



National transfer accounts

and policy
recommendations
in the field of
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List of abbreviations

GDP	Gross Domestic Product
SDG	Sustainable Development Goals
IEA	International Association for the Evaluation of Educational Achievement
EU	European Union
LCD	Life Cycle Deficit
MPNTR	Ministry of Education, Science and Technological Development
NEET	Not in Education, Employment or Training
NTA	National Transfer Account
OECD	Organization for Economic Cooperation and Development
PISA	Programme for International Student Assessment
TBH	Transfers between households
TWH	Transfers within households
TIMSS	Trends in International Mathematics and Science Study
SORS	Statistical Office of the Republic of Serbia
UNFPA	United Nations Population Fund

I

Findings of the analysis of National transfer accounts and their importance for education

National transfer accounts (NTA) are an internationally agreed, consistent and integrated way of aggregating and presenting macroeconomic data that provide insight into the entire national economy. Specifically, it is the allocation of primary income, its redistributions by government and families and its uses by single-year age groups of 0 to 80+. Data conveyed by NTAs quantify people's economic activity, showing how material resources are acquired and used at every age to satisfy personal needs as well as how and when they are shared with other people to secure the present and the future. NTAs indicate how income flows to and from an individual and how these flows are allocated to consumption, savings and investment. NTAs represent a cross-sectional accounting framework, with numerous potential applications, such as enabling greater understanding of investment return through the development of human capital, which is the key aim of this study.

The primary subject of this report is the National Transfer Accounts of Serbia for 2018 and 2019, analysed from an educational perspective. A secondary analysis of these NTAs initiates a discussion about the significance and scope of public and private investment in education, as well as regarding the cost-effectiveness of education, expressed through earnings, living standard, years of service, qualifications, type and the social prestige associated with an individual's profession. The main question the study seeks to answer is whether the image of investing in education and the return of such investments, both in the private and public domain, can be improved. In brief, NTAs are used here as a tool for guiding the development and establishment of potential roadmaps and guidelines for education policies that could serve to regulate the further development of various aspects of formal education.

1. Life cycle account

1.1. Labour income

The labour income captured by the NTAs reflects both income per worker and labour force participation. The reports on the Serbian NTAs for 2018 and 2019 show that residents of the Republic of Serbia officially start earning income, in accordance with the Labour Law, from the age of 15. From this age on, per capita income in the Republic of Serbia increases along with age until the mid-forties of life, when it reaches its peak. The NTAs indicate that after the 40s, there is a sudden drop in labour income, with income then continuing along a downward path until the age of 65, before remaining at a very low level until the late 70s (Chart I.1.1.). Compared to 2018, two changes are notable in the 2019 report that, although not major, are important for understanding trends in personal economies. First, the income ceiling from both earnings and labour was measured as slightly higher in 2019. Second, in said year, the labour income curve was shown to be shifted slightly to the right, to the age between 56 and 63, which could be explained by an increase in the retirement age for women and/or greater work engagement of the older population (pensioners).

In contrast to the Republic of Serbia, labour income¹ has been reported as remaining at a

higher level for a slightly more extended period in the European Union. Data indicate that here the 60s mark the start of a sharp decline in income which continues until the 70s, but does not end there; instead, income slowly declines until the 80s (Chart I.1.2.). This EU distribution of income by age represents a model demonstrating that it is possible to officially earn income from work at ages older than the pension limit, and it is important to identify ways and create conditions that would allow this to happen in the Republic of Serbia.

In the Republic of Serbia, the earnings of employees represent the largest part of the total labour income, while the income from self-employment is significantly lower. The situation is similar in the EU-25 (Chart I.1.2), with the caveat that the labour income in the EU in 2010 was significantly higher than the labour income in the Republic of Serbia in 2018 and 2019. For illustration, the median gross hourly wage in 2018 in the Republic of Serbia was EUR 2.81, while in the EU-27 it was EUR 13.18, which is 4.5 times more.²

¹ According to data for EU-25 from 2010.

² Eurostat, Earnings statistics, 2021. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Earnings_statistics#Distribution_of_earnings

Chart I.1.1.

Age profile of labour income components per capita – Republic of Serbia, 2018 (up) and 2019 (down) (SORS & UNFPA, 2021, 2023)

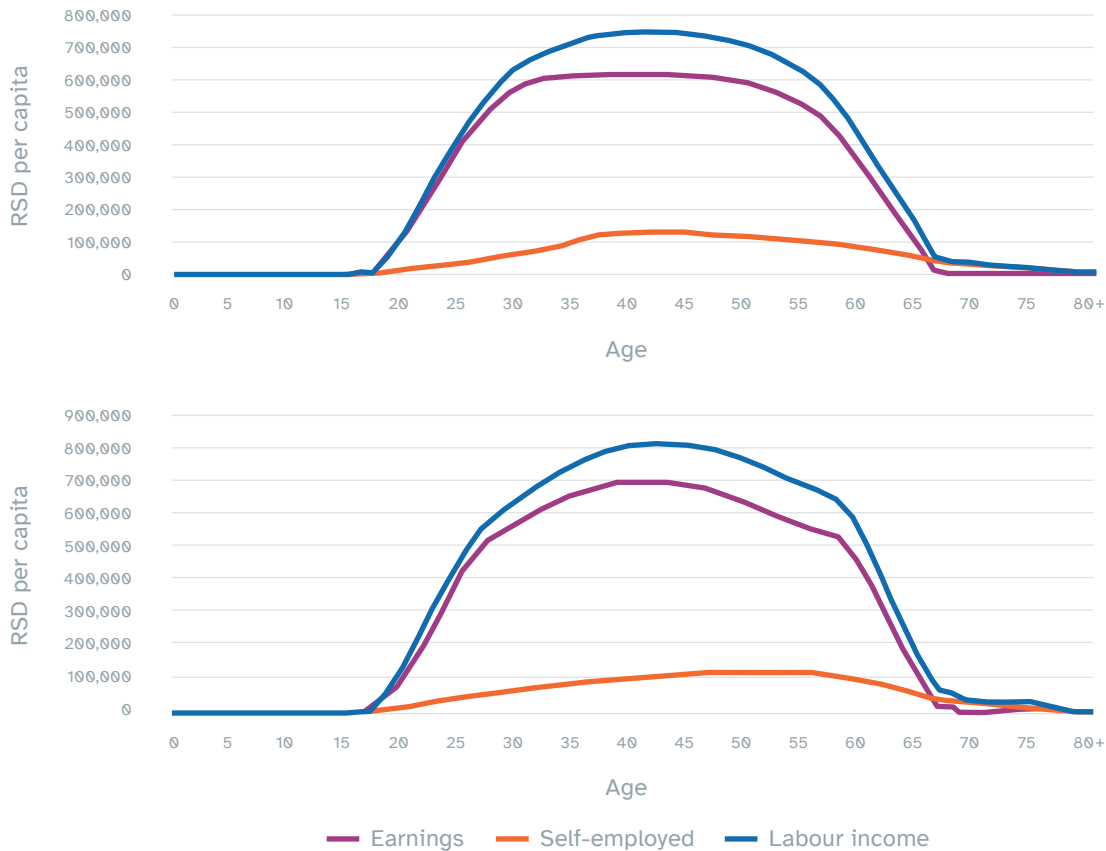


Chart I.1.2.

Age profile of labour income components per capita – EU-25, 2010 (Istemic et al., 2016)



The specific data reported for the Republic of Serbia indicate that, after 65 years of age (which is the retirement age for men), labour income is predominantly self-employment labour income, with almost no income from employee earnings³. In contrast, for EU residents aged 65+, employee earnings are still the predominant source of income. This raises the question: what does this difference between the Republic of Serbia and the EU imply? It would seem that in attempting to generate some income after retirement, residents of the Republic of Serbia dominantly decide to earn money as self-employed, most often within a small family business and/or through craft activities, often referred to colloquially as “privately owned business.” Private businesses or self-employment, which is the official classification, rarely involves jobs for high-profile specialists and experts in certain fields, those with extended initial education prior to employment and whose professional development continued throughout their career. **Not only from a personal, but primarily from a social perspective, it would be reasonable and likely beneficial to have those with such hard-earned expert competencies engaged as long as possible. Here, the recommendation would be to create conditions in the labour market, primarily through amendments to the Labour Law, which would allow for and encourage the engaging of experts in their later years, as is the case in EU member states⁴. At the same time, these possibilities of extended work for field experts could stimulate lifelong learning and improvement, meaning the benefits of this option are multiple. In addition to this measure, various “silver” economy models have been developed and implemented at the EU level, which will be discussed later and which could also serve as a guiding framework for the Republic of Serbia.**

³ Labour income in NTA reports is divided into earnings and self-employment labour income. RZS, UNFPA, 2021, 2023.

⁴ Klimczuk, A., “Comparative analysis of national and regional models of the silver economy in the European Union”, *International Journal of Ageing and Later Life*, 11, 2016, pp. 1-29. Available at: <https://doi.org/10.3384/ijal.1652-8670.15286>

1.2. Consumption

NTAs distinguish between public and private consumption⁵. Public consumption is the value of goods and services that individuals receive from the public sector, and it is divided into individual (beneficiaries of a certain health care or educational programme are individuals) and collective (the beneficiary is the population in general)⁶.

1.2.1. Education consumption

The NTA analysis for the Republic of Serbia indicates that education consumption is primarily present between the ages 3 and 30 (Charts I.1.3 and I.1.4), with public education consumption rising sharply from the age of 6 (when the compulsory preparatory preschool programme starts) and remaining at a high level until the age of 18 (the average age when secondary school ends). From the age of 18 to the age of 30, public investments per capita in education were shown to decline rapidly, while after the age of 30 (when higher education generally ends) they dwindle to an almost non-existent level.

A comparison of the charts of public and private education consumption indicates that their relationship is relatively complementary. Namely, public education consumption is shown to be focused on the period of primary and secondary education (at the age of 6 to 18 years), while after the age of 18 years expenditures fall quickly until the age of 30 (university education). When it comes to private consumption, the first peak is shown to occur between the ages 3 and 6 (preschool education), with the second, significantly lower, peak, occurring between the ages of 18 and 30 (university studies period), with a tendency of constant decline. Unlike public consumption, private consumption was found to be more significant in the

⁵ United Nations, *National Transfer Accounts Manual: Measuring and Analysing the Generational Economy*, United Nations, 2013.

⁶ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2018. godinu), 2021; *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), 2023.

period of early childhood development. However it is also displayed as existent after the age of 30, albeit to a much lesser extent, likely accounted for by

private investments in programmes of professional development and extended education (master's, doctoral and postdoctoral studies).

Chart I.1.3.

Public education consumption – Republic of Serbia, 2018 and 2019
(SORS & UNFPA, 2023)

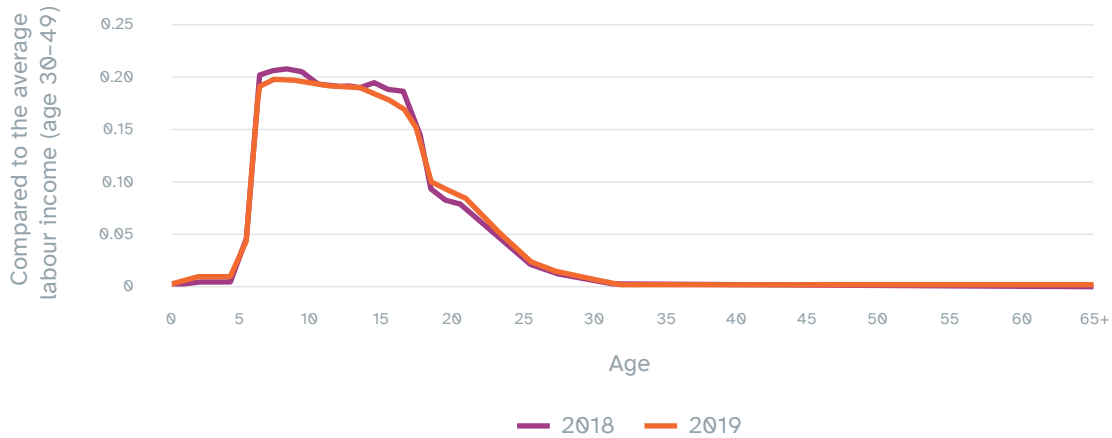
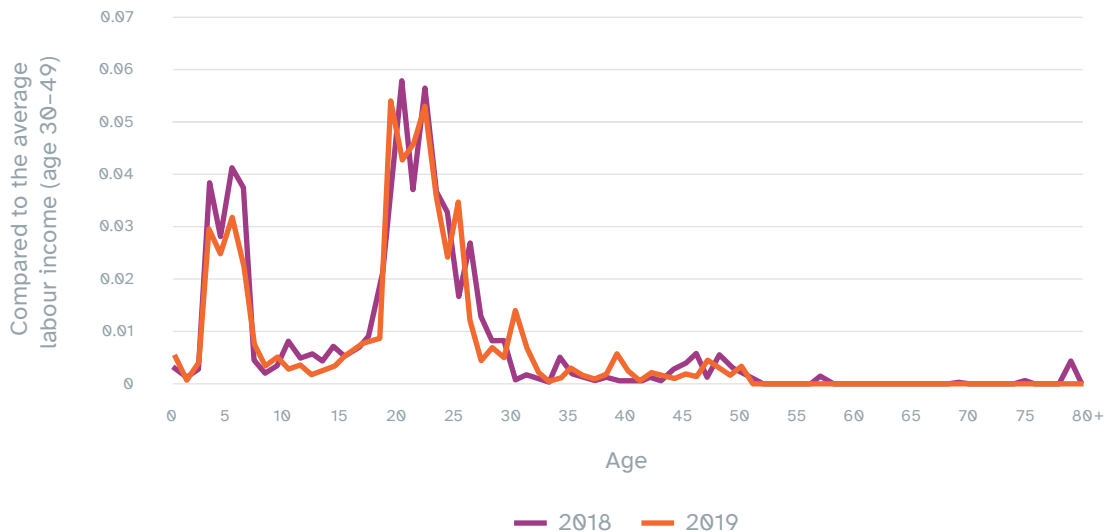


Chart I.1.4.

Private education consumption – Republic of Serbia, 2018 and 2019
(SORS & UNFPA, 2023)



According to the available data, public education consumption in the EU starts already in the first year of life and remains at a very high level until

the age of 20, after which it begins to slowly decline until the age of 40 (Chart I.1.5). Public education consumption is also indicated as

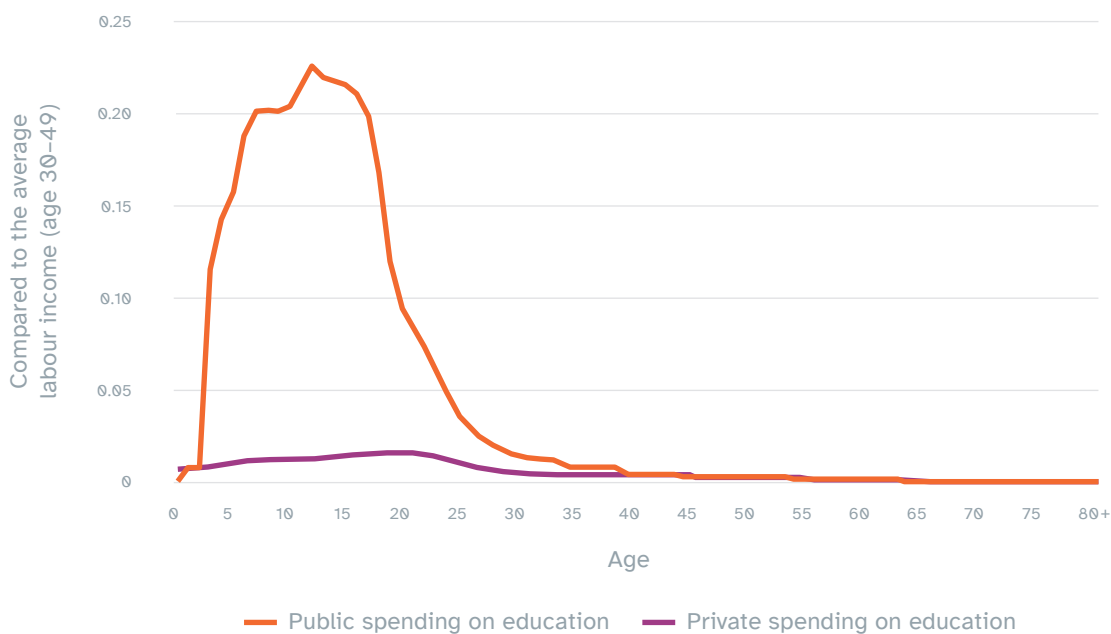
continuing beyond this threshold, although with a more pronounced tendency of decline, until the age of 65, when it essentially diminishes to zero. Private education consumption is shown to

be significantly lower than public. Also beginning in the first year of life, it appears to reach its maximum at the age of 21 and then slowly decline until the age of 80, when it essentially flatlines.

Chart I.1.5.

Public and private education consumption – EU-25, 2010

(Istemic et al., 2016)



In light of the above findings of the comparative NTA analysis of the Republic of Serbia and the EU, what circumstances are indicated as important for the development of education in this context? First, it should be emphasized that in the EU public investment in education is demonstrated as starting from the first year of life and remaining at a high level until the 20s. Consequently, private investment in education during that period is seemingly relatively low. On the other hand, in the Republic of Serbia, private sources are shown to play a significant role in funding those periods of education when public consumption is not sufficient; namely, the period of early childhood development (up to the age of 5) and, later, during university education. **Increasing public investment in education in the Republic of**

Serbia for these age periods would almost surely result in positive effects both on a personal and social level. It is known from econometric research that investment in early childhood education is the most profitable investment in this context, with the return of investment achieved through higher quality of educational outcomes, higher employability and a higher living standard of people who were supported at an early age, trends which are especially true for disadvantaged children, including those threatened by poverty.⁷ In countries like the Republic of Serbia, where there is a

⁷ Heckman, J., "Skill Formation and the Economics of Investing in Disadvantaged Children", *Science*, 312(5782), 2006, pp. 1900-1902.

proportionally small share of the population with higher education, a similar effect would likely be achieved through increased public investment in higher education. In addition to positively impacting the quality of education, the effect of continuous public investments in education would also doubtlessly be reflected in the reduced social inequalities and the unfavourable consequences of private education consumption for children from poorer strata who do not have educational incentives available⁸. As shown by Heckman and Masterov (2007), investing in early childhood development and education of children from disadvantaged backgrounds is an exceptional and valuable option that does not represent a choice between efficiency and equity, but simultaneously reduces inequality and increases productivity of society as a whole.⁹

1.3. Life cycle deficit

One of the most important parameters of NTAs is the life cycle deficit (LCD), which shows the difference between consumption and labour income at each age (children, working population and older people). Distinguished this way, the LCD provides potentially very useful insights into consumption and labour income for each generation separately. The life cycle deficit itself represents “the value of consumption that is not funded by labour income, but from other sources, such as asset-based reallocations (e.g. withdrawals from saving and capital income) and transfers (e.g. public pensions and gifts from family and friends)”.

Positive values of the life cycle deficit indicate that consumption is exceeding labour income. Accordingly, positive values of LCD are expected in childhood and old age, when these age groups are typically dependent on the working part of the population, while negative LCD values are

expected during working life, especially in middle age, typically regarded as the most productive period in this context. The life cycle deficit is constituted of public and private transfers and public and private asset-based reallocations¹⁰). So, when the life cycle deficit is positive, the difference between consumption and income is typically covered by age reallocations, through public transfers (e.g. unemployment benefits from the public sector) and private transfers (e.g. children receive transfers from parents), and from asset-based income and savings.

Analytical reports on National Transfer Accounts for the Republic of Serbia for 2018 and 2019 show a similar picture of the life cycle deficit^{11,12}.

Chart I.1.6. shows the life cycle deficit in relation to average labour income (at the ages 30–49) for 2018 and 2019. Here, life cycle deficit is seen to display a negative value (there is a surplus) between the ages 27–57 in 2018 and ages 26–59 in 2019. One additional notable indicator, which calls for the planning of a systemic response, is that the age at which an adult in the Republic of Serbia becomes dependent on others is under 60 years of age. The corresponding data for the EU (Chart I.1.7.) demonstrate that the average ages during which the LCD has a negative value (i.e. surplus) are ages 26–58), with 33 single-year age groups, on average displaying negative LCDs in 2010.¹³ In 2018, the surplus period in the Republic of Serbia is here shown to be 3 years shorter than in the EU in 2010, while in 2019 as equal to the EU.

⁸ Matković, G., *Nacionalni transferni računi i preporuke za politike u socijalnom sektoru*, UNFPA, 2022.

⁹ Heckman, J., Masterov, D. V., “The Productivity Argument for Investing in Young Children”, *Review of Agricultural Economics*, Volume 29, No 3, 2007, pp. 446–493.

¹⁰ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*, p. 22.

¹¹ *Ibid.*; Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2018. godinu), *op. cit.*

¹² Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*, p. 22.

¹³ Istenič, T., Hammer, B., Prskawetz, A., “European National (Time) Transfer Accounts”, *Vienna Yearbook of Population Research*, 17, 2019, pp. 201–221; Istenič, T., Hammer, B., Šeme, A., Lotrič Dolinar, A., Sambt, J., *European National Transfer Accounts*, 2016. Available at: <http://www.wittgensteincentre.org/ntadata>

Chart I.1.6.

Life cycle deficit – Republic of Serbia, 2018 and 2019

(SORS & UNFPA, 2023)

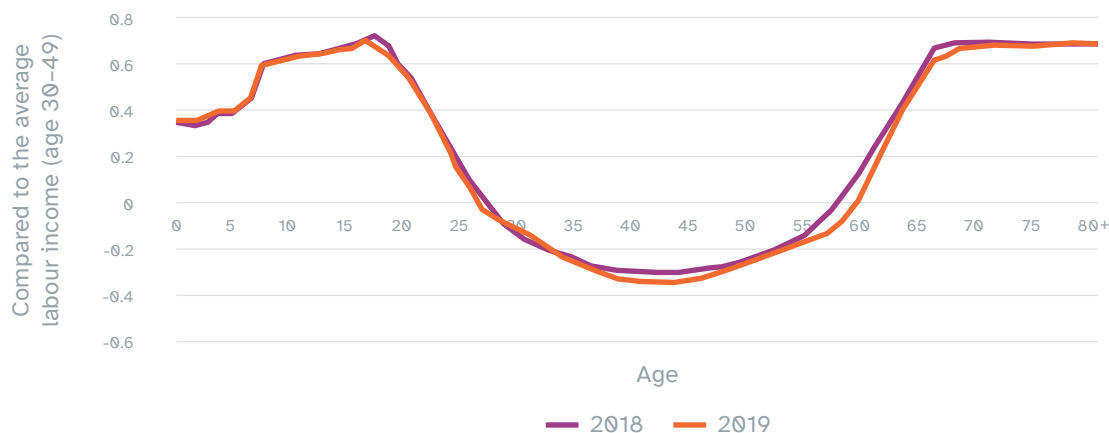
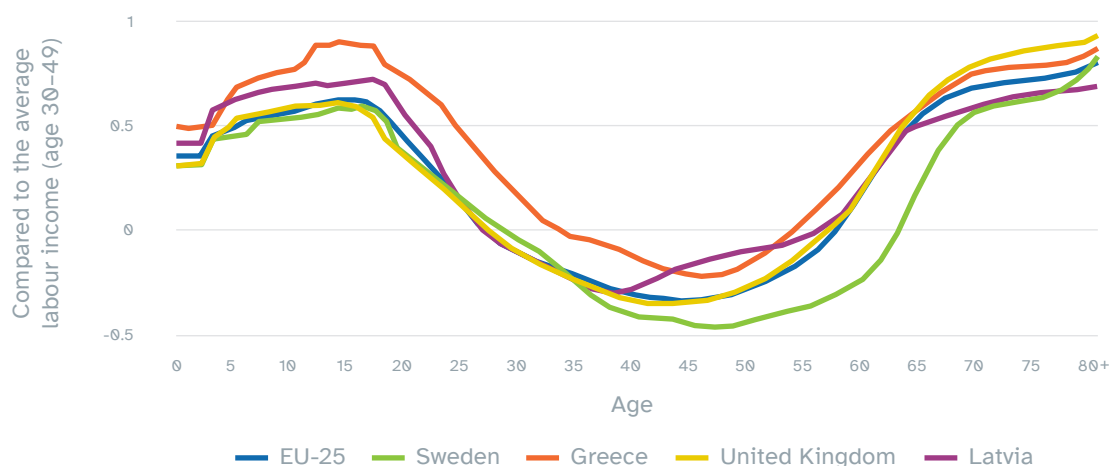


Chart I.1.7.

Life cycle deficit – EU-25, 2010

(Istenič, Hammer & Prskawetz, 2019)



Regarding the length of service, according to the laws of the Republic of Serbia, only individuals aged 15 and over can officially enter the labour market and earn income on this basis, while the legal limit for retirement in 2018 and 2019 was 65 years of age for men and 62 and 62.5, respectively, for women (with a minimum of 15 years of service). It is planned that the retirement age limit for women will be gradually increased until 2032, when it will be aligned with that of men at 65 years of age.

In practice, however, the working life does not correspond ideally with the legally prescribed criteria. According to Eurostat data, the expected duration of working life in the Republic of Serbia in 2019 was 33.4 years (36.4 years for men and 30.2 years for women)¹⁴. According to the same data,

¹⁴ Eurostat (2023a), Duration of working life, 27. April 2023. Available at: https://ec.europa.eu/eurostat/databrowser/view/lfsl_dwl_a_custom_9225863/default/table?lang=en

in the EU-27 in 2019, the total expected length of service was 35.9 years (38.3 years for men and 33.4 for women). At the same time, the expected length of service both in the Republic of Serbia and in the EU is constantly increasing, while the gap between men and women is decreasing. In the period of only 13 years between 2010 and 2022 in the EU, the expected length of service increased from 32.4 to 36.5 years, while the gap between men's and women's years of service decreased from 6.8 to 4.4 years. In the Republic of Serbia, in the same period, the length of service increased from 29.9 to 34 years, with the gap between sexes decreasing from 7.2 to 5.6 years. Compared to the EU, the Republic of Serbia is recording a faster pace in the extension of the length of service, with a slower reduction of differences between the sexes. **However, as evidenced by the EU data, there is still significant room for change in the Republic of Serbia in regard to both of these parameters.**

Critically, the above-mentioned increasing duration of the working life period is apparently not enough to counter the effects of another significant challenge with multiple manifestations, both in the EU and in the Republic of Serbia; the ageing of the population, which is putting increasing pressure on the funding of public transfers. According to the data of the Statistical Office of the Republic of Serbia, between the two censuses carried out in 2011 and 2022, the share of the population aged 15–64 in the Republic of Serbia, the period of the life cycle during which a general surplus for each age is expected to be generated, decreased from 68.3% to 63.5%¹⁵. At the same time, the share of the 65+ population increased from 17.4% in 2011 to 22.1% in 2022, while the share of the young population (under 15) changed only slightly, from 14.3% in 2011 to 14.4% in 2022. Here, significant demographic changes are clearly evident and there are indications that this demographic trend in the Republic of Serbia will continue in the long term. Europe is also ageing, but not as rapidly as the Republic of Serbia. Due to the nature and extent of such

changes, demographic profiles and forecasts of demographic trends should be a significant factor in economic policies, including those related to education.

Two notable indicators of potential consequence for the global and national economy, and even for education policies, can be observed from these charts. First, both in the EU and in the Republic of Serbia, the deficit reaches zero only at the age of about 26. Second, there are countries where the deficit at younger ages is lower compared to both the Republic of Serbia and the EU average (e.g. Austria, Sweden), while at the same time the number of single-year age groups with surpluses is significantly higher while not diminishing to zero until the age group of 65.

A few words about education solutions in Sweden

Sweden pays considerable attention to the improvement of the quality of education and the development of the education system, so this country is home to one of the most successful European education systems (e.g. OECD, 2019), and it is also known as one of the happiest countries in the world. Compulsory education lasts for 10 years, but early childcare and education programmes are funded from public sources from the first year of life, from state and municipal grants. Funding follows the per capita formula on a weekly basis based on state grants, municipal grants and fees. Additional funds are also provided from the state budget for children who need additional educational support (Eurydice, 2023).

¹⁵ *Ibid.*; Eurostat (2023b).

2. Public age reallocations

2.1. Public transfers

Public transfers are transfers between the public and private sector, or transfers between the public sector and the foreign sector¹⁶.

The total net amount of public transfers equals the difference between inflows (transfers in-kind and in money received by individuals) and outflows of public transfers (through taxes, social security contributions and other revenues paid by the private sector to the state), i.e., the difference between income and expenditure by individuals towards the state and vice versa¹⁷.

A comparison of the total inflows of public transfers for 2018 and 2019 for the Republic of Serbia as measured by the NTAs conducted shows that they are almost identical, with a small shift in the age profiles as already discussed above (Chart I.2.1.). These inflows were demonstrated as typically occurring in two age periods, though with contrasting degrees; between the ages of 7 and 18, gradual growth was documented, as opposed to dramatic growth in the older population, from the age of 60 onwards.

The public transfers inflow to citizens documented in 2018 was in largest part constituted by contributions to state pensions, which, together with veterans and disability pensions, accounted for 38.2% of the inflow. Education accounted for 8.9% and health care for 16.0% of the total public transfer inflow¹⁸. The results for 2019 show a slight decline in the share of pension inflows in the total of public transfer inflows — to 37.4%, while education and health care maintained shares similar to those documented in 2018 — of 8.9% and 16.3%, respectively¹⁹. The observed differences could potentially be explained as a consequence of the slight shift in the retirement age for women.

Public transfer inflows in the EU, compared to the Republic of Serbia, showed somewhat slower growth for the population aged 60+, which is in accordance with the previously presented data on the average age at which a positive deficit was documented to occur (Chart I.2.2.).

¹⁶ Istenič et al., 2016, *op. cit.*; Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*

Chart I.2.1.

Total public transfer inflows – Republic of Serbia, 2018 and 2019

(SORS & UNFPA, 2023)

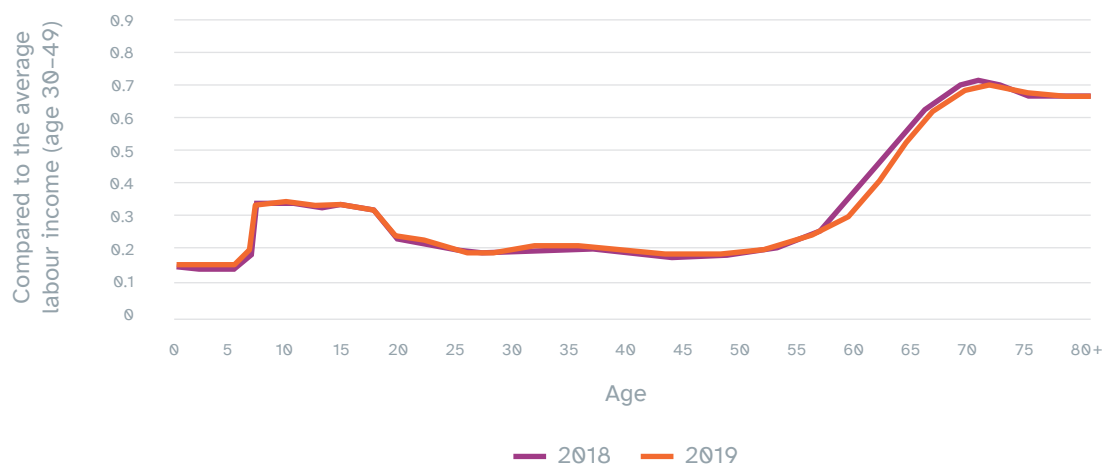
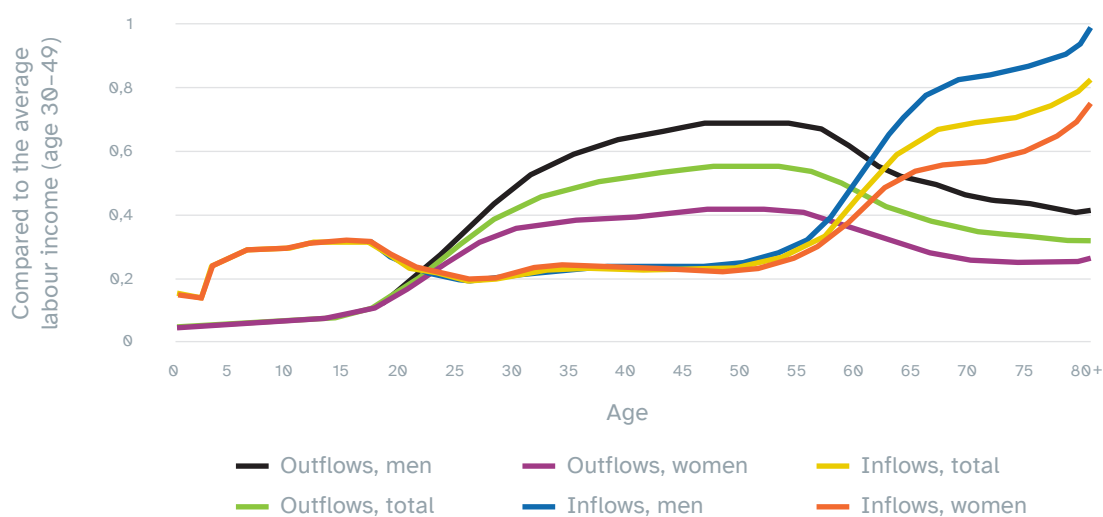


Chart I.2.2.

Total public transfer inflows and outflows – EU-25, 2010

(Istenič, Hammer & Prskawetz, 2019)



This NTA review indicates that, both for the EU and for the Republic of Serbia, the ageing of the population puts significant pressure on the funding of public transfers, which is a situation that requires a systemic response. When it comes to the Republic of Serbia, effective policy measures that would mitigate the negative effects of demographic changes are almost surely necessary, especially considering the forecasts that the ageing of the population will continue in the future.

Table I.2.1.

A comparative overview of the funding structure for consumption among older people in the population in the Republic of Serbia over two consecutive years (2018 and 2019)

	2018	2019
Public transfers	63.6	59.4
Private transfers	17.8	17.6
Asset-based reallocations	12.8	15.8
Labour income	5.8	7.2
Age of becoming net beneficiary	before 20 and after 60	before 21 and after 62

Although the funding structure for older people in the Republic of Serbia is very similar in the two years presented in Table I.2.1, comparative data indicate several significant changes that happened in the period of just one year. Public transfers, as the most important source of funding, are shown to have decreased. An increase in asset-based reallocations is registered, while the burden on families (private transfers) remains essentially the same. Although a small share, labour income in 2019 made up a more significant part of funding for older people compared to 2018. **This data also indicates the direction of changes that should be supported by public policies, ones which should create conditions in the labour market for greater participation of older people, while also raising their competencies so as to enable them to be more competitive in the labour market.**

Theoretically, positively transforming the borderline between working-age and old age can be done in the following two ways, among others: 1) by keeping the retirement process unchanged but raising the effective retirement age (shifting the current age profiles to the right); and/or 2) by making retirement a more gradual process whereby the declining side of the labour income curve would be less steep (changing the shape of the age profiles).

Furthermore, the pressure on households supporting older members should be reduced, thus allowing families to pursue opportunities for other investments. The psychological effect of such positive changes must also be emphasized here, as older members would surely feel less of a sense of being a burden on their families.

3. Private age reallocations

3.1. Private transfers

Private transfers refer to transfers within and between households²⁰. Transfers within households (TWH) are reallocations between members of the same household, while transfers between households (TBH) are constituted by alimony, remittances, etc.

According to the data obtained by the NTAs, the population of children and young people in the Republic of Serbia is a net beneficiary of TWH. Only from the age of 26, when the amount of transfers begins to exceed the amount of funds received, were young people seen to become net providers. From the age of 30, the inflows were documented as generally and constantly low, with the corresponding larger outflows concentrated in the working age, with individuals aged around 40 as the peak of this source of funds. It is important to note that the total net TWH in the age group 65+ is negative, which means that the older population contributes more than it receives from the household²¹.

TBH in the Republic of Serbia was documented as predominantly made up of remittances from abroad²², indicating that a significant share of the final consumption of households in the Republic of Serbia is funded by private transfers from abroad. According to the data collected by NTAs, the total amount of remittances in 2018 was 423.8 billion RSD (Republic of Serbia Dinars) and 418.4 billion RSD in 2019²³, with average net earnings in 2018 of 595,800 RSD and of 659,028 RSD in 2019²⁴. When we divide the total amount of remittances by average net earnings, we get a number for the so-called 'effective shadow workers.' In other words, we convert remittances into the equivalent average number of workers that remittances might support. For Serbia that number was indicated to be 7,100 in 2018 and 6,350 in 2019.

The net TBH curve per capita by age in the Republic of Serbia has been documented as essentially always positive, meaning more money is received from abroad than sent. In 2018, two age groups, 35–45 and 70+, were documented

²⁰ Istenič et al., 2016, *op. cit.*; Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*

²¹ Matković, G., *Nacionalni transferni računi i preporuke za politike u socijalnom sektoru*, *op. cit.*

²² Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2018. i 2019), *op. cit.*

²³ *Ibid.*

²⁴ Republički zavod za statistiku Srbije, 2014.

as somewhat larger recipients of these transfers. In 2019, the net TBH curve was shown, after initial growth, to, at the age of 19, begin to decline very slowly and then even out until the age of 67, when its sharp growth was shown to start. In all, these data indicate that the funding of the consumption of the older population is sensitive, that multiple sources are used, with the share of contributions from one's own work being the lowest, and that this necessitates change. Such changes should also entail the promotion of active and healthy ageing, which

affects the labour market, the employment rate, and thus the growth of the economy. We should look at the silver economy not only regarding the category of people who are retired (65+), but also considering all people who are older than 50 whose positions could be strengthened through, for example, participatory programmes in the fields of culture, art, recreation and/or professional activities where their knowledge and experience could be used in some form of mentoring work.

II

Implications for education policy

1. Preschool education: compulsory preparatory preschool programme

Comparative NTA analyses show that EU countries invest significantly more in preschool education than the Republic of Serbia. At the same time, they start with the investments earlier, from the first year of life. Crucially, what then are the possible effects of these differences in funding policies?

Early childhood education and care is a universal child right²⁵. This is also a global Sustainable Development Goal (SDG 4) to ensure that all boys and girls have access to quality education and care by 2030, which can bring a wide range of social and economic benefits for individuals and society in general.²⁶ At the same time, preschool education programmes are of the greatest importance for the development and prosperity of society. Research in the economics of human development has documented that investing in the earliest stage of education pays off economically and socially over the entire life cycle to the greatest extent of any period of life, particularly in the case of disadvantaged children. Such investment helps to

avoid later, more expensive and often less effective corrective measures²⁷.

The current preparatory preschool programme was introduced in the Republic of Serbia in 2006, as a compulsory free nine-month programme for all children aged 5.5 to 6.5, lasting 4 hours per day. Although the available capacities are sufficient for full coverage, given that this programme takes place in preschools and primary schools, the current coverage rate is 96.4% (Chart II.1.2.). The target value of 100%, set by the Strategy for the Development of Education in the Republic of Serbia by 2020, has yet to be reached. Those currently without coverage, thus preventing full coverage from being achieved, are mostly children from vulnerable groups, such as Roma families and families of lower socio-economic status. According to data from the Strategy for the Development of Education in the Republic of Serbia by 2030, in 2019, 6,740 children were not enrolled due to capacities already being full, despite a significant increase in the capacity of preschool institutions and an increased number of facilities.²⁸ Beyond this, an analysis of the current situation has shown that the awareness among

²⁵ Konvencija o pravima deteta, otvorena za potpisivanje 20. novembra 1989, 1577 UNTS 3, stupila na snagu 2. septembra 1990 (Convention on the Rights of the Child. General Assembly resolution 44/25). Available at: <https://www.ohchr.org/en/professionalinterest/pages/crc.aspx>

²⁶ SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, UN 2030 Agenda for Sustainable Development.

²⁷ Heckman, J., "Skill Formation and the Economics of Investing in Disadvantaged Children", *op. cit.*

²⁸ Strategy for the Development of Education in the Republic of Serbia by 2030, p. 15.

citizens about the educational role of preschool education and care is insufficiently developed, with preschool education still seen more as a “system of childcare” of preschool-age children than as part of the educational socialization of children.²⁹

Recommendations based on the NTA analysis and review of data on the inclusion of children in the preparatory preschool programme

The NTA analysis shows that public investments in education in EU countries typically start earlier than in the Republic of Serbia and are more intensive. **In this sense, it is necessary to develop, assess the justification for, and implement funding measures for the preschool education programme that contribute to increasing the coverage, availability, and inclusiveness of this segment of the education system through:**

- > **Allocation of greater funds from the state and local budgets for the development of preschool education (expanding infrastructure and services), so that this type of education is available to every child³⁰;**
- > **Reducing the share of or completely removing the burden from the family budget for funding the preschool programme by shifting all such burdens to the state and local self-government, including the funding of the educational needs of children who need additional support (assistive technologies and other types of support, transportation, nutrition, health care);**
- > **Multi-sectoral and direct material support for families.**

²⁹ *Ibid.*

³⁰ European Commission, *Serbia 2023 Report*, 2023. Available at: https://neighbourhood-enlargement.ec.europa.eu/document/download/9198cd1a-c8c9-4973-90ac-b6ba6bd72b53_en?filename=SWD_2023_695_Serbia.pdf

2. Pre-university education: funding education as an instrument for improving the quality of educational outcomes in the Republic of Serbia

A comparative analysis of public and private education consumption for the two consecutive years of 2018 and 2019 reveals a high degree of complementarity. The family was documented as usually responsible for covering the costs of education at the earliest age, with public investments becoming intensive and remaining at a constantly high level in the life period from the age of 6 to the age of 18, i.e. in the period of primary and secondary education. Family investments (private consumption) in that period were documented as significantly lower. However, a small, though noticeable difference was evidenced in that families invested less in education in 2019 than in 2018. This could imply, positively, that the care for pre-university education, starting from the compulsory preparatory preschool programme until the end of secondary school, was taken over by the state to a somewhat greater extent in the intervening period. Yet, if so, is this investment sufficient? What types of educational activities are investments from the family budgets, although low, used for? What is the effect of public investments expressed through the quality and efficiency of education? Could changes in the system of funding education and in the total level of education consumption contribute to more efficient consolidation of, and simultaneously to an increase in, opportunities for the development of human capital in the Republic of Serbia?

Compared to other countries in Europe, investments in education in the Republic of Serbia are generally low and insufficient. For years now, the Republic of Serbia has been spending a modest share of the state budget on education, compared to other countries in Europe and some other countries in the region. In recent history, the level of public expenditures for education in the Republic of Serbia has ranged between 3.5–4.5% of GDP, and in 2024 it is forecast to be slightly under 4.3%. In the European Union, this percentage ranges from 4.5 to 7%, which is how much Norway is allocating, while the average in OECD countries is 5.3%³¹ and 5% in EU member states³². The strategic goal from the Medium-Term Budget Framework for 2020 envisages an increase in investment in education from the current 4.5% to an intended 6% of GDP³³. In Serbia, the level of resources that each school receives has remained relatively unchanged for years now, due in part to

³¹ Maghnoui, S., et al., *OECD Reviews of Evaluation and Assessment in Education: Serbia*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris, 2020, doi:10.1787/225350d9-en.

³² European Commission, *Serbia 2023 Report*, op. cit.

³³ Ministarstvo prosvete, nauke i tehnološkog razvoja RS, *Sektorska budžetska podrška u oblasti obrazovanja: Reforma obrazovanja u Republici Srbiji – jačanje vaza sa sektorom zapošljavanja i socijalnog uključivanja*, 2019. Available at: <https://prosveta.gov.rs/wp-content/uploads/2019/12/Sektorska-budzetska-podrška.pdf>

limited financial incentives for the consolidation and adaptation of school networks, but also great political and social pressure to maintain the existing structure, despite the changed, and changing, demographic structure of the population.

Recommendations based on the NTA analysis and review of data on pre-university education

The quality of education has a positive correlation with investments³⁴. **Higher investments in education yield a better effect, expressed through the quality of education. This relationship, although obvious, is not linear, as there are other factors involved. For example, increasing investment in education would almost certainly contribute to a greater appreciation of education as an instrument of social and economic development in the public discourse. At the same time, increased investments would also doubtlessly contribute to increasing the reputation of the profession of teaching, and over time, to a better selection of future teachers.**

Data indicate that teachers' salaries make up the majority of the education budget of the Republic of Serbia. More than 90% of the budget of the line ministry goes to teachers' salaries, and the noticeable surplus of teachers partly contributes to such a high share of funds for salaries — an estimated surplus of 1,076 teachers leaves only a fraction of education funds for investments and development. At the same time, the international standard is that no more than 80% of the budget is used for salaries³⁵. Only 0.03% on average is earmarked in Serbia for the professional development of preschool and primary school teachers, which practically means that there is virtually no space for development-oriented activities. The financial explanation provided in the currently applicable Medium-Term Budget Framework says that additional costs for development and innovation will be covered by international grants and loans, which are short-term, inconstant and temporary, and, therefore, represent uncertain sources of funding. **Funding the education development should be stable and continuous, which means an increase in allocations from the GDP for these purposes.**

The education system in the Republic of Serbia is funded in a traditional way — based on the calculations of approved school periods and teachers. Innovations regarding the introduction of per capita student funding programmes and funding formulas that would allocate a higher coefficient for schools in remote areas and for students from vulnerable groups have not yet been implemented. **The comparative advantages of per capita funding have been confirmed in many countries where this approach has been applied, and include, among others: increasing the quality of education outcomes, higher efficiency and greater fairness in the education system, improved position of children from vulnerable groups, increased coverage at all levels of education, increased availability of education, higher autonomy and responsibility of schools and teachers, and improved cooperation between parents and schools.**

³⁴ OECD, *PISA 2018 Results (Volume I): What Students Know and Can Do*, op. cit.

³⁵ Maghnoui, S., et al., *OECD Reviews of Evaluation and Assessment in Education: Serbia*, op. cit.

International comparative studies of the quality of educational achievements (e.g. OECD/PISA, IEA/TIMSS), in which Serbia has participated since the 2000s, have consistently shown, through different cycles and in all examined domains, that students from Serbia achieve statistically significantly lower results compared to the international average. A typical difference is about half of a standard deviation, which is equivalent to 1.5 years of schooling in OECD countries. Cross-country differences in achievements reflect not only differences in the efficiency of the education system, but also differences in spending on education, which is incorporated in the NTA framework.

These assessment studies have demonstrated that persons whose education consists of a longer period of general education compared to vocational education typically display higher educational achievements, higher academic aspirations, more developed professional competencies, higher employability and jobs of greater prestige. **Longer general education equips students with strategies for intellectual work in more complex situations, as well as greater adaptability to change, including changing working conditions. Given the current conditions in Serbia, extending the educational process could be ensured by introducing compulsory secondary education, as is done in most European education systems. This is also envisaged in the Strategy for the Development of Education in the Republic of Serbia by 2030, where, among other things, it is stated that ensuring the conditions for the introduction of compulsory secondary education can be considered one of the key priorities, because, among other things, non-compulsory secondary education has negative consequences on the coverage, while also on the completion, of the education of students in general secondary education and particularly of those in vocational secondary education. The above situation implies that students seeking to escape poverty and marginalization are dropping out of the system, and it is precisely on account of this that they need educational support the most. Another key measure would be to strengthen, alongside improving their general competencies, these students' competencies that would help to ensure their better position in the labour market, such as entrepreneurial competence, digital competence and financial literacy, which will be discussed in a separate section of this report.**

3. Higher education: strengthening human capital and competitiveness in the labour market

The NTA analysis of Serbia reveals that after the period of secondary education, starting from the age of 18, the ratio of public and private investments in education changes. Public investments appear to drop sharply at this age, followed by a more gradual decline from the age of 18 to 25, before becoming very low between the ages of 25 to 30, after which they are practically reduced to zero. Private investments display nearly the same age-based profile, but with trajectories in the opposite direction, though they appear to extend until the age of 50, albeit at a very low level.

Although their percentage is small, the university student population should be a social group of particular importance for the national economy and the future of society, because it is they who are expected to take over management jobs in all segments and aspects of society's functioning in the near future. In Serbia's conditions, investing in the university student population makes additional sense, given the pronounced tendency for young, educated people to leave Serbia, whether in the process of education or immediately after obtaining a degree, and to rarely return. This implies that, from a social perspective, the investment in the education of these people is a missed opportunity for a return on investment. Nevertheless, it should be acknowledged that such investments partially return to Serbia through remittances, which are an important part of the NTA balance of accounts.

The situation with funding the science sector in Serbia shows the same trend as the funding of education, only with the differences compared to EU countries being even more pronounced. Based on the budget plan for 2024 in the Republic of Serbia, 0.5% of GDP is planned to be allocated for science, while in EU countries, around 2.3% of GDP is allocated for science on average, a figure more than 4 times greater.

According to the data of the Statistical Office of the Republic of Serbia on the scope and type of public consumption in higher education for the period of 10 years from the academic year 2012/13 to 2022/23, the share of university students in the national population slightly increased, by 0.4%. In the academic year 2022/2023, there was a total of 3.73% of university students, and while this is below the EU average, the difference is not major³⁶. However, when comparing the data on the indicators of university student standards, i.e. on the public funding of the needs of university students in 2022/23 and 10 years previous, significant deprivations are apparent. For example, the percentage of university students whose studies were funded from the budget decreased from 44.56 to 39.54%, i.e. by 5%. A significant decline in

³⁶ European Commission/EACEA/Eurydice, The European higher education area in 2020 — Bologna process implementation report, Publication Office of the European Union Luxembourg, 2020. Available at: <https://data.europa.eu/doi/10.2797/756192>

the number of scholarships is also visible, especially in regard to student loans, the number of which diminished over the ten year period from 14,470 to only 2,084.

In regard to how university students are supporting themselves during their studies, based on data for 2023, one in four university students were shown to have some source of income (24%), most often from their own work and much less often from some form of scholarship. According to data for 2021, among EU member states, the Netherlands had the highest share of students aged 16–29 who were employed while still studying (70%), followed by Denmark (49%) and Germany (42%). In contrast, the lowest

share of employment among students was recorded in Romania (2%), Slovakia (4%), Hungary and Bulgaria (5% each)³⁷.

According to the data of the Statistical Office of the Republic of Serbia, only slightly under 8% of students in the Republic of Serbia receive a scholarship or take out a loan. University students who do not study in their place of residence are additionally burdened by expenses for everyday life, particularly the costs of renting an apartment or room, and one in four students was documented as being in such a situation. Here, we should also add that 7% of current university students are documented as supporting someone.

Recommendations based on the NTA analysis and review of data on higher education

NTA analyses clearly show that public education consumption drops dramatically after the completion of secondary school, at the age of 18. The presented data indicate that public investments are lacking at the university-student age, despite this student population being of particular importance for the prosperity of a society. Alongside the general **recommendation to increase allocations from the GDP for funding studies, the following more specific recommendations are proposed:**

- > **Increasing the number of university students funded from the state budget, especially at faculties educating students for occupations currently in deficit (including some occupations in the field of education);**
- > **Increasing the number and amount of scholarships, particularly scholarships awarded at the local self-government level and scholarships which accord to the needs of the labour market, as well as providing intermediation in scholarships awarded by companies. As applied in many countries, such governmental support to students should come with a requirement for a student to „return” the invested funds through service inside the country for a number of years. Such measures would alleviate the growing shortage of qualified teachers in pre-university education, while at the same time limit „brain drain;”**
- > **Increasing accommodation capacities in student dormitories and developing alternatives for supported housing, especially for students requiring additional support (chronic diseases, persons with disabilities, etc.);**
- > **Early identification and additional support for students from vulnerable groups;**
- > **Supporting measures for students in extended university studies, including psychosocial forms of support;**
- > **Improving conditions in the labour market and increasing the offer of part-time jobs for university students.**

³⁷ Eurostat, 2022.

4. Transition to the labour market

Based on NTR analyses, young people in the Republic of Serbia start to earn their first labour income from the age of 15, yet young people remain a net deficit until the age of 26³⁸, which is similar to the situation in the EU-25³⁹.

Correspondingly, the pressure on public transfers in European countries, including the Republic of Serbia, raises the question of the possibility of young people becoming active in the labour market earlier, which is another of the recommendations stemming directly from the NTA findings. In this sense, EU countries are implementing various measures aimed at making it easier for young people, particularly those harder to employ, to enter the labour market and reduce unemployment in this part of the population.

In the process of transition from school to work, three phases are typically distinguished:

a) transition has not yet started; b) in transition; and c) completed transition⁴⁰.

³⁸ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2019. godinu), *op. cit.*

³⁹ AGENTA data for EU-25 from 2010; Istenič, T., Hammer, B., Prskawetz, A., “European National (Time) Transfer Accounts”, *op. cit.*, 17, 2019, pp. 201–221.

⁴⁰ Mathys, Q., *Transition from school to work remains a difficult process for youth*, ILOSTAT, January 16, 2020. Available at: <https://ilostat.ilo.org/transition-from-school-to-work-remains-a-difficult-process-for-youth/>

Recommendations based on the NTA analysis and review of data

- > Functional measures in this context begin with the period when the transition has not yet started and involve **inter-sectoral cooperation aimed at strengthening the link between education and the labour market**. In an attempt to strengthen this link in Serbia, Sectoral Budgetary Support in the field of education was implemented with the support of the EU from 2017 to 2019. **In addition to measures limited in time and scope such as the one just above, long-term and sustainable interventions are needed, including, among others, the following:**
- > **Constant education of employers (but also of teachers and school administration) regarding mutual interests in the relationship between education and the economy;**

⁴¹ Ministarstvo prosvete, nauke i tehnološkog razvoja RS, *Sektorska budžetska podrška u oblasti obrazovanja: Reforma obrazovanja u Republici Srbiji – jačanje vaza sa sektorom zapošljavanja i socijalnog uključivanja*, *op. cit.*

- > **Opening pathways and facilitating procedures for cooperation between educational institutions and businesses;**
- > **Highlighting examples of good practices;**
- > **Organizing high-quality and curriculum-compliant internships for students.** This is the foundational idea of secondary vocational, and more recently, dual education, whereby preparation for the labour market is additionally strengthened, as such a practice sets up an internship with the employer during schooling, as part of formal education. It should be borne in mind, however, that not all work-based learning automatically leads to a quality learning process. Work-based learning (internship) should be an extension of general education school programmes, not their substitute. **When it comes to work-based learning, the priority must be the quality of education, and comparative data from EU countries show that young people with a longer period of general education and with better developed competencies are more successful in the labour market, making them more adaptable to various work conditions and requirements, as well as to changing professions⁴²;**
- > **Increasing the competitiveness of young people in the labour market through the development of competencies and the encouragement of students' tendencies and interests;**
- > In the modern work world where the demands of employers are constantly changing, **it is no longer enough to possess only basic cognitive competencies; rather, it is necessary to simultaneously develop the socio-emotional skills that are necessary for a person to navigate the ever-changing labour market conditions. Greater success in the transition to employment is possible when the teaching of these skills are integrated with the teaching of technical skills⁴³;**
- > The transition from school to work is not only an economic and social topic, as it has an important and formative impact on the personality and self-perception of each individual. The ease (or difficulty) of this transition for young people has a lasting impact on their lives and their prospects in the labour market⁴⁴. **Activities in the field of professional orientation and career counselling implemented by school professional services are very important at both the primary and secondary school levels. Such services help students choose a secondary school, and later to choose a higher education institution that corresponds to their capacities, preferences and interests, thus increasing their chances of being successful in the labour market and satisfied on a personal level.**

⁴² OECD, *PISA 2015 Results (Volume I): Excellence and Equity in Education*, PISA, OECD Publishing, Paris, 2016. Available at: <http://dx.doi.org/10.1787/9789264266490-en>

⁴³ Brewer, L., *Enhancing youth employability: What? Why? and How? Guide to core work skills*, International Labour Organization, 2013.

⁴⁴ Mathys, Q., *Transition from school to work remains a difficult process for youth*, *op. cit.*

A particularly important group of measures are those aimed at the NEET⁴⁵ subgroup of young people, who are at particular risk in the labour market. Prevention or intervention related to improving NEET status is challenging both in social and economic terms. The integration of the NEET population into society and the labour market also often requires breaking the stigma that these young people are usually facing. This requires multi-sectoral and comprehensive approaches, such as:

- > **Improving and increasing the availability of educational programmes;**
- > **Adapting and harmonizing education in line with the needs of the labour market;**
- > **Providing mentoring and psychosocial support;**
- > **Creating favourable conditions for the employment of young people, which means ensuring the existence of jobs that match their skills and interests.**

⁴⁵ To distinguish between inactive young people, who are not at particular risk in the labour market (e.g. those who are in university and are not employed), a special demographic category has been introduced for individuals who are currently not in education, employment or training (NEET) and who represent a serious global social challenge.

5. Adult education and lifelong learning

The NTA analysis for 2018 and 2019 indicates that the older segment of the population in the Republic of Serbia begins to have a life cycle deficit and becomes economically dependent particularly early, already in their sixties. In addition, the ageing of the population puts significant additional pressure on the funding of public transfers.

It is best to seek solutions to these problems in adult education, designed to support the competitiveness of older people in the labour market. However, NTA analyses in the domain of consumption show that there are almost no public education allocations for the 30+ population⁴⁶. The situation in the domain of private consumption for adult education is somewhat more favourable and indicates that the need exists, but that funding such consumption is completely left up to individuals. Critically, it must be emphasized here that **long-term and sustainable solutions for adult education can only be realized through funding from public allocations.**

The framework for the development of the field of adult education in the Republic of Serbia is set by the Strategy for the Development of Adult Education

(from 2007), the Strategies for the Development of Education in Serbia by 2020 and 2030 (from 2012 and 2021, respectively) and the Law on Adult Education (from 2013). However, while the mentioned strategies and law have largely regulated the field of adult education, in theory as a form of lifelong learning and an integral part of the entire education system, the actual quality and coverage of adult education have not been significantly increased.

According to the data of the Statistical Office of the Republic of Serbia, in 2022, 19.9% of adults aged 25–69 participated in some form of formal or informal education or training⁴⁷. This group consists of 52.3% employed, 23.7% unemployed and 24% inactive people. However, when looking at the share of adults (25–69) who were involved in some form of education or training in the 4 weeks preceding the survey, the numbers drop to 5.2% for Serbia and 11.9% for the EU-27⁴⁸.

In light of the above, it is necessary to increase the coverage of adult education, while in regard

⁴⁶ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2018. i 2019), op. cit.

⁴⁷ Republički zavod za Statistiku RS (2023e, 31. novembar), Anketa o obrazovanju odraslih – 2022. Saopštenje LXVIII(293), 2023.

⁴⁸ Republički zavod za statistiku RS (2023d, 30. novembar), Anketa o radnoj snazi, III kvartal 2023, Saopštenje LXXIII (327), 2023.

to the aforementioned groups of unemployed and inactive people, it is necessary to develop targeted competency-based training

programmes that would increase their chances not only for future employment, but also for long-term participation in the labour market.

General and specific strategies for reducing the negative consequences of population ageing based on NTA analyses

In principle, there are two general strategies that can help reduce the life cycle deficit and address the negative consequences of population ageing⁴⁹:

1. Increasing the ability of the working-age population to support others (in this case, older people);
2. Reducing the economic dependence of the older population.

The first strategy has already been discussed in previous chapters. The second general strategy can be implemented through the following two specific strategies, among others:

1. Extending the period of active work;
2. Reducing early retirement.

Detailed NTA analysis indicates that most labour income of the 65+ population in the Republic of Serbia comes from self-employment (entrepreneurship). This means that further **stimulating entrepreneurship and the development of entrepreneurial competencies can result in labour during old age**, and therefore in the extension of years of service and the reduction of the life cycle deficit in old age.

The silver economy, which refers to the work activities and income of people aged 50+, is a key element of feasible solutions and should be encouraged by: 1) creating a more positive and productive environment for the work of older people; 2) promoting the contribution, experience, knowledge, skills and work capacities of older workers, especially towards eliminating prejudices and widespread discrimination against them in the labour market.

On the other hand, data from EU countries demonstrate that even in the older population earnings can exceed income from self-employment many times over until the age of approximately 70. This necessarily raises the question of why the older part of the population in Serbia does not remain in some form of employment even after fulfilling the legal requirements for retirement. Two hypotheses are particularly relevant here. First, it is possible that low earnings discourage individuals from engaging in additional work after becoming eligible for retirement. The second possibility is that employers are not willing to hire an older workforce due to their assumed poorer adaptability in modern work environments. In both cases, particularly the latter, solutions can be found in **timely education that provides the competences necessary to work in modern and digitally demanding work environments.**

⁴⁹ Sambt, J., Hammer, B., Istenič, T., "The European National Transfer Accounts: Data and Applications", Economic and Business Review, 23(3), 2021, pp. 184–193. Available at: <https://doi.org/10.15458/2335-4216.1287>

It is expected that the older part of the population follows relevant innovations that occur after the period of their formal education to a lesser extent. Accordingly, compensatory measures could be planned in the education system within the framework of adult education. NTA analyses in the domain of consumption show that there are almost no public education allocations after the age of 30⁵⁰. The situation in the domain of private education consumption is somewhat more favourable and indicates that the need exists, but that the availability is limited. Two key recommendations stand out in response to this situation. First, **to introduce systematic measures that would provide sustainable and long-term results, it is important for the state to constantly develop adult education programmes, as well as to regularly fund them. Second, the content of adult education in question here must, among other things, include the development of competences that are necessary in modern conditions, and which increase the competitiveness of every person, including older people, for employment.**

In the domain of education, and in the context of the implementation of the above-mentioned specific strategies, it is of particular importance to address the development of competences for entrepreneurship, financial literacy and digital competence.⁵¹ Care for the timely and adequate development of these competences belongs naturally to formal education, both in the period of childhood and youth and during adulthood, realised through adult education.

⁵⁰ Republički zavod za statistiku Srbije i UNFPA, *Analitički izveštaj o nacionalnim transfernim računima za Republiku Srbiju* (za 2018. i 2019), *op. cit.*

⁵¹ Competence for entrepreneurship and digital competence have been singled out by the European Commission as key competences for lifelong learning (European Commission, 2019).

6. Competences of particular importance for all educational levels

The NTA analysis for 2018 and 2019 indicates various aspects of the national economy that can be significantly improved only by successfully implementing simultaneous, long-term and systemic measures at all levels of education. These imply interventions aimed at the development of those competences among citizens that would result in healthy and sustainable employability and self-employability, earlier entry into the labour market, extension of years of service, reduction of early retirement, increased lifelong savings, better management of own assets, etc. The development of these competences through education is a goal whose achievement must be carefully prepared and, as a rule, should mobilize the entire school system, for competences can only be developed if they are implemented in education transversally (across ages and different subjects) and if they are supported through a multi-sectoral approach. Of particular importance according to the EU framework of key competences (European Commission, 2019) are digital competence and competence for entrepreneurship, as well as financial literacy⁵².

⁵² European Commission, Key competences for lifelong learning, Publications Office of the European Union, Luxembourg, 2019.

6.1. Digitalization and digital competence

The field of digitalization and the development of digital competence in education in the Republic of Serbia is addressed by three current strategies that partially overlap: the Strategy for the Development of Artificial Intelligence in the Republic of Serbia 2020–2025; the Strategy for Digital Skills Development in the Republic of Serbia 2020–2024; and the Strategy for the Development of Education in the Republic of Serbia by 2030. These strategies include, in a somewhat fragmented manner, several broad measures that are, primarily, oriented towards: a) informatics as an educational subject or educational path; b) preparation of the system for providing online or hybrid education; and c) compensatory or emergency purposes (for certain target groups, such as rural children, for drop-out prevention, for the education of children abroad or sick children, for emergencies, such as partial or complete school closure, etc.)⁵³. Noticeable, however, is the lack of a clear and elaborated definition and framework for understanding and applying digital competence.

⁵³ Pavlović Babić, D., „Obrazovanje i depopulacija”, in: Vuković, D., (ur.), *Ljudski razvoj kao odgovor na demografske promene*, UNDP Srbija, 2022, pp. 118–142.

Recommendations based on the NTA analysis

To support the further development and improvement of digital competences, it is necessary to:

- > **Develop a systematic and comprehensive approach to the topic of digital competences.⁵⁴ An important advantage of this approach is that it offers solutions and clarity for understanding, developing and implementing this concept;**
- > **Ensure, through laws and by-laws, the status of key, cross-curricular competences needed by all students;**
- > **Develop programmes that match the educational and age capacities and aspirations of students;**
- > **Provide trained teaching staff**, for which it is necessary to improve teacher training programmes, so as to enable teachers to assist young people in their classrooms in building the capacities to effectively use digital resources and information in a safe and sustainable way;
- > **Further improve and consolidate (in terms of volume and availability of data) the existing IT system in education, including building the capacity of education employees to effectively use data for the purpose of shaping policies at the school and local level, as well as for monitoring student progress⁵⁵;**
- > **Ensure funding and organization of training aimed at the development of the digital skills of adults, which would facilitate their employability in the modern “digital” business conditions. Examples of good practice that are already offered in the Republic of Serbia are programs of transgenerational learning which, if organized in schools as part of the regular internship of students, can be free for older users.**

⁵⁴ A good example of a systematic and comprehensive approach to the “problem” of digital competences is the DigComp project (The Digital Competence Framework for Citizens), launched in the European Union in 2010 with the aim of providing a common framework for understanding digital competence (Vuorikari, Kluzer & Punie, 2022). DigComp is an EU-level tool aimed at improving the digital competence of citizens. It helps policy-makers to formulate policies that support the building of digital competences, to plan initiatives for education and training and to improve the digital competence of specific target groups. Since 2013, DigComp has been used for many purposes, but especially in the context of employment, education and lifelong learning.

⁵⁵ European Commission, Serbia 2023 Report, *op. cit.*

6.2. Entrepreneurship and competence for entrepreneurship

The framework for the development of lifelong entrepreneurial learning at the EU level was first established by the Lisbon Agenda 2000–2010, which was later succeeded by the Europe 2020 and then Europe 2030 strategies.

The Republic of Serbia has for years recognized the importance of entrepreneurship development and competence for entrepreneurship and has developed strategic documents addressing this domain, including: the Youth Strategy of the Republic of Serbia 2023–2030, the Strategy for the Development of Education in the Republic of Serbia by 2030 and the Employment Strategy of the Republic of Serbia 2021–2026.

Following the policies set out in such strategic documents, the competence for entrepreneurship was introduced into the curricula of primary and secondary schools in the Republic of Serbia as a cross-curricular competence. At the same time, entrepreneurship as a subject was introduced in some study programmes. Cooperation between academic and non-academic (government institutions, companies, NGOs and business organizations) institutions has been given greater priority and numerous projects aiming to support student entrepreneurial learning have been launched and implemented⁵⁶.

In general, all such measures taken can be commended as relevant and effective to a degree. Still, NTA analyses show that very few young people become entrepreneurs (likely due to young people typically earning low income from self-employment). Those who do go on to become entrepreneurs often do so in the later years of their lives, with the average age of a beginner entrepreneur in the Republic of Serbia being 39 years old, according to the data of the Business Registers Agency for 2023. This situation, however, may have little correlation with the level of development of the competence for entrepreneurship and possible flaws in the educational process, but rather with the lack of founding capital, a hypothesis that needs to be tested.

Recommendations based on the NTA analysis

There are numerous measures aimed at developing the competence for entrepreneurship in the adult population, especially among older citizens. Currently, the following measures would likely have the greatest effect in the Republic of Serbia:

- > **The design and implementation of a training focused on the development of the competence for entrepreneurship of adults, preferably in combination with financial literacy, aimed at the acquisition of all theoretical and practical knowledge relevant for working as an entrepreneur in various economic sectors. Such training would need to be provided by relevant institutions for adult education, with the programmes and trainers accredited to ensure appropriate quality. These programmes should also be made easily accessible to a wide range of beneficiaries;**
- > **Measures taken in the education system must be accompanied by relevant, stimulating in-practice projects that would be implemented through multi-sectoral cooperation;**
- > **It is necessary to improve the existing self-employment subsidy programmes⁵⁷ so that they:**
- > **Include all 50+ people (and not only vulnerable groups);**
- > **Are accompanied by training programmes aimed at developing the competence for entrepreneurship, organized and implemented by accredited institutions for adult education in cooperation with the National Employment Service and/or the Development Agency of Serbia.**

⁵⁶ Čekić-Marković, J., *Preduzetničko obrazovanje: Komparativni pregled obrazovnih politika, modela i prakse*, Tim za socijalno uključivanje i smanjenje siromaštva, Vlada Republike Srbije, Beograd, 2015.

⁵⁷ For example, the Employment Strategy of the Republic of Serbia 2021–2026 envisages the provision of support for starting a business by awarding subsidies to unemployed persons for self-employment.

6.3. Financial literacy

Over the past decades, financial literacy has been globally recognized as an essential life skill, of particular importance for young people⁵⁸. This global interest in financial literacy has developed under the influence of several key causal factors⁵⁹:

- > **Shifting the risk from the state to the individual**, such as in regard to longevity, loans, financial markets not covered by the state, changes in pension policies, etc. At the same time, however, as numerous studies show, most employees are not aware of the risks they are facing, while they also do not possess sufficient knowledge and skills to adequately manage such risks, even when they are aware of them⁶⁰;
- > **Increased individual responsibility**. The number of financial decisions that individuals must make is increasing as a result of changes in the market and the economy. Even when individuals use the services of financial intermediaries and/or advisers, they must be able to understand what is being offered or advised;
- > **Increased offer of financial products and services**. At the same time, financial services are becoming more and more complex and require a comparison of numerous factors in the process of deciding on existing options, such as fees and charges, interest, repayment period and potential risks;
- > **Increased demand for financial products and services**;
- > **The global economic crisis of 2008**.

In contrast to its identification of entrepreneurial competence as crucial element, the education system in Serbia has not yet recognized the

⁵⁸ OECD, *PISA 2015 Results (Volume IV): Students' Financial Literacy*, OECD Publishing, Paris, 2017. Available at: <http://dx.doi.org/10.1787/9789264270282-en>

⁵⁹ OECD, *PISA 2012 Financial literacy assessment framework*, 2012. Available at: <https://www.oecd.org/pisa/pisaproducts/46962580.pdf>

⁶⁰ OECD, *Improving Financial Education and Awareness on Insurance and Private Pensions*, OECD Publishing, 2008.

importance of financial literacy. Thus, the Strategy for the Development of Education in the Republic of Serbia by 2030 does not mention financial literacy as an important skill⁶¹. **Since financial literacy is considered an important element of economic and financial stability and development globally (INFE, 2009), its introduction into strategic documents that shape and direct education policies is becoming extremely important.**⁶²

The many benefits of financial literacy can significantly contribute to the improvement of challenges detected through the NTA analyses carried out for this study. Some notable examples are:

- > Empirical evidence shows that there is a direct relationship between financial education and outcomes, and that adults who have had financial education are more likely to make a good retirement plan and save money for retirement⁶³.
- > A higher level of financial literacy is associated with an increase in assets, as well as with the amount of financial debts, i.e. with the skill of debt management, whereby more financially literate individuals choose cheaper mortgages when taking out loans and avoid high interest rates and related additional fees⁶⁴.

⁶¹ *Službeni glasnik RS*, br. 63/2021.

⁶² INFE, *Financial education and the crisis: Analytical note and recommendation*, 2009.

⁶³ Bernheim, D., Garrett, D., Maki, D., "Education and saving: The long-term effects of high school financial curriculum mandates", *Journal of Public Economics*, 85, 2001, pp. 435–565; Cole, S., Sampson, T., Zia, B., "Prices or Knowledge? What Drives Demand for Financial Services in Emerging Markets?", *The Journal of Finance*, 66(6), 2010, 1933–1967, doi:10.1111/j.1540-6261.2011.01696.x; Lusardi, A., "U.S. Household Savings Behavior: The Role of Financial Literacy, Information and Financial Education Programs", in: Foote, C., Goette, L., Meier, S. (Eds.), *Policymaking Insights from Behavioral Economics*, Federal Reserve Bank of Boston, 2009, pp. 109–149.

⁶⁴ Gerardi, K., Goette, L., Meier, S., "Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data", Federal Reserve Bank of Atlanta, 2010, p. 10; Lusardi, A., Tufano, P., "Teach Workers about the Perils of Debt", *Harvard Business Review*, November, 2009, pp. 22–24; Moore, D., *Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences*, Social and Economic Sciences Research Center, Washington State University, 2003.

- > Financial literacy enables households to make better financial decisions and vice versa⁶⁵. For example, insufficient financial literacy can reduce people's ability to save and invest for retirement, thereby undermining their own well-being in old age⁶⁶;
- > Financial literacy has an impact on household entrepreneurship, as a form of risk investment;
- > Finally, financial literacy is important for economic and financial stability, because more demanding users of financial services are: 1) increasing competitiveness and the quality of services on the market, 2) less likely to react unpredictably to conditions on the financial market, 3) submitting fewer unfounded complaints, 4) managing risks more adeptly, and 5) indirectly contributing to the reduction of state aid (and taxation) aimed at helping those who have made unwise financial decisions or made no decision at all⁶⁹.

Recommendations based on the NTA analysis

- > **The education system should be enhanced with the addition of concrete, meaningful programmes aimed at increasing the financial literacy of the population. Educational programmes created with this intent should be well-designed, age-appropriate and based on empirical data. One opportune variant for achieving financial literacy is to use standard school subjects (and not have it as a special subject) for its instruction, through the inclusion of examples of good practice and direct experiences in financial decision-making situations.**
- > It is necessary to keep in mind that it is not enough to introduce financial literacy only in mainstream education programmes, but also as part of lifelong education. Such an approach would doubtlessly contribute to an increase in the life cycle surplus in the long run. This, however, is only one part of the equation. Correspondingly, **one part of the measures in education must be focused on the development of competences that would enable the adult population to create better pension plans and increase savings for this period.**
- > **Adult education in this domain, as well as in regard to entrepreneurship competence, must be more systematic, well-planned and widely available.** Relevant research findings indicate that the majority of respondents would prefer personalized money management skills training instead of attending large group and general information sessions⁶⁷. **Adult education programmes would likely be most effective if they were focused on specific subpopulations.**⁶⁸ This would resolve differences in both needs and preferences for a certain type of savings.

⁶⁵ Hilgert, M., Hogarth, J., Beverly, S., "Household Financial Management: The Connection Between Knowledge and Behavior", Federal Reserve Bulletin, 89, 2003, pp. 309–322; Lusardi, A., Mitchell, O. S., "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education", Business Economics, 42(1), 2007, pp. 35–44, doi:10.2145/20070104.

⁶⁶ Lusardi, A., Mitchell, O. S., *ibid.*

⁶⁷ Moore, D., Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences, *op. cit.*

⁶⁸ Lusardi, A., Mitchell, O. S., "Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education", *op. cit.*

⁶⁹ OECD, *PISA 2018 Results (Volume IV): Are Students Smart about Money?*, OECD Publishing, Paris, 2020. Available at: <https://doi.org/10.1787/48ebd1ba-en>

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National transfer accounts

**and policy
recommendations
in the field of
education in the
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