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THE IMPACT OF THE TRANSITION TO A CASHLESS ECONOMY ON DISADVANTAGED GROUPS IN SERBIA

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The authors are solely responsible for the content presented in this study.

EXECUTIVE SUMMARY

In addition to triggering a reduction in the shadow economy and raising tax collection efficiency, the transition to a cashless economy is associated with several other advantages for society, such as reducing some types of security risks (e.g. thefts) and transaction costs (especially in terms of time and other operating costs related to cash management), as well as with greater convenience in making payments. On the other hand, cashless economy operations are associated with a higher risk of digital fraud, increased vulnerability to cyber-attacks, greater dependence on technology, payment fees costs and a higher risk of financial exclusion of disadvantaged groups.

Effective participation in a cashless economy presumes that users have access to financial services (e.g. have a bank account and payment card) and possess basic financial and technological literacy. However, with tech innovations and the accelerating shift from traditional to digital cashless payment methods (e.g. payments using mobile phone), effective participation in a cashless economy also assumes a moderate level of digital skills, possession of appropriate ICT hardware (e.g. smartphones) and a robust Internet connection. For many socioeconomic cohorts, these conditions are not met. International studies show that poor/lower-income individuals, the elderly and those living in rural areas are more likely to face challenges with meeting these requirements, which is why they would be particularly vulnerable to the exclusion risks associated with the transition to a cashless economy.

According to the World Bank's 2021 Global Findex Database, around 11% of survey participants aged 15+ in Serbia were unbanked (had no bank account), while the share of unbanked individuals in the lower-income cohort (bottom two income deciles) was substantially higher – 15.7%. The same source shows that the payment card ownership rate of the total population in Serbia was 62%, while it was below 50% for the lower-income cohort. At the same time, only 14% of low-income individuals in Serbia used mobile phones for cashless payments, which is almost half of the figure for the general population (27%). These data indicate that poorer cohorts are at a higher risk of financial exclusion, which may lead to socioeconomic exclusion as the transition to a cashless economy is progressing. Taking into account that, according to Eurostat data, more than a quarter of the population of Serbia was at risk of poverty in 2021, the overall level of cashless transition risks relating to vulnerability of the poor is considered high.

According to EBRD data, less than 30% of those aged 55-74 are able to effectively take up digital technologies, which is considerably less than the EU average (around 50%), and significantly lower than the figures for those in Serbia aged 16-24 and 24-55 (around 70% and 65%, respectively). This means the elderly population is less capable of effectively using innovative payment methods, at the same time making them more vulnerable to digital fraud and other cyber risks. With around 28% of the population of age 60+, Serbia ranks close to the Eurozone and Central and Eastern Europe (CEE) average. However, taking into account the ageing of the Serbian population, the overall level of cashless transition risks in Serbia relating to vulnerability of elderly population is considered relatively high.

Finally, cashless transition risks for those living in rural areas is mainly associated with challenges related to robust and affordable access to the Internet. With the development of ICT technology and the shift to wireless infrastructure, these risks are expected to decline. Therefore, although Serbia outperforms the Eurozone and many CEE countries in terms of the share of population living in rural areas, the overall level of cashless transition risks related to vulnerability of people living in rural areas is relatively low.

To avoid the increased risks of financial exclusion, the government and financial institutions should work together to ensure equitable and affordable access to the cashless payment system – especially for the poor, the elderly and those living in rural areas. The policy measures should be focused on facilitating access to financial services (e.g. by means of regulations, targeted subsidies, tax breaks or fee reduction schemes) and digital technologies (e.g. by providing universal mobile access to the Internet for the purpose of electronic payments) as well as on increasing financial and digital literacy.

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ADVANTAGES AND DISADVANTAGES OF CASHLESS PAYMENTS

In recent years, Serbia has seen a significant increase in the use of digital payment methods. This shift towards cashless payments has been driven by a number of factors, including the increasing proliferation of mobile payments and the expansion of digital banking services. As a result of these trends, the use of cash has declined not only in Serbia but also in many other countries. The transition to a cashless economy yields considerable macroeconomic benefits in terms of reducing the shadow economy and increasing tax collection efficiency. Empirical studies show that full convergence with EU member states of the CEE region in terms of the development of cashless payments may be associated with a reduction in the shadow economy in Serbia of 3.4% of GDP, which could generate additional tax revenues of around 1.35% of GDP (i.e. close to EUR 700 million per year).[1] The widespread use of cashless payments is associated with several additional advantages in comparison to traditional cash payments: security, lower transaction costs and greater convenience.

Security: In the case of digital payments, transactions are recorded electronically, providing a secure record of all transactions. This helps to reduce the risk of fraud and identity theft and makes it easier for consumers to dispute any fraudulent transactions. With digital payment methods, the risk of theft and loss is reduced for both consumers and businesses. Empirical data show that US retail businesses lose about USD 40 billion due to the theft of cash.

Transaction costs: Cashless payments can also reduce transaction costs. By eliminating the need for physical cash, digital payments reduce the cost of printing, transporting and storing physical currency. This can help to lower the overall cost of making transactions, making it easier for consumers to access financial services. Empirical studies on the US show that average household spends twenty-eight minutes a month travelling to get cash.

Convenience: One of the major benefits of the proliferation of cashless payments is that they offer increased convenience for consumers in terms of selection of time and method of payment. Digital payments also offer greater flexibility, allowing consumers to make transactions from anywhere and at any time, without the need for physical cash and without being limited by the working hours of the banks.

The rise of cashless payments in recent years has revolutionised the way people make transactions and handle their finances. With the increasing popularity of digital payments, many countries have been gradually moving towards a cashless society. While cashless payments have brought numerous benefits to consumers, businesses and the government, it is important to consider potential negative effects, which can broadly be categorised into six groups: risk

[1] Ranđelović, et al. (2022)

of fraud, vulnerability to cyber-attacks, increased dependence on technology, higher fees, privacy concerns and increasing risk of financial exclusion.

Risk of fraud: The use of cashless payments is associated with a set of security risks. For example, the use of debit and credit cards can make people vulnerable to fraud and identity theft, which can have serious financial consequences as stolen payment credentials can be used to make unauthorised purchases. In addition, the use of online transactions and digital payment systems can also expose people to hacking and data breaches. Disadvantaged groups, who may not have the resources or knowledge to protect themselves from these risks, can be especially vulnerable to financial harm as a result of cashless payments.

Vulnerability to cyber-attacks: Cashless payments can increase the risk of cyber-attacks, as personal information and payment credentials are stored electronically, making them easier for hackers to access. This could result in the loss of sensitive information, such as bank account or credit card details. This risk is also more pronounced for low-educated and elderly cohorts with lower levels of digital skills.

Increased dependence on technology: If the payment system is heavily reliant on technology, any disruptions or malfunctions could result in a significant impact on the economy and society. For example, a widespread outage of the payment system could prevent people from making necessary purchases or transactions. This is of special importance for low-income cohorts, who have no alternative financial buffers.

Potential for higher fees: Some non-cash payment methods often come with the costs such as fees for using ATMs, online transactions, or debit and credit cards, which may be higher than the cost of using cash. This could disproportionately affect low-income individuals or those who are already struggling financially. Additionally, the fees for cashless transactions can add up over time, making them even more unaffordable for those who are already struggling to make ends meet.

Privacy concerns: Another issue with cashless payments is that they can compromise personal privacy. When people use cashless payment methods, they often provide personal and financial information to third parties, including banks and financial institutions, which could be used to track individual spending habits or monitor financial activity. This information can then be used for a variety of purposes, including marketing and advertising, or even sold to other companies, which may raise privacy concerns with some users. Although all people are exposed to this risk, those with lower levels of education (and income), as well as those with lower levels of financial and digital literacy and awareness of the importance of personal data protection can be especially at risk in this regard.

Increased risk of financial exclusion: One of the main issues with cashless payments is that they are not accessible to everyone. Cashless payments can potentially exclude certain groups of people who do not have access to electronic payment systems or the skills or financial resources to participate in cashless transactions, such as those living in rural areas or those who are too poor to afford banking services. This could result in their exclusion from certain types of transactions, such as online shopping or e-commerce. Eventually, these exclusions from the cashless economy could further widen the wealth gap and increase financial insecurity for these groups.

THE IMPACT OF THE TRANSITION TO A CASHLESS ECONOMY ON DISADVANTAGED GROUPS

IDENTIFICATION OF DISADVANTAGED GROUPS

Ubiquitous access to mobile banking, fintech innovations, faster and cheaper electronic banking, and changing consumer tastes (including generational shifts) have steadily shifted the consumer financial landscape toward greater use of electronic payments. Still, many consumers want to continue using cash for a variety of reasons, such as habits, lack of trust in digital payments and the desire to maintain anonymity. On the other hand, many businesses may want to continue to accept cash, especially larger, long-established businesses that have already borne the fixed costs associated with cash management, such as vaults, cash registers, security systems and the like. Nevertheless, the trends are clear – the economy is increasingly moving toward predominantly cashless payments, and consumer and business preferences are significant drivers of this evolution. Digital innovations and the changing habits of a new generation of consumers are likely to accelerate this shift, which is probably irreversible. At this phase, the transition will imply parallel use of cash and cashless payment methods, while at a later phase some businesses could go a step further – by providing only for cashless payment options, which is already the case in some small retail stores in many advanced economies, such as the UK or Sweden.

That transition would have an unambiguously positive impact on reducing the shadow economy and on tax collection, as well as on many aspects of cost efficiency, for both businesses and consumers. However, to be able to effectively conduct transactions in a cashless environment, users need to have a bank account and a cashless payment instrument (physical or digital), while businesses need to have robust access to the Internet and basic IT hardware, software and competences. In addition, with the development of technology, physical payment cards are increasingly crowded-out by digital payment methods (e-wallet, QR code payments, etc.), for which users also need to have solid mobile payment devices (e.g. smartphones) with a robust Internet connection and the skills required for their effective use. This is particularly the case with younger cohorts and people in technologically mature markets, such as Finland and Estonia (Kantar Public, 2022).

Considering the aforesaid, it can be concluded that the transition to a cashless economy may generate risks and challenges for those without access to banking services (mostly the poor cohort of the population), those who lack a sufficient degree of digital skills (elderly and low-income/low-educated peo-

ple) and those in areas in which the digital infrastructure is underdeveloped (populations in rural areas). Therefore, for the purpose of this study, we will focus on three cohorts disproportionately exposed to challenges associated with the transition to a cashless economy – the unbanked and poor, the elderly and people living in rural areas.

CHALLENGES OF THE CASHLESS TRANSITION - INTERNATIONAL EXPERIENCE

In the economic literature and political discussions, the main argument against a substantial shift to cashless payments is that cash is primarily used by lower-income and minority groups, which is why abolishing cash would disproportionately affect these cohorts. This is indicated by several international studies, such as 2021 FDIC[2] survey, which shows that 4.5% of US households were unbanked, meaning that nobody in the household had a checking or savings account at a bank or credit union, with most of these households belonging to the lower levels of income distribution. The 2021 FDIC survey also finds that 14.1% of US households were underbanked, meaning "the household had an account at an insured institution but also obtained financial products or services outside of the banking system." These households typically have either checking or savings accounts but use products and services from an alternative financial services (AFS) provider, such as payday loans, pawn shop loans, or cheque cashing. According to the FDIC data, the share of unbanked households among low-income families (those earning less than USD 15,000 per year) is close to 20%, while ranging from 9.2% to 0.6% (among families earning at least USD 75 thousand per year) for the for the remaining income cohorts. The same study showed that payment fees for unbanked and underbanked households could add up to over USD 150 per year. A similar discrepancy is observed with respect to degree of education – the share of unbanked among those who hold no high school diploma is above 19%, while ranging from 6.8% to 0.9% for those with a high school diploma or college degree. Finally, the data also indicate that, in the US, minorities are disproportionately represented in groups reliant on cash as well as in the groups with inadequate access to banking services. The 2021 FDIC survey found that 11.3% of African-American households and 9.3% of Hispanic households were unbanked, compared to only 2.1% of Caucasian households.

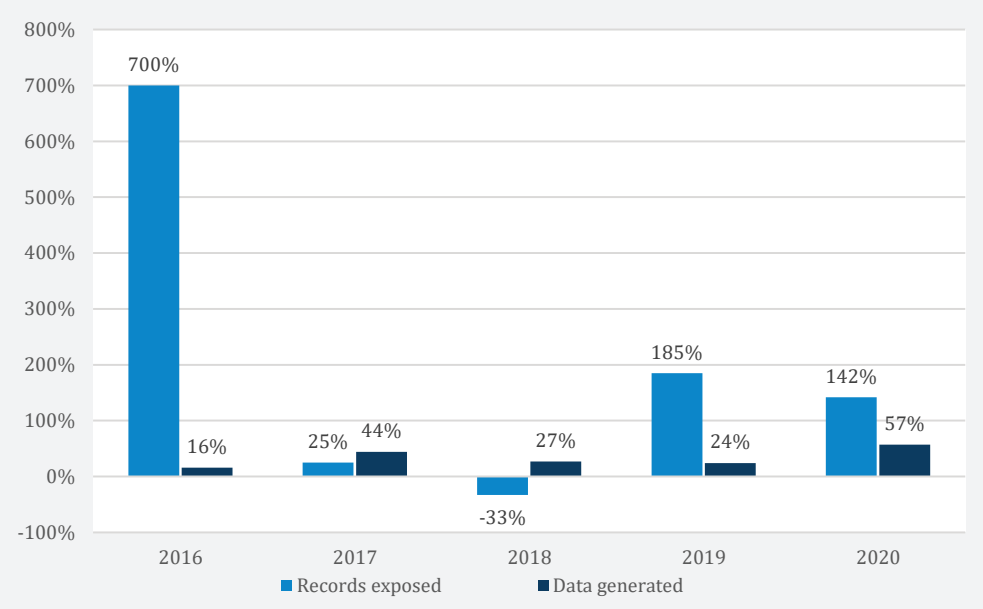
An additional argument to keep cash in businesses is linked to consumers' privacy. Proponents of cash-based transactions believe that eliminating cash payments would harm consumers in relation to privacy and security. Digital or card transactions typically allow banks, stores and providers of the relevant apps to monitor consumers' habits. Furthermore, cashless transactions can expose individuals to various kinds of fraud, such as identity theft. In 2015, CGAP[3] highlighted seven digital financial service (DFS) consumer risks faced by mobile money users. In addition, COVID-19 accelerated the adoption of DFS – in some cases without stakeholders considering the impact on consumer risk.[4] Based on a literature review and discussions with over 70 global,

[2] Federal Deposit Insurance Corporation
[3] Consultative Group to Assist the Poor
[4] Boeddu et al. (2021)

regional and country experts, the CGAP identified over 60 consumer risks, some of which appear to have increased in magnitude in recent years. The most notable new risks relate to data misuse and fraud. These include mobile app fraud, which can occur when fraudsters create fake mobile apps; synthetic identity fraud, in which new identities are created by mixing personal information from multiple people; biometric identity breaches, which can lead to the theft of physical or behavioural human data; algorithmic bias, which can occur when a computer programme produces unfair results, such as discrimination against certain groups of people; and authorised push payment fraud, which can occur when a customer is forced to transfer his or her money to an account controlled by the fraudster under the guise of being a legitimate payee. Elderly people and those with a low education and a low degree of digital competence are especially vulnerable to the above-mentioned risks.

Other consumer risks such as data breaches, SIM swap fraud, aggressive marketing and collection practices, poor dispute resolution, and liability allocation risk are not new, but have become more acute due to the modularisation of the financial services industry and the wide reach of digital technologies. Worryingly, the rise in some risks has outstripped the pace of technological adoption and digital financial inclusion. For example, the number of records exposed globally increased by 4,550% between 2015 and 2020 (from 800 million to 37.2 billion), while data created over the same period increased by 314% (from 15.5 zettabytes to 64.2 zettabytes). In three of the last five years, the annual percentage increase in the number of compromised records was greater than the increase in the amount of data created. Excluding 2016, which was an outlier, the average annual percentage increase in compromised records was 80%, compared to an average annual increase in the amount of data generated of 38% (Figure 1). In addition, between 2019 and 2020, the increase in globally exposed datasets (142%) and globally generated data (57%) outpaced the increase in the global smartphone penetration rate (4.6%) and the increase in the number of active mobile accounts (17%). It should be noted that some compromised records have not even been reported, while the average time to

Figure 1: Data created vs. records exposed – globally



Source: Muelnga & Duflos (2021). The Evolving Nature and Scale of Consumer Risks in Digital Finance, CGAP, https://www.cgap.org/blog/evolving-nature-and-scale-of-consumer-risks-in-digital-finance

detect and contain a data breach has increased from 275 days in 2015 to 287 days in 2021.

Since 2015 there have been numerous reports in China, India, Indonesia, Kenya, Nigeria and the Philippines of emerging digital credit products and distribution channels, such as mobile apps and peer-to-peer platforms, that have exposed consumers to various risks. These risks include mobile app fraud, privacy intrusions and abusive debt collection practices that can lead to over-indebtedness. As evidence from Kenya and Tanzania shows, over-indebtedness affects the resilience of low-income people, as victims often adopt negative coping strategies, such as reducing their food purchases or not paying school fees for children.

According to a 2022 report[5] published by the Royal Society for Arts, Manufactures and Commerce (RSA), as many as 10 million individuals in the UK may be left struggling with their finances as the UK moves toward a cashless society. Based on the same report, almost half the population (48%) believe that a cashless society would be personally harmful. Concerns raised in the research include a rise in isolation, digital fraud, an inability to manage money, and debt. Unquestionably, COVID-19 has had a significant impact on how cards and digital payments are used, as has the decline in availability of free cash machines. All of this is resulting in a world where elderly people face a very real risk of trying to operate in a cashless society without sufficient knowledge, skills, safeguards, and confidence to do so.

While cashless payments have the potential to provide numerous benefits, they can also have a negative impact on certain groups of people, particularly those who lack access to financial services and those with a low level of financial and digital literacy. However, it is not only technically disadvantaged population groups that are exposed to often unintentional discrimination in a society without cash. Deliberate and non-deliberate biases can arise on the basis of data profiles created by fintech companies with access to customers' financial habits and social networks, These profiles can also be shared with others, sold for profit, or exploited by hackers. Nevertheless, this highlights how important it is for governments to ensure the financial inclusion of people who are not able to participate in the digital environment. This has resulted in a number of governments taking action. For instance, the French government has already banned merchants from refusing cash or charging customers a different price depending on the payment method. Similarly, in Sweden, where there was an initial willingness by the majority of Swedish people to move to cashless payments, mounting opposition has led to the Swedish government issuing a regulation obliging banks to offer a minimum level of cash services.

[5] Hall et al. (2022)

Box 1: Benefits of cashless payments for disadvantaged groups

The focus of this study is the analysis of the impact, i.e. the risks that cashless payments carry for disadvantaged groups, in order to profile proposals for public policy measures that would enable these risks to be effectively managed in the process of a gradual transition to a cashless economy. However, it should be pointed out that the transition to cashless payment methods also implies a number of benefits, some of which are particularly important for disadvantaged groups. According to the survey-based study conducted by Devex and Visa (2022), 81% of survey respondents identify digital and mobile payments as the top innovation for facilitating greater participation in the digital economy, while 95% of respondents indicate that digital finance has the potential to foster socioeconomic inclusion and equity. Major benefits of cashless payments for disadvantaged groups will be discussed in more detail below.

Reduction of exposure to the risk of corruption - Since there is a written record of the realization of cashless transactions, the expansion of the portfolio of cashless transactions would reduce the scope for corruption and the exposure of people to the risks of corruption. This is especially important for persons with a low level of education, the elderly and persons with some types of disabilities, as well as refugees, who, due to a lower level of information and competences or due to weaker integration into society, are more often exposed to the risks of demanding corrupt actions. According to estimates by the World Economic Forum, USD 1.26 trillion is lost annually in developing countries to bribery, corruption, theft and tax evasion. Since we are talking about countries whose inhabitants represent lower income groups, viewed at the global level, a more significant suppression of corruption in these countries would have an additional element of fairness from a global perspective.

Reducing exposure to predatory financial practices - Persons with a low level of income constitute the dominant part of those who do not use banking services, which makes them directed towards the use of financial services in the informal sector. This makes this category particularly vulnerable in terms of exposure to predatory arrangements (e.g. in terms of lending) or fraudulent arrangements regarding the payment of income or making payments. Encouraging the inclusion of these categories in the flows of the formal financial system and the use of cashless payment methods would further decrease the number of persons within this vulnerable group and reduce their exposure to risks associated with predatory financial practices.

Fostering social-economic inclusion of persons with disabilities - The transition to cashless payment methods opens up new opportunities for stronger social-economic inclusion of persons with disabilities. Thus, the transition to digital payment methods (e.g. via mobile banking or using payment cards) enables persons with disabilities to make economic transactions in a more independent, efficient and comfortable way than is the case when transactions are made in cash. In addition, the development of new digital solutions adapted to persons with disabilities (e.g. those with impaired vision) also increases their safety, i.e. reduces the possibility of fraud by such persons in the payment process.

Encouraging the socio-economic inclusion of people from rural areas - Enabling transactions to be carried out digitally or without prior acquisition of cash is especially suitable for people living in rural areas, among whom the majority are often older people, as well as the population with a lower level of education and income. Accordingly, the affirmation of cashless payments represents an opportunity for more effective inclusion of those persons in economic flows with significant savings in time and other transaction costs associated with doing business through physical presence and with cash payments.

Although women do not represent a typical disadvantaged group such as the poor, low educated, refugees or persons with disabilities, it should be noted that the digitalization of financial services represents an opportunity to strengthen the socio-economic position of women, especially in developing countries. Digitization of financial services potentially enables a greater degree of privacy and independence of women in performing economic activities, with a positive impact on the development of competences in the field of finance and digital technologies. In addition, the possibility of realizing a transaction digitally or without first going to the bank to withdraw cash, brings significant time and cost savings for people who take care of other people (e.g. children or the elderly), among whom women often represent the majority.

EXPOSURE OF DISADVANTAGED GROUPS IN SERBIA TO CASHLESS TRANSITION RISKS

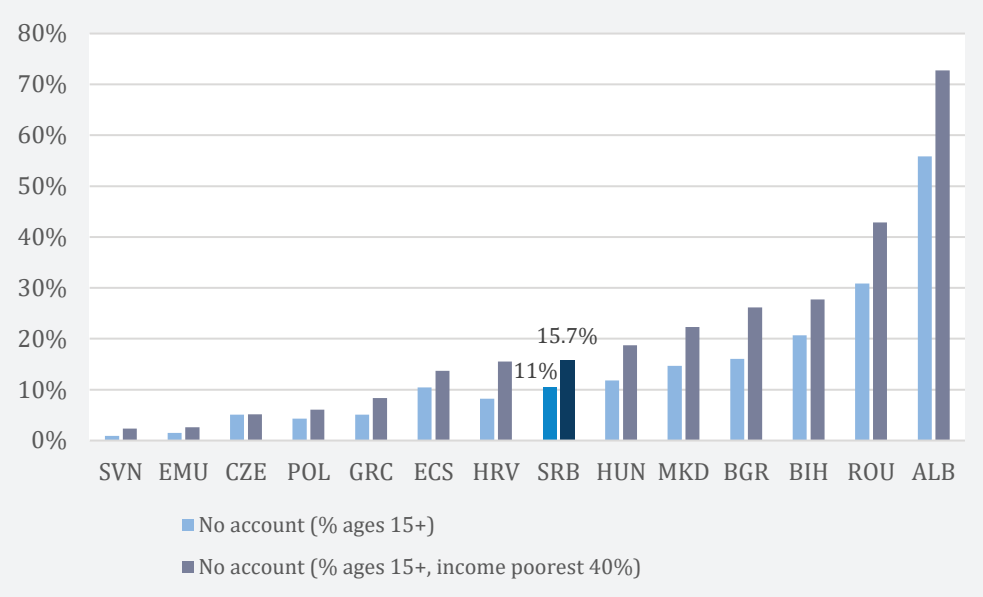
Access to financial services and effective use of cashless payments

Access to banking services is a key prerequisite for effective participation in a cashless economy. In order to analyse the population that has most to lose from further increases in cashless payments, we observed the share of unbanked and underbanked people in Serbia. For this purpose, we use World Bank data from the Global Findex 2021 survey (Demirguc-Kunt et al. 2022). The collected data show how easy respondents are able to use financial account features or repay a loan. The data for Serbia and selected European economies are presented in Figure 2.

These data indicate that that around 11% of the population in Serbia is unbanked, i.e. without access to banking services. These people would be at high risk of economic and social exclusion in the case of a fast shift to the cashless economy. In comparison to other CEE countries, Serbia is the median, with the relative share unbanked population in other countries ranging from 1% in Slovenia to 56% in Albania. Although Serbia posted better results than most South Eastern European countries, it is still lagging behind the European Monetary Union (EMU) average and many Central European countries in terms of the share of unbanked people in the total population (Figure 2).

The data also show that elderly people, as well as minorities, the poor and those living in rural areas are strongly overrepresented in the unbanked category, which suggests that these cohorts would be particularly vulnerable to

Figure 2: The share of unbanked population in 2021 (% population[6])[7]



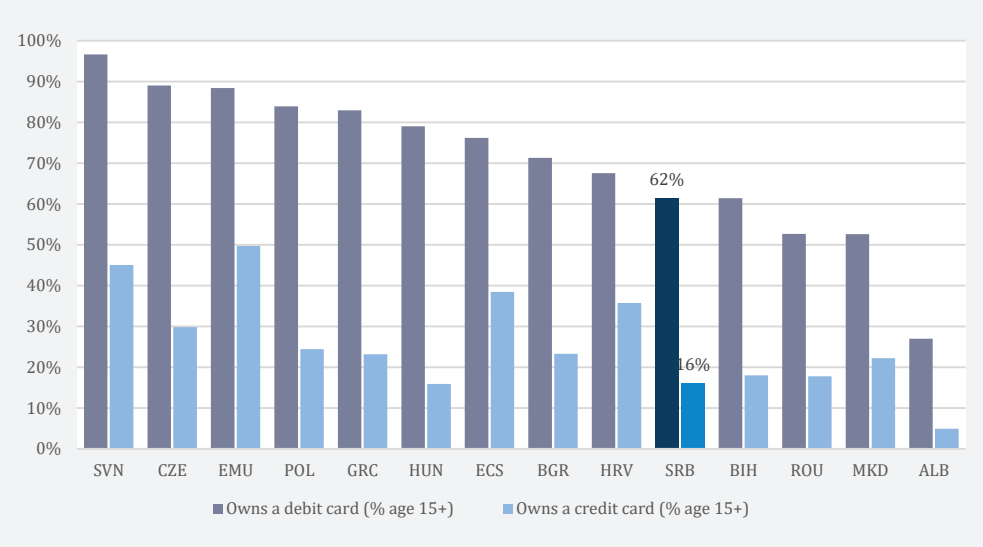
Source: Authors' calculation based on The Global Findex Database 2021, World Bank

[6] Total population refers to all the people age 15+. Income poorest 40% refers to the two bottom income quintiles (hereinafter: poor or low-income cohort).

[7] The percentage of respondents who report not having an account (by themselves or together with someone else) at a bank or another type of financial institution or that they did not personally use a mobile money service in the past year.

exclusion risks associated with a proliferation of cashless payments. According to the World Bank data presented in Figure 2, around 16% of the poorest (the lowest two quintiles) in Serbia had no bank account, which is far above the population average (11%). The share of unbanked people among the poor in Serbia is substantially higher than in the Eurozone countries (2.6%), but substantially below the CEE average (21%).

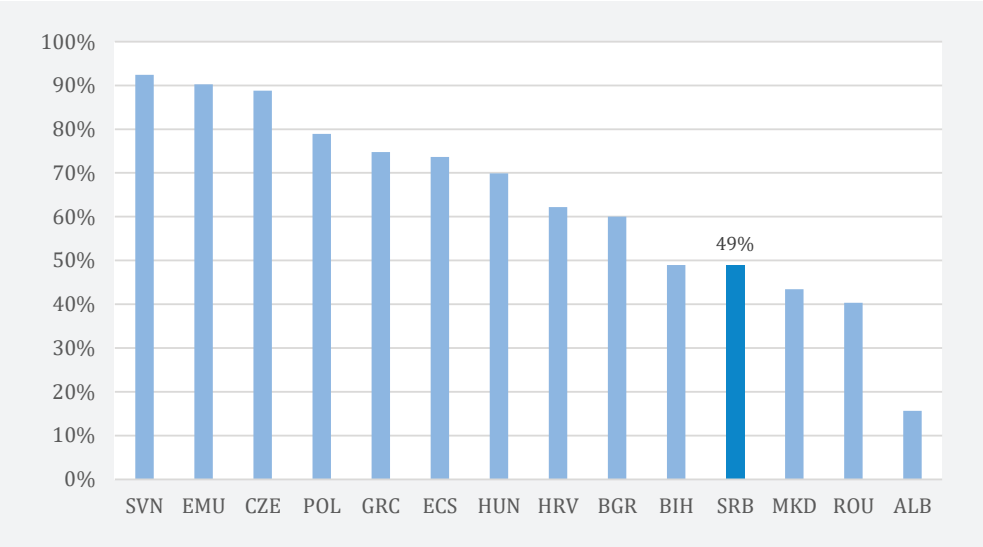
Figure 3: Payment card ownership rate in 2021 (% of total population)



Source: Authors' calculation based on The Global Findex Database 2021, World Bank

The data also indicate that the payment card ownership rate (the percentage of the 15% of the population who hold a credit or debit card) of lower-income cohorts in many European countries, including Serbia, is considerably below the population average. According to Figure 4, payment card ownership rate of low-income cohorts in 2021 stood at below 50%, which is significantly lower than in Eurozone countries (90%) and the CEE average (62%). The payment card ownership rate of poorer cohorts in Serbia is also considerably lower than the total population average (Figure 4). These indicators suggest that the poor cohorts in Serbia are more vulnerable to the risk of exclusion from

Figure 4: Payment card ownership rate in 2021 (% of low income cohort)

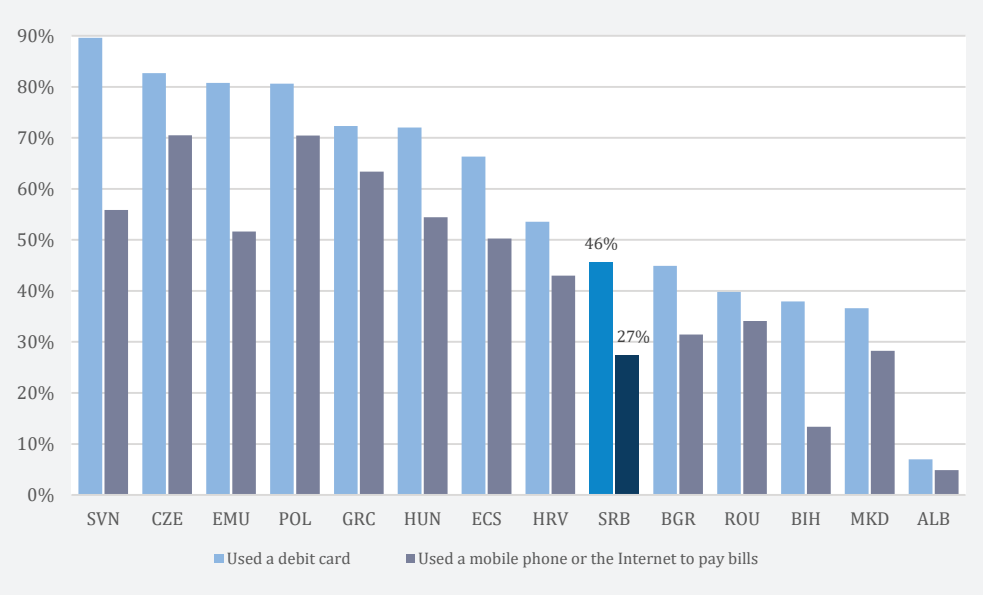


Source: Authors' calculation based on The Global Findex Database 2021, World Bank

the cashless economy than the other parts of the population, with this risk (for lower-income cohorts) in Serbia being more pronounced than in other European countries.

In view of the payment card ownership rate, the reported use of payment cards and mobile phones for cashless payments in Serbia is also relatively modest in comparison to other European countries. In spite of the substantial development of cashless payments in the past decade, Serbia, with only 46% of adult people reporting the use of a debit card for payments in 2021, ranked well below the Eurozone average (81%) and the CEE average (57%), although outperforming several CEE countries, such as Bulgaria, Romania, Bosnia and Herzegovina, North Macedonia, and Albania (Figure 5). The position of Serbia relative to other European countries is somewhat weaker when it comes to the use of mobile phones for the e-payment of bills, with only 27% of survey participants reporting the use of this particular cashless payment method in 2021 (compared to 52% in the Eurozone and the CEE average of 43%).

Figure 5: Use of payment cards and mobile phones for payments (% of total population)



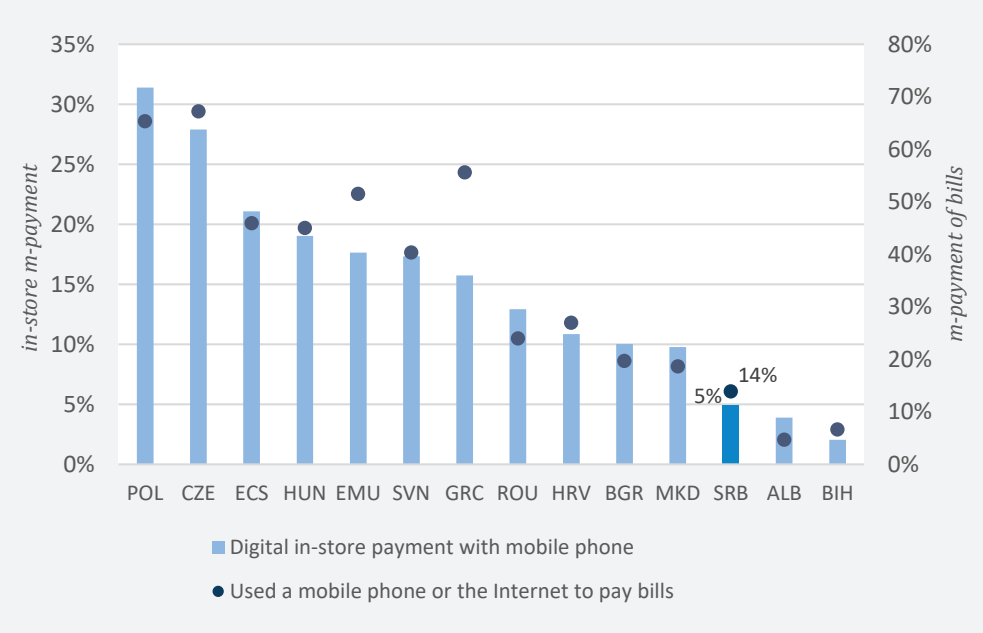
Source: Authors' calculation based on The Global Findex Database 2021, World Bank

The Global Findex data indicate that the prevalence of use of digital payment methods with lower-income cohorts in many countries, as well as in Serbia, is substantially below the total population average. As indicated by Figure 6, only 5% of the survey participants from the two bottom income quintiles in Serbia used their mobile phones to make cashless payments in retail stores, while 14% of them used mobile phones to pay their bills, which is substantially below the total population average (27%). At the same time, the prevalence of use of mobile phones for cashless payments in Serbia in lower-income cohorts is significantly below the Eurozone average and the CEE average.

This suggests a significant divide across income levels in terms of the risk of exclusion from the cashless society in Serbia, with this risk in Serbia being more pronounced than in many other CEE countries. This is especially important, keeping in mind the expected shift from traditional cards to digital payment methods, both in retail and online transactions. With a continuation

of this trend, the exposure of low-income cohorts to the risks and challenges associated with participating in cashless economy operations will be of increasing relevance.

Figure 6: Payments with mobile phone (% of low income cohort)



Source: Authors' calculation based on The Global Findex Database 2021, World Bank

Digital literacy

The dramatic development of digital technologies in the last few decades has created not only new opportunities but also risks for cohorts and countries with limited access to information and communication technologies (ICT) and limited skills in adopting and using new technologies, thus triggering the potential digital divide. The digital divide refers to variations in terms of access and use of digital technologies, thus generating inequality in access to resources necessary for economic growth in the digital era. An important reason for the modest take-up of cashless payment methods in Serbia is linked to significant discrepancies in terms of the digital skills and access to ICT across the socioeconomic cohorts.

When it comes to one of the indicators of the digital divide, according to the EBRD 2021-22 Digital Divide Report[8], the overall Digital Divide Index (DIDIX)[9] for Serbia in 2021 stood at 79. This means that four at-risk population groups[10] use digital technologies at a level which is less than 4/5 of the total use of digital technology in the country. The extent of the digital divide in Serbia is higher then the EU average (86.6). Even though the extent of Internet use in Serbia is similar to that in the EU, the composition of the DIDIX index shows that the availability and use of the Internet is much less uniform, i.e. the value of the total DIDIX index is more distant from the value of 100. This is

[8] EBRD (2021)

[9] The DIDIX represents a combination of four risk groups based on sociodemographic factors in relation to three individual indicators of the acceptance of digital technology.

[10] People over 55 years, women, unemployed and those with elementary educational attainment.

especially pronounced with vulnerable groups such as people over 55 years or the population with a lower education and income.

The EBRD's 2021-22 Digital Divide Report on the degree of digital divide within countries, which measures how the use of digital technologies varies across individuals and firms with different characteristics, suggests that while individuals with medium levels of education and income and the middle-aged have been catching up with the most digitally literate, older individuals and those with lower levels of education and income are increasingly being left behind. Although the digital divide, according to the same report, was narrowing between 2015 and 2020, the divide between the elderly, low educated, and poor, on one hand, and the other socioeconomic cohorts, on the other hand, is still pronounced. The results from the EBRD study show that individuals who were at an intermediate level of use of digital technologies in the observed period achieved the greatest benefits from digital transformation. On the other hand, individuals older than 55 years and those with a lower level of education and income posted the slowest rise in the use of digital technology. It is noted that since 2015 these cohorts have increasingly been lagging behind the cohorts with the highest degree of use of digital technologies. The widening digital divide across the socioeconomic cohorts may generate a vicious circle where the digital division reinforces socioeconomic divisions, and then income inequality and unequal opportunities further deepen the digital divide.

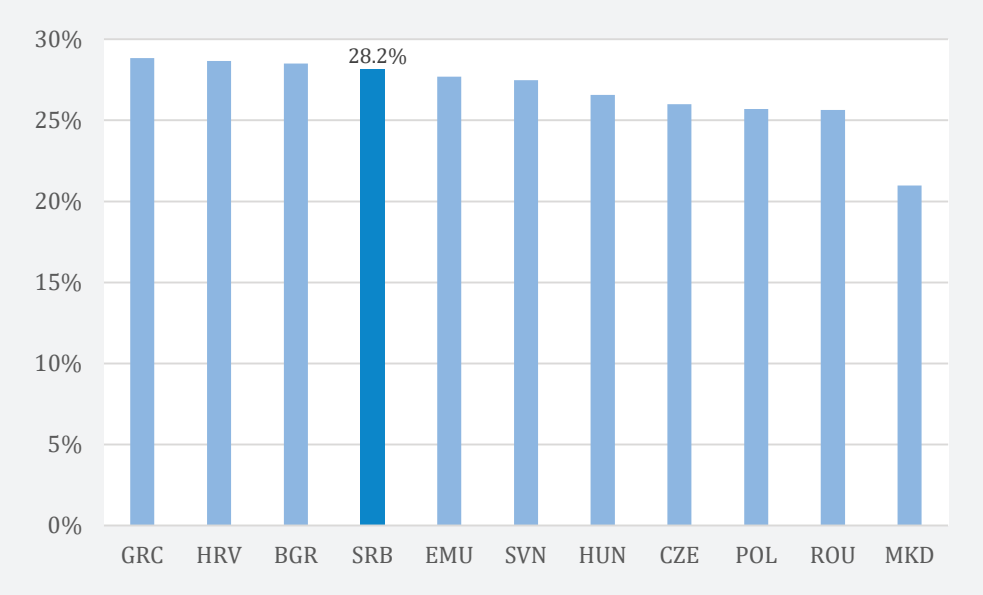
Similar tendencies were noted within Serbia. In 2021, only 31% of individuals from the age group of 54 to 77 years used the Internet to find information in connection with the purchase of goods and services, which is substantially below the EU average (51%). Unlike Germany and the average of the EU, where the divergence between individuals aged up to 55 and those older than 55 was much less marked, in Serbia this difference was more noticeable. Individuals older than 55 years and those with a lower level of education achieved the least progress in the use of digital technologies. Higher prevalence of the digital divide in the elderly population is also noticed in Serbia. Cross-sectional data on the use of digital technology by individuals belonging to different ages and levels of education in 2021 in Serbia, in Germany and at the EU average show that the digital divide is more pronounced among the older population in Serbia in comparison to the EU average[11]. These data also indicate that the digital divide between individuals with different levels of education aged 55 to 74 is much more marked in Serbia than in the countries of the European Union. In this group (55–74), less than half of all individuals with a higher education in Serbia had the minimum basic digital skills, while this percentage among individuals with a primary education was only 2%.

[11] Mitrović (2022)

EVALUATION OF THE CASHLESS TRANSITION RISKS FOR DISADVANTAGED GROUPS IN SERBIA

Since the elderly, the poor, and those living in rural areas are identified as particularly vulnerable to the risks and challenges associated with the transition to a cashless economy, the overall country-level risks for vulnerable groups heavily depend on the relative share of these cohorts in the total population.

Figure 7: Share of people age 60+ in total population in 2021 (%)

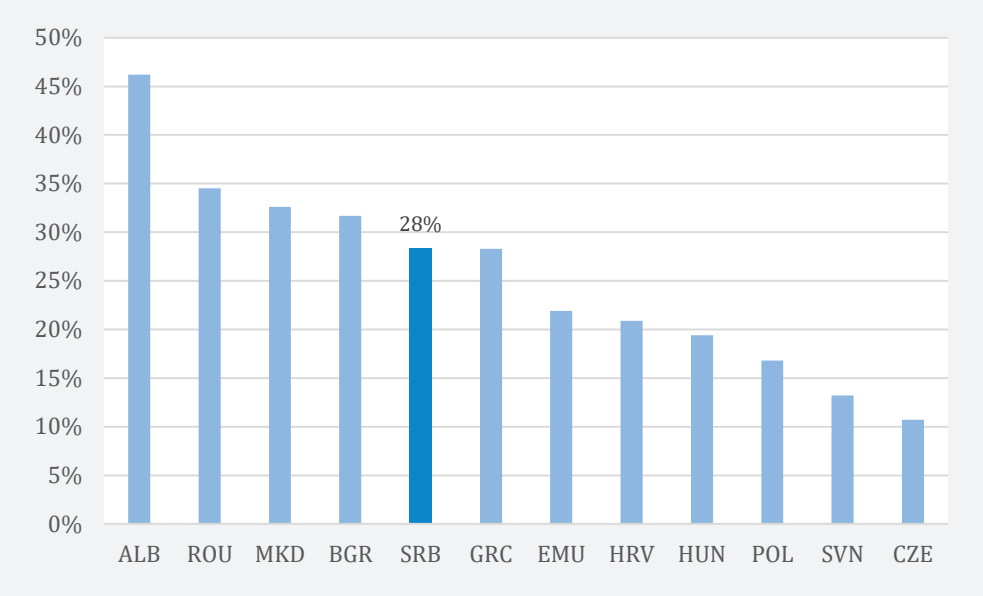


Source: World Bank Database

The data presented in Figure 7 show that in 2021 people of the age of 60+ accounted for around 28.2% of the population, which is close to the Eurozone average and the relative share in the other CEE countries, with the exception of North Macedonia. However, the data also show that the relative share of the 60+ population in Serbia increased considerably, by 2.5 percentage points, from 2015 to 2021. These data together with the data on the low level of digital competence of the elderly in Serbia suggest that the cashless transition risks in Serbia associated with the challenges of the elderly population to effectively participate in the cashless society are relatively high. Since Serbia's population is ageing, the relative share of the elderly is expected to rise, which suggests that public policies aimed at addressing the challenges of the elderly population linked to a cashless transition will be of increasing importance. In this respect, the enhancement of their digital literacy would be of fundamental importance.

According to Eurostat data, sourced from the Survey on Income and Living Conditions (SILC), in 2021 approximately 28% of the population in Serbia were at risk of poverty and social exclusion, which is considerably more than the Eurozone average (21.9%) and the CEE average (25%). The data presented in Figure 8, however, show that several countries from South Eastern Europe (Albania, Romania, North Macedonia and Bulgaria) had significantly higher rates of people at risk of poverty and social exclusion. In addition, the SILC data signal that the rate of being at risk of poverty in Serbia declined by more than 11 percentage points from 2015. Since more than a quarter of the popu-

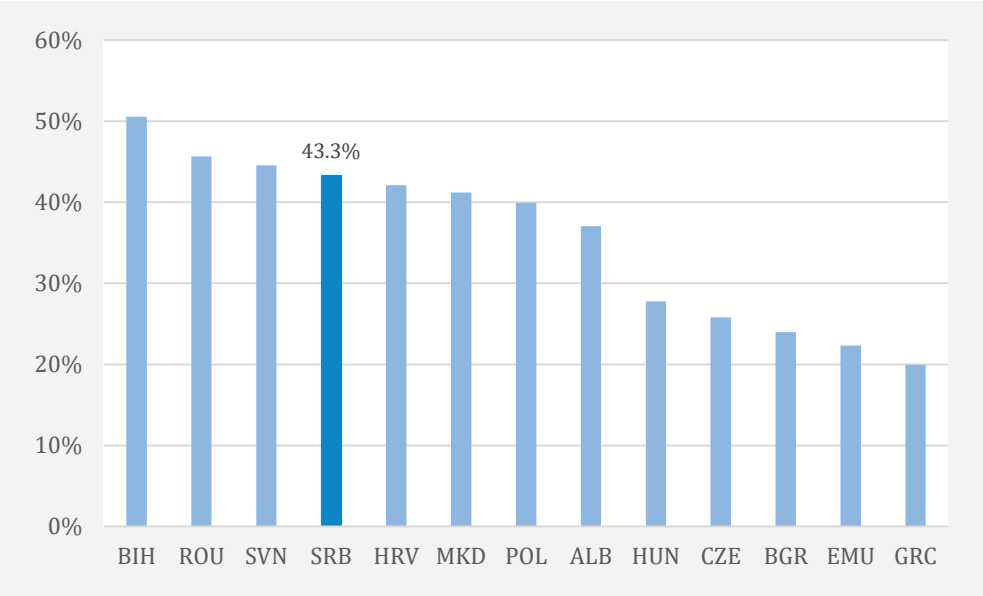
Figure 8: Share of people at risk of poverty and social exclusion (%)



Source: Eurostat database

lation in Serbia is at risk of poverty and social exclusion, and empirical studies show that poor cohorts are also at risk of exclusion from financial services, tackling risks to the poor cohorts in relation to a cashless transition in Serbia are of crucial importance in order for a large part of the population not to be left behind in this process.

Figure 9: Share of rural population in the total population (%)



Source: World Bank database

Finally, the data in Figure 9 show that more than 43% of the total population in Serbia live in rural areas, which is almost double the Eurozone average (23%) and substantially higher than the CEE average (36%). Since rural communities are also considered vulnerable to the risks associated with a cashless transition because of weaker broadband infrastructure and mobile connectivity, the data on the urban-rural structure of the population indicate that these risks in Serbia are somewhat more pronounced than in developed European countries and the CEE region. However, as the share of population living in rural areas in Serbia is decreasing slowly but steadily and the quality of ICT infrastructure is improving, these risks are expected to be less significant in the future.

CONCLUDING REMARKS AND POLICY CONSIDERATIONS

The retail financial services market is inherently complex, considering the speed with which technological advances and other innovations enter the market, thus creating challenges for regulators charged with ensuring a stable, secure and equitable financial system and for businesses and consumers targeted by new products and services. Mobile devices, agent networks and software applications have changed the way people move and manage their money in all regions of the world. Although millions of people can take advantage of these offerings, doing so requires access to a mobile device, sufficient income to afford the cost of mobile network access and digital skills, such as the ability to activate a digital wallet or account, navigate user interfaces, manage passwords and use authentication services.

While cashless payments offer many benefits for the general population, it is important to take into account the potential impact that the transition to a cashless economy may have on disadvantaged groups. International studies show that the elderly, the poor, and those living in rural areas can be particularly affected by an abrupt transition to a cashless society. One of the main challenges for disadvantaged groups is access to technology. Digital payments require access to a smartphone or computer as well as an Internet connection. This can be a significant barrier for disadvantaged groups who may not have access to these technologies, or who may not be familiar with how to use them. Another issue is the potential for financial exclusion. Digital payments are often linked to bank accounts, and many disadvantaged groups may not have access to traditional banking services. This can limit their ability to participate in the cashless economy and make it more difficult for them to enjoy the benefits of cashless payments.

Finally, there is also a risk that cashless payments may increase the financial insecurity of disadvantaged groups. With cashless payments, there is a greater reliance on technology and internet connectivity. Therefore, loss of internet connectivity or a technical failure could mean consumers who may not have any alternative means are prevented from accessing their funds.

According to the data from the relevant international organisations, in spite of the significant development of cashless payments in the past, Serbia underperforms in comparison to 19 Eurozone countries and CEE countries in terms of citizens' access to banking services, use of payment cards and use of other mobile/digital payment methods. At the same time, the results for lower-income groups with regard to these aspects are substantially weaker than the total population average, which suggests that poor individuals pose the most vulnerable social cohort in terms of their exposure to the risks and challenges associated with the transition to a cashless economy. This is especially important given that more than a quarter of the population in Serbia are considered at risk of poverty and social exclusion. Considering the large

(and growing) share of the elderly population in Serbia and their low level of digital literacy, this cohort can also be regarded as particularly vulnerable to the risks associated with a cashless transition. Finally, although the share of the population living in rural areas in Serbia is higher than in other European countries, taking into account that this share is decreasing and that technology is developing rapidly, the risks associated with the cashless transition due to the urban-rural divide are considered relatively low.

To mitigate the growing risks of financial exclusion, the government and financial institutions should work together to ensure equitable and affordable access to the cashless payment system. Considering our findings in terms of the risk assessment, the public policies in Serbia aimed at mitigating the cashless transition risks for vulnerable groups should especially be focused on low-income and elderly cohorts. For the low-income cohorts, the cashless transition challenges come from lack of access to financial services and lack of digital skills since relative income level is systematically linked to the level of education. Therefore, action undertaken by the government and financial institutions should be focused on facilitating access to financial services (e.g. by means of targeted subsidies, tax breaks or fee reduction schemes) and digital technologies (e.g. by providing universal mobile access to the Internet for the purpose of electronic payments) as well as on increasing their financial and digital literacy. On the other hand, public and corporate policy measures targeted at elderly cohorts should primarily focus on development of financial and digital literacy.

Since lack of digital skills is one of the key bottlenecks for effective inclusion of vulnerable groups into digital economy, this barrier should be addressed by means of a comprehensive set of policy actions. As indicated by OECD (2018) "policy makers should draw on available data and research to develop or fine-tune core competencies frameworks for the target groups identified, and develop appropriate financial education content in co-operation with relevant stakeholders." In that respect, policy makers are expected to focus on the development of digital financial literacy competences in three fundamental areas[12]: *i*) Building trust in digital financial services and technological innovation – by raising awareness of the portfolio of digital financial services, their risks and benefits and the fact that some services are rather informal and unregulated, developing understanding of the consumer rights and obligations in the digital world, and the implications of digitally signing a contract and accepting the terms and conditions of a financial service provider; *ii*) Empowering vulnerable customers to counter new types of exclusion – by training them to appropriately manage their digital footprint in effective and safe manner; *iii*) Protecting consumers from vulnerability to digital crimes – by raising awareness of the existence of online fraud and of cyber security risks and developing their competences on how to mitigate those risks. Addressing these issues and raising digital financial literacy would require a multi-pillar policy agenda, which should include effective design and implementation of the communication campaign on the benefits and risks related to digital financial services, informing users on the reliable sources of information on provision of digital financial services, integrating more thoroughly and explicitly the financial and digital literacy into formal education programmes and raising awareness of

[12] For more details see OECD (2018)

the digital crimes and customers' rights and responsibilities in that respect, through marketing campaigns and education system. It should be noted that while public policy measures and the activities of financial institutions in relation to mitigating the risks associated with digital security and privacy protection are of universal importance, it should be stressed that these policies are of utmost importance for the above-mentioned disadvantaged cohorts due to their lower level of education and modest level of digital skills.

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