persons ineligible for a pension (approx. 136 thousand) may qualify for financial social assistance (FSA). According to administrative data, only approx. 16 thousand (1.1%) of the old population received this benefit in 2019.

Given pensioners' lower risk of poverty compared to the general population and the already fairly high redistribution towards minimum pension recipients, introducing guaranteed minimum income for older persons and designing a dedicated FSA module would constitute the key alternative policies to reduce poverty in old age.

[158] Data taken from SIPRU (2020), available in an Excel spreadsheet.

[159] Although the at-risk-of-poverty rate of the total population is higher only in Romania, the at-risk-of-poverty rate of old persons (65+) is higher in 8 countries, and in Estonia and Latvia it is over 40%. (Eurostat, code ilc_li02).

Figure 5. At-risk-of-poverty rates, Serbia and EU-28, SILC (2019)

Source: Eurostat, code ilc_li02, ilc_pns6

4.2 Introducing a guaranteed minimum income for older persons (GMIOP)

One option to reduce old-age poverty would entail introducing a social benefit awarded to the old persons ineligible for a pension and pensioners whose benefits are below the set GMIOP amount. The number of recipients and expenditure on GMIOP would be determined by the 'minimum income' level and the age eligibility threshold.

The most modest variant would involve minimum income equal to augmented FSA, which amounted to about RSD 10,000 (€85) in 2019. That year, this low benefit, below the minimum pension, was received by about 100 thousand pensioners (6.3% of the total number). Recipients of prorated pensions, who also receive foreign pensions, would certainly be ineligible for this entitlement. The other group of recipients would be people aged 65+ ineligible for a pension, about 136 thousand.[160] Unlike pensioners, who would receive a top-up to the GMI level, older persons without pension income would receive the full amount.

The other option is to tie the GMIOP to the absolute poverty line, which stood at 12.5 thousand dinars (€106) per equivalent adult in 2019 (SIPRU, 2020). In this variant, the number of recipients would be considerably higher, as almost all farmer pension recipients aged 65+ would qualify. On the other hand, for most recipients in this group, the top-up amount would be low (slightly over RSD 1,000 per month).[161]

The concept may foresee that only those aged 70+ or 75+ are eligible for the new entitlement, especially in the latter variant. A higher age threshold than the retirement age would increase the motivation, especially for farmers, to stay in pension insurance. Moreover, as noted above, poverty and risk of poverty are especially high in this age group.

Based on earlier research, the costs of introducing some form of social pension following a similar model were estimated at between 0.3% and 1% of the GDP per year, depending on the age group to which such pensions would be awarded and the benefit level (Matković & Stanić, 2014:156). According to findings, the key advantage of this type of pensions is that its implementation does not require high administrative capacities. The cited weaknesses are relatively high additional expenditure for the older persons in some variants and the inclusion error, since recipients may live in more affluent households.

4.3 Introducing a dedicated module in the financial social assistance (FSA) scheme

Introducing a dedicated module in the FSA scheme would be aimed at reducing poverty among the old based on means tested targeting.

According to earlier research, the key FSA access barriers for old persons were asset ownership criteria (especially land ownership), lack of

[160] Excluding those who are still active and those receiving a pension from abroad.

[161] According to PDI Fund data, in December 2019, over 90% of pensioners under farmers' insurance received the minimum pension or less. The minimum pension amounted to RSD 11,273 (approx. €95) for this category (PIO, 2020a:12).

awareness, complicated administrative procedures and the presence of relatives with a legal duty of maintenance (Matković & Stanić, 2014).

Old-age poverty reduction efforts should, thus, primarily focus on relaxing or eliminating asset ownership criteria in FSA eligibility assessment. As the first step, raising the land ownership ceiling to 2 ha for old-person households may be considered. Although the Law on Social Protection provides for the possibility of mortgaging land in order to access FSA, research shows that the poor are mainly unaware of this option, and the older population also shows resistance to such arrangements (Matković & Stanić, 2014). Eliminating all asset ownership criteria for old-person households with a maximum uptake would lead to an increase in FSA yearly expenditures by 0.2% of GDP (Matković & Stanić, 2014:158).

For the old who live in old-person households and are out of the labour force by definition, increasing the assistance amount may be proposed as well, since the disincentive to work does not pose a barrier to improving benefit adequacy. The hierarchical logic, whereby assistance should not exceed insurance-based benefits, suggests the farmer pension level as the upper limit for raising the FSA base. In households without members able to work, the weights for the second or third member may, however, be increased to 1 or at least 0.7 (from the current level of 0.5).

Earlier calculations show that reliance on an income test alone (eliminating asset ownership criteria) combined with a weight increase to 0.7 for the second household member would result in additional FSA expenditure amounting to 0.26% of GDP (Matković & Stanić, 2014:158).

Another possibility is to set the age threshold for relaxed eligibility requirements or higher assistance amounts at 5 years above the retirement age. This would reduce the moral hazard in terms of any negative impact that the introduction of a rudimentary form of social pensions might have on the payment of PDI contributions.

The key advantage of a dedicated module in the FSA scheme compared to GMIOP is the smaller inclusion error, as the eligibility criterion is household income, rather than individual income. In addition, this option would involve lower expenditure, especially in some scenarios.