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# PROMOTION OF THE TRANSITION TO A CASHLESS ECONOMY: INTERNATIONAL EXPERIENCE AND RECOMMENDATIONS FOR PUBLIC POLICIES IN SERBIA

Saša Ranđelović
Svetozar Tanasković

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

# EXECUTIVE SUMMARY

In the previous period, Serbia achieved a noticeable progress in developing a cashless economy, which was further accelerated during and after the pandemic crisis by the development and increased use of traditional methods of cashless payments (e.g. payment cards) and technologically innovative methods (e.g. instant payments, mobile and electronic banking, etc.). However, the results of the comparative analyses show that there is still room for further development and acceleration of the cashless transition in Serbia, with the aim of reaching the developed European countries in terms of financial inclusion, the development of cashless payment acceptance infrastructure, and the relative share of cashless payments.

All of this suggests that there is room for further accelerated development of the cashless economy in Serbia, for which it is necessary to take a number of public policy measures that would encourage both merchants and consumers in Serbia to switch to cashless payment methods, by making the cashless payment options more efficient and profitable for them. The introduction of cashless payments imposes additional costs on merchants for acquiring and maintaining acceptance infrastructure and paying merchant fees, and on consumers for holding and using cashless payment instruments. On the other hand, cashless payments reduce merchants' cash management costs and offer time savings to consumers. From a governmental and societal perspective, the transition to cashless means of payment has a particular impact on reducing the shadow economy. The results of econometric analyses show that increasing the use of cashless means of payment in Serbia to the average of Central and Eastern European countries (CEE) can lead to a significant increase in tax revenues in Serbia, by over 1.3% of GDP (Randjelovic, et al. 2022), which makes the consideration of active incentive measures in this area economically justified. When making a program of measures for developing the cashless economy in Serbia, it is necessary to consider the relevant international experience in applying such measures and the identified main obstacles to the cashless transition in Serbia.

The results of an international comparative analysis show that measures to encourage the development of a cashless economy are usually multi-layered, i.e. they include: discouraging the use of cash (e.g., by setting limits on the value of transactions that can be made in cash), ensuring the availability of cashless payments (often by introducing a general or partial obligation to offer customers the option of cashless payments), prescribing the mandatory use of cashless payment methods in transactions with the state and employees, as well as a number of direct and indirect financial incentives for merchants and consumers (subsidies and tax breaks aimed at covering part of the costs associated with cashless payments), measures to encourage the reduction of the costs of merchant fees (through limiting fees and encouraging competition), as well as educational and promotional campaigns.

According to the results of research conducted on a representative sample of businesses and entrepreneurs (NALED 2022), the main barriers to the further spread the supply of cashless payment options are the costs associated with the offering cashless payments, as well as the perception of the complexity of the process of implementing and using cashless payment methods. From the perspective of consumers in Serbia, according to a survey conducted on a representative sample (NALED 2022a), the main obstacles to the wider use of cashless payments are: insufficient information about the benefits of cashless payments, the lack of cashless payment instruments (e.g., payment cards), and the fact that cashless payment options are often not available in retail outlets.

Based on the relevant international experience and the mentioned barriers (on the supply and demand side) for cashless payments in Serbia, a portfolio of potential measures has been identified, which could bring about a noticeable shift in the cashless transition, with the aim of the cashless economy in Serbia reaching the average of the CEE countries in the medium term and the European average in the long term. For the program of measures to encourage the cashless transition to be effective and sustainable, it needs to focus on crucial supply and demand side barriers and be based on positive international experience, as well as be fiscally sustainable and cost-effective (in terms of regulatory costs). Such a program should include three sets of measures-regulatory, financial, and educational-promotional.

In the area of regulatory measures, it would be justified to consider the possibilities of lowering the value of transactions that are allowed to be settled in cash, introducing the obligation (partial or general) to offer the option of cashless payments, prescribing the obligation to pay wages to employees and all other payments made by the state to natural persons (pensions, social assistance, subsidies, etc.) to be paid without cash, while maintaining special protective provisions for disadvantaged groups, introducing the possibility of cashless payments in all public institutions and legal entities of the government, further encouraging competition in the market for cashless payments, and to ensure guaranteed minimum access to the Internet for the use of all digital financial services.

Regarding financial incentives, special emphasis should be placed on incentives for traders based on those realized under the “Better Way” program. This can be achieved through a joint action of the government and financial institutions to provide funds that would partially or fully subsidize the costs of acquiring acceptance infrastructure, the costs of using the acceptance infrastructure (especially technologically advanced and more cost-effective), and the costs of merchant fees - for a period of up to three years, which is a sufficient amount of time for the cashless payment methods to become more deeply ingrained in the business models of merchants, and then allowing for a double deduction of these expenses for the corporate income tax purposes. These incentives should be targeted primarily at entrepreneurs, micro and small businesses that have yet to offer the option of cashless payments. The experience gained in implementing the “Better Way” program can be used to parameterize the conditions more precisely for these incentives. In the area of consumer financial incentives, a limited rebate could be considered for consumers who make a certain number of cashless retail payments within a year.

Educational and promotional activities aimed at encouraging the development of the cashless economy could be aimed at enriching the syllabi in the formal education system with content related to cashless payments. In addition, educational campaigns aimed at raising awareness of the benefits and opportunities of cashless payments for citizens and the economy through television, informants, and targeted digital marketing campaigns on social media could also have a positive effect on removing some of the barriers to the development of a cashless economy. In terms of advertising, one option that could be considered is to redesign the "Take a receipt and win" lottery, so that the condition for winning, in addition to the fiscal receipt, is that the transaction be paid cashless.

This study describes a wide portfolio of possible measures to promote the cashless transition in Serbia, intending to stimulate public discussion on the topic and to enable policymakers to select a set of measures that could be implemented through an inclusive process of public discussions with the stakeholders, as well as to set the parameters for designing these measures in accordance with fiscal capacity of the government. In developing and implementing these measures, it is crucial to consider their potential impact on vulnerable populations, therefore, appropriate protective mechanisms should be established beforehand.

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# INTRODUCTION

In the previous period, Serbia implemented numerous institutional reforms that are directly or indirectly related to the development of a cashless economy. New regulations—the Law on Payment Services, the Law on Multilateral Interchange Fees and Special Operating Rules for Card-Based Payment Transactions, the Law on the Protection of Financial Service Consumers in Distance Contracts, and the Decree on the Conditions and Method of Determining and Verifying the Identity of a Natural Person Using Electronic Means of Communication—have largely aligned the legal framework for cashless transactions in Serbia with the regulations applicable in the countries of the European Union. Accordingly, over the past decade, Serbia has made significant progress in the transition to a cashless economy. Thus, during the period from 2011 to 2019, the relative number of payment cards (in relation to the number of inhabitants) increased by 47% in relation to the population size, indicating a rise in financial inclusion (Ranđelović et al., 2022). Similarly, the infrastructure for cashless payments has also developed - the relative number of POS terminals has increased by 64%. Due to the improvement of financial inclusion, the development of the infrastructure for cashless payments, and the application of numerous other technical and regulatory measures, there has been a substantial growth in the share of cashless payments in Serbia during this period - the value of transactions processed through POS terminals (expressed as a % of GDP) has doubled during this period. However, in 2019, Serbia's performance in terms of financial inclusion, retail infrastructure development for cashless payments, and relative level of cashless payments was significantly below the average of developed European countries as well as comparable CEE countries (Ranđelović et al., 2022). Thus, in 2019, the share of cashless payments via POS terminals in Serbia amounted to about 8% of GDP, the average of CEE countries was 15.5% of GDP, while the average of developed European countries was 24.3% of GDP.

The COVID-19 pandemic has affected behavioral patterns in various areas, including consumer habits in terms of how purchases and payments are made. This has been further encouraged by regulatory reforms aimed at reducing merchant fees. As a result, in 2020 and 2021, Serbia made significant progress in the transition to a cashless economy - in these two years, the relative number of payment cards increased by 17%, the relative number of POS terminals increased by 33%, while the share of cashless transactions in GDP increased by 37%. Other European countries also made progress in switching to cashless payment methods during the first two years of the pandemic - since the outbreak of the pandemic, almost one-third of citizens in Eurozone countries have increased their use of cashless payment methods compared to the pre-pandemic period (ECB, 2022). It can also be observed that both in Serbia and in other European countries, the structure of cashless payments has changed slightly in recent years, in the form of a gradual increase in the number and value of payments via mobile applications and other online payment methods (e.g., instant payments), although they still account for a smaller share of the total amount of cashless transactions.

The above data show that despite significant progress in the transition to cashless payments, there is still considerable room for the development of the cashless economy in Serbia to reach the average development level of comparable CEE countries. The benefits of the transition to a cashless economy are numerous. Cashless payments lead to a reduction in transaction costs for cash management (for both sellers and buyers), as well as a reduction in some aspects of security risks, and allow transactions to be carried out in a more convenient way and with less time (Ranđelović & Tanasković, 2023). In addition, one of the main benefits of the development of the cashless economy is reflected in the contribution to the reduction of the shadow economy, which has an impact on increasing the government's tax revenues and improving the equality of business conditions in the market. According to econometric research by Ranđelović et al. (2022), an increase in the relative share of cashless payments in Serbia from 8% of GDP as in 2019 to 15.5% of GDP, which was the average share in CEE countries in the same year, could lead to a reduction in the shadow economy by about 3.4% of GDP, which would result in an increase in tax revenues by more than 1.3% of GDP, i.e. by about 700 million euros per year. In order to make such a big step forward in the development of cashless payments, it is necessary to implement a coherent portfolio of measures that would promote the financial inclusion of citizens, the development of retail infrastructure for cashless payments, and incentivize citizens to use cashless payment methods.

Accordingly, this study aims to provide a comprehensive overview of the options in terms of the public policy measures that could be implemented in Serbia to facilitate and promote the transition to cashless payment methods. The identification and elaboration of a set of measures to promote the cashless transition were carried out on the basis of a review of international experiences, especially in countries that have achieved the best results in this area in the past period, as well as on the insights into the results of surveys conducted among citizens and entrepreneurs in Serbia, from which the key factors and constraints that citizens and businesses have in mind when making decisions about payment methods emerge. In this context, the second chapter of the study provides a comprehensive overview of the measures and policies implemented in other countries that have achieved the best results in the cashless transition. In the third part of the study, the main constraints to the transition to cashless payments by citizens and the business community in Serbia were identified and analyzed. Based on this, the fourth part of the study presented and analyzed a portfolio of measures and policies that could be considered for implementation in Serbia in the coming period in order to promote the cashless transition.

# SYSTEMIC MEASURES TO ENCOURAGE THE DEVELOPMENT OF A CASHLESS ECONOMY – INTERNATIONAL EXPERIENCE

Comparative international experience regarding measures and policies to promote the development of a cashless economy, especially in countries that have made significant progress, i.e., results, in this area, can provide relevant insights for identifying a potential portfolio of measures and policies that could be applied in Serbia with the same objective, taking into account the specific characteristics of the local market.

In order to identify the best international practices in promoting cashless payments, the comparative analysis focuses on the countries that have achieved the best results in terms of financial inclusion (measured by the relative number of payment cards[1]) as well as the effective development of the cashless economy (measured by the share of the value of payments via POS terminals in GDP). The results of the analysis by Ranđelović et al. (2022) indicate that excellent results in terms of financial inclusion in the past period were achieved by Luxembourg, Belgium, Malta, the United Kingdom, the Netherlands, and Croatia, while in terms of the effective development of cashless payments economy, good results were posted in Luxembourg, Portugal, Ireland, the Netherlands, Greece, Italy, and Estonia. Therefore, the comparative analysis of measures and policies to promote the development of a cashless economy will be based primarily on the experiences and practices of the mentioned countries. In addition, the focus will be on countries that are widely regarded as pioneers in the transition to cashless payments (e.g., Sweden), as well as on non-European countries that have made significant progress in the transition to cashless payments in the previous period by implementing systemic measures (e.g., Turkey, Argentina, South Korea, Brazil, etc.).[2]

The comparative analysis considered traditional economic incentives aimed at changing behavior among target groups and public policies and infrastructure improvements designed to promote greater acceptance of cashless payments. Given the multi-faceted nature of the issue, international experience shows that, in order to achieve significant progress in the development of the

[1] The selection and specification of indicators for financial inclusion and the development of the cashless economy were based on the insight into comparable studies by European central banks and works published in relevant international journals, and taking into account the availability of internationally comparable data.

[2] The information and data on comparative experience, that is, on policy in this area, come from the publications listed in the bibliography, although in some cases the data for one country come from several sources. Due to the nature of the presentation of the comparative information, i.e., the overview in the tables below, the sources for each country are not listed separately.

cashless economy, various measures have been taken that can be divided into several segments: measures to discourage the use of cash, ensure the availability of cashless payment options, promote the use of cashless payment instruments in transactions with the government, measures of financial incentives for consumers and merchants, measures to reduce the cost of merchant fees, and educational and promotional measures.

## DISCOURAGING THE USE OF CASH

The decision to choose a payment method by both the consumer and the merchant is the result of weighing the costs and benefits associated with cash or non-cash payment methods, as well as the information and knowledge they have about these options. Therefore, the high prevalence of cash transactions can therefore be seen as a consequence of imperfect information among stakeholders as well as the higher costs that non-cash payments create. In this context, one of the main costs that make cashless payment options less profitable (for merchants) is the reduced possibility of making tax savings by not reporting transactions and tax liabilities to the government. Therefore, in order to stimulate the transition to cashless payment methods, states have often taken measures that reduce profitability of tax non-compliance, i.e. to curb the advantage of paying in cash, which has an impact on changing consumer habits.[3]

One of the examples of discouraging the use of cash is demonetization, i.e., withdrawing from circulation-large denominations banknotes to discourage payment of large amounts in cash or smaller denominations in order to reduce the convenience of payment. Some well-known cases of demonetization in the recent period refer to India, which in November 2016 withdrew from circulation all 500- and 1,000-rupee bills, equivalent to 6.75 and 13.5 euros, respectively. The following month after these bills were withdrawn, the number of digital payments increased by 35 percent (Kearney & Schneider, 2018). Although this increase was temporary (most likely due to the cash shortage), six months after demonetization, the number of digital payments increased by 33% (measured by the number of transactions), i.e. by 59% - measured by value of transaction (Alper, 2020). A similar example relates to Sweden, which abolished the 50-kron coin (about € 4.5) in 2010, reducing the number of coins in circulation by 40% (Kearney & Schneider, 2018).

In addition to demonetization, in comparative practice there were other ways to reduce currency in circulation. These included higher fees for withdrawing money from ATMs or bank branches, the introduction of daily or weekly limits on cash withdrawals, and easy access to free or cheap cash deposits.

During the last decade, one of the most commonly used measures in developed countries has been the introduction of restrictions on the amount of transactions that can be settled in cash. The first restriction on cash payments was introduced in France in 2002, while most European countries started using this tool only after 2011. For example, to stop the outflow of money from banks, the Greek government introduced a limit on the amount of cash individuals can withdraw, which was accompanied by a significant increase in the

[3] One of the main factors that makes cashless payment methods less profitable for merchants than accepting cash is related to the greater opportunities that cash collection provides to avoid reporting transactions and tax obligations to the government.

number of payment card transactions and in the total value of these transactions. Thus, in 2015, the total value of transactions via payment cards in Greece amounted to EUR 818 per capita, whereas a year earlier, it was almost twice as low at EUR 428 per capita.

The data presented in Table 1 shows that many European countries have introduced limits on the transaction amount that can be settled in cash. This limit varies from 500 euros in Greece to 15,000 euros in Croatia, where some countries apply these limits only to transactions between legal entities, so the limits are even higher (e.g., Hungary). At the end of 2022, EU countries agreed to introduce a maximum cash transaction limit of 10,000 euros at the EU level, primarily to prevent money laundering, whereby the member states are free to set this limit even lower. All this is expected to lead to further reform of these limits in European countries in the coming period in order to harmonize them with the rules adopted at the EU level. In Serbia's regulatory system, there is a limit of 10,000 euros on cash transactions, which complies with the general limit set at the EU level. Among the European countries listed in Table 1, only the Czech Republic, Croatia, and Hungary have higher prescribed limits than Serbia.

**Table 1.** Limitation of cash transactions amount

| Country | Maximum amount of cash payment |
|---|---|
| Finland | 0 EUR* |
| Sweden | 0 EUR* |
| Greece | 500 EUR – for consumers, i.e. 3,000 business to business (B2B) |
| Italy | 1,000 EUR |
| Portugal | 1,000 ili 3.000 EUR – for residents i.e. 10,000 EUR – for non-residents |
| Spain | 1,000 EUR - for residents and 10,000 EUR - for non-residents |
| France | 1,000 EUR – for residents, i.e. 15,000 EUR - for non-residents |
| Denmark | 2,600 EUR (20,000 DKK) – only for legal entities |
| Belgium | 3,000 EUR |
| Lithuania | 3,000 EUR |
| Poland | 3,300 EUR (15,000 PLN) – only for legal entities |
| Slovakia | 5,000 EUR i 15,000 between natural persons |
| Slovenia | 5,000 EUR |
| Bulgaria | 5,100 EUR (10,000 BGN) |
| Latvia | 7,200 EUR |
| Serbia | 10,000 EUR |
| Czech Republic | 11,610 EUR (270,000 CZK) |
| Croatia | 15,000 EUR |
| Hungary | 40,500 EUR (1,500,000 HUF) – only for legal entities |

* If previously agreed with the customer, the merchant does not have to accept cash regardless of the amount of the transaction.

The data presented also show that in some countries (Finland and Sweden) it is practically possible to introduce a zero limit on cash payments, i.e., to eliminate cash payments completely. If this has been communicated with the customer beforehand (and is clearly indicated in the sales facility), the merchant does not have to accept cash, regardless of the transaction amount.

# ENSURING THE AVAILABILITY OF CASHLESS PAYMENT OPTIONS

The lack of a cashless payment option in a retail store often causes the increased use of cash payments. Consequently, in order to promote the development of cashless payments, many countries have introduced regulatory measures concerning the availability of cashless payment options or even the obligation to make cashless payments. Among the 14 observed countries whose regulatory measures are shown in Table 2, six countries (Algeria, Argentina, Belgium, Greece, the Netherlands, and Italy) have introduced a general obligation to provide consumers with cashless payment options. In some countries, enabling this option has been introduced as an obligation in specific sectors or for all merchants or service providers whose turnover exceeds a certain amount or who are VAT payers. The accelerated transition to cashless payment methods has been particularly noticeable in the area of public transport, so in some countries, this is now practically the only payment option for this type of service (the Netherlands, Ireland, South Korea, Luxembourg, Sweden).

**Table 2.** Regulatory measures to ensure the availability of cashless payment options

| Country | Description of measures |
|---|---|
| Algeria | - From 2021 all merchants are obliged to offer the option of cashless payment. |
| Argentina | - Since 2018, all merchants and businesses are required to accept cashless payments - only businesses operating in localities with fewer than a thousand inhabitants and for transactions not exceeding 100 Argentine pesos (0.4 euros) are exempt. |
| Belgium | - In 2016, the possibility of cashless payment became mandatory in the hospitality and hotel industry.<br>- As of 2022, all commercial enterprises are required to enable electronic payment and are not allowed to charge additional fees to customers who choose cashless payment or refuse cashless payment below a certain amount. Depending on the amount, businesses can choose which cashless payment method to offer, which must be clearly communicated to customers. |
| Greece | - As of 2016, the law has introduced the obligation to accept card payments in retail stores. |
| The Netherlands | - In Amsterdam, the use of cash on public transport was phased out between 2016 and 2018 for security reasons. From the beginning of 2023, it is no longer necessary to have a ticket for public transport, but it can be purchased contactless with a phone, credit, or debit card.<br>- As of 2019, 26 of 330 municipalities have moved to exclusively cashless payment at their public counters. |
| Ireland | - As of 2022, all taxi vehicles have been required to offer a cashless payment option. |
| Italy | - In 2014, a regulation was passed requiring retail stores and professional service providers to offer a cashless payment option for transactions over 30 euros. |
| South Korea | - Since 2001, card acceptance has been mandatory for all companies that are in the VAT system. |
| Luxembourg | - As of 2019, to increase safety, the taxi association has gradually introduced the principle of “cashless” payment, so that in a period of nine months, cash payment has been completely replaced. |

| Country | Description of measures |
|---|---|
| Norway | - As of 2017, companies with annual turnover of more than five million Norwegian kroner (approximately 500,000 euros) have been required to offer customers a form of cashless payment. |
| Romania | - Merchants with annual turnover of at least 10,000 euros are required to accept card payments.<br>- As of 2018, merchants with annual turnover of at least 10,000 euros are required to issue cash to customers with a maximum commission of 1%. |
| Sweden | - In 2013, the gradual abolition of cash use in public transport began. Since 2016, the regulations have been additionally changed so that payment in public transport is only possible without cash. |
| Turkey | - Self-employed physicians, dentists and veterinarians are required to offer the option of paying for their services through a POS terminal. |
| Great Britain | - As of 2014 payments for services in public transport vehicles can only be made cashless. |

## USE OF CASHLESS PAYMENT METHODS IN TRANSACTIONS WITH THE STATE AND EMPLOYEES

In Europe, the government collects over 40% of GDP on average through taxes and other public revenues and distributes them through public expenditures. A significant part of these transactions (almost 20% of GDP) is paid by the government to individuals in the form of employee wages, pensions, social benefits, or subsidies. A large share (30-50%) of the population typically receives income on one of these bases. Therefore, directing these payments to cashless payment methods, i.e., payments to a bank account instead of cash, can achieve significant results in terms of financial inclusion, i.e., an increase in the number of people using cashless financial services, thereby increasing the potential for the development of cashless payments.

In some countries, the legal framework goes a step further, so that the obligation to pay wages to employees applies to all employers - in the public and private sectors. The information presented in Table 3 shows that a large number of the observed countries stipulate the obligation to pay wages to employees by transferring them to a bank account (BiH - the obligation exists in the Republic of Srpska, Croatia, Slovenia, Turkey - in the case of larger companies, the UAE and Uruguay). In this context, it is also worth noting the solution applied in Poland, which is based on behavioral economics, i.e., “nudging”, where cashless payment of wages to new employees is the default option, which can be changed only at the express request of the employee. Moreover, in a large number of the observed countries, payment of pensions, social benefits, or subsidies to farmers is made exclusively by paying into a bank account (Bulgaria, Denmark, Dominican Republic, Estonia, Italy, Croatia - partially, Slovenia - partly, and Sweden). In some countries (e.g., Colombia), subsidies to farmers are paid exclusively by cashless means.

**Table 3.** Mandatory use of cashless payments in transactions with the state and employees

| Country | Description of measures |
|---|---|
| Bosnia and Herzegovina (RS) | - Obligation to pay wages to employees into a bank account |
| Bulgaria | - Obligation to pay unemployment benefits and salary benefits during sick leave into a bank account. |
| Denmark | - Obligation to pay social security benefits and pensions into a bank account. |
| Dominican Republic | - The government has provided a debit card to which social benefits are paid. |
| Estonia | - Obligation to pay social security benefits and pensions into a bank account. |
| Italy | - Obligation to pay social security benefits by payment on a debit card. |
| Colombia | - The state has provided a debit card to which subsidies and other state benefits are paid to farmers. |
| Croatia | - Obligation to pay wages to employees into a bank account.<br>- Obligation to pay unemployment benefits and salary benefits during sick leave into a bank account. |
| Poland | - Payment of wages to employees into a bank account is the default option for new employees, and at the special request of the employee it is possible to change this and make the payment in cash. |
| Slovenia | - Obligation to pay wages to employees into a bank account<br>- Obligation to pay unemployment benefits and salary benefits during sick leave into a bank account. |
| Serbia | - Obligation to pay pensions and cash benefits into the bank account, starting in 2019. Social benefits are paid through special accounts, as are subsidies for farmers.<br>- The law introduced a basic payment account guaranteed to both employed persons and those without regular income. |
| Sweden | - Obligation to pay social benefits and pensions into a bank account or debit card. |
| Turkey | - Obligation to pay wages to employees into a bank account, which applies to all companies with more than 10 employees. |
| Vietnam | - Obligation to pay wages of employees in the public sector into a bank account. |
| United Arab Emirates | - Obligation to pay wages to employees into a bank account |
| Uruguay | - Obligation to pay wages to employees into a bank account. |

## FINANCIAL INCENTIVES FOR MERCHANTS

The availability of acceptance infrastructure for cashless payments is one of the most important determinants of the cashless economy's development. In Europe, there are significant differences in terms of the development of acceptance infrastructure for the operation of cashless payments - the number of POS terminals, as the dominant type of infrastructure, varies from under 400 in Albania to almost 7,000 per 100,000 inhabitants in Greece (Ranđelović et al. 2022). On average, this infrastructure is about three times more developed in the developed European countries than in the less developed CEE countries, and the difference being even greater compared to the developing countries outside Europe. One of the main reasons for the insufficient availability of the acceptance infrastructure for cashless payments is related to merchants' costs in acquiring and maintaining infrastructure (i.e., POS terminals). In addition, the amount of fees the merchant pays to conduct a cashless transaction is also a deterrent factor for offering these payment options. With the development of technologies, new models of cashless payment are introduced, such as instant payment through merchant cash registers and mobile device applications, which has influenced the expansion of acceptance infrastructure and the reduction of the cost of cashless payment. Consequently, to increase the availability of cashless payment options, many countries have applied financial incentives for merchants (and less frequently for banks) - in the form of tax breaks or direct subsidies.

In the case of tax benefits, international practice shows that the tax credit is the dominant form of benefits, with the amount of the tax credit usually linked to the amount of fees paid by the merchant for cashless payments, with a limit on the total amount of the tax credit (e.g., in Argentina, Italy, Uruguay, etc.). On the other hand, subsidies for acquiring and maintaining the acceptance infrastructure are more often approved for purchasing POS terminals or similar equipment. In order to reduce the cost of cashless payments for merchants, other solutions observed in comparative practice, such as the promotion of competition in the market for cashless payment services, which was introduced in Belgium. Table 4 provides a detailed overview of direct and indirect incentives to reduce cashless payment costs for merchants in 11 countries where these measures were more prevalent in the previous period.

**Table 4.** Financial incentives for merchants

| Country | Description of measures |
|---|---|
| Argentina | - Along with the introduction of the obligation to accept one of the cashless forms of payment, the government offered merchants a temporary discount on the rental cost of POS terminals and the possibility of recognizing 50% of the amount as a tax credit. |
| Belgium | - A measure was adopted directing payment service providers, banks, payment institutions, and e-money institutions to allow other participants to use their infrastructure for payment transactions in order to promote competition and reduce costs for end users (Open Banking). |
| India | - An incentive of 0.5% of the transaction value (up to a value of 2,000 rupees, or about 20 euros per month) was introduced for merchants using the biometric payment system.<br>- The possibility of reimbursing merchants on the basis of merchant fees up to an amount of 1,000 rupees, i.e., about 10 euros per month, for at least 50 cashless transactions (including at least 20 transactions with different customers), with a minimum value of 25 rupees (about 0.25 euros) per transaction was introduced.<br>- From 2018-2020, banks were given a subsidy on merchant fees for all payments up to 2,000 rupees (about 20 euros) made through an Indian BHIM United Payments Interface System debit card, to reduce costs for merchants. |
| Italy | - In 2009, kiosk businesses were granted tax breaks for introducing cashless payments.<br>- In 2020, merchants whose annual turnover does not exceed 400,000 euros were offered the opportunity to exercise the right to a tax credit equal to 30% of the fee they are charged for accepting cashless payments. In 2021 and 2022, the tax credit was temporarily increased to 100% of the fee.<br>- For the same period, a tax credit in the maximum amount of 160 euros was introduced for all merchants who purchase or rent a device for accepting electronic payments. In 2022, the tax credit was increased to 320 euros. |
| Japan | - A direct subsidy was introduced for the replacement of cash-only registers with cash registers that accept cashless forms of payment. |

| Country | Description of measures |
|---|---|
| South Korea | - In 1994, a tax credit for merchants was introduced in the amount of 0.5% of the transaction value for cashless payments. In 1996, the tax credit was increased to 1% of the transaction value (maximum up to 3 million won, or about 2,000 euros per merchant), and in 2000, it was further increased to 2% of the transaction value (maximum 5 million won, or about 4,800 euros per merchant).<br>- Later, tax relief for merchants accepting card payments was introduced under the VAT and the profit tax system. The amount of tax benefits in the VAT system (as well as the deduction limit) varied over time and depending on the category of goods and services. |
| Mexico | - In 2004, a fund was established to expand the acceptance and use of electronic payments, which financed the free installation of POS terminals, enabling the installation of 205,000 terminals for merchants and increasing the acceptance network of terminals by 96% until 2006.<br>- In 2015, a subsidy was offered for the purchase of a tablet device with mPOS and accounting software for microenterprises. |
| Poland | - In 2017, the Association of Polish Banks, the Ministry of Finance and Development, and major card companies provided a 170 million US dollars grant for the purchase of POS terminals, which covers installation costs and first-year merchant fees for micro, small, and medium-sized merchants that did not offer card payment options in the previous year, as well as for those just opening a business. The cost of merchant fees was fully covered in the first year, and in the subsequent years, a limit was introduced so that the cost of fees was covered for up to 100,000 zloty (about 21,600 euros) turnover in the first year. By the end of 2022, more than 408,000 merchants with nearly 562,000 installed POS terminals had joined the program. |
| Uruguay | - In 2014, tax credits were introduced for investments in POS terminals. The tax credit rates amounted to 40% of the value of the equipment - for the numeric keypad PIN PAD, 60% of the value for the POS terminal that allows refunds, 80% of the value of the software program used, as well as exemption from VAT on all the above mentioned procurement elements, and exemption from customs duties and VAT in the case of importation of equipment/software for which there is no domestic alternative. The program ran until the end of 2017, and during this three-year period the number of POS terminals doubled. |
| Great Britain | - In March 2018, a program was introduced to provide households and businesses with access to broadband Internet. The government subsidy amounted to 3,400 pounds per household or business. If the cost of providing an Internet connection was higher than that, the subsidy recipient had to finance the price difference themselves. This contributed to creating the infrastructure prerequisites for the development of cashless payments. |

## FINANCIAL INCENTIVES FOR CONSUMERS

In order to encourage a change in consumer habits regarding the means of payment used, the practice of granting financial incentives is widespread, mainly in the form of tax benefits and less frequently in the form of subsidies or refunds. South Korea granted such incentives as early as the last decade of the 20th century, while in most other observed countries, such measures were put into practice only in the previous decade. Consumer financial incentives consist of allowing deductions from the tax base for personal income tax (e.g., South Korea), VAT rate reduction (Argentina, Greece, and Uruguay), or refunding part of the VAT for payments made with non-cash means of payment (Colombia). Incentives for legal entities, as consumers, have been granted mainly by conditioning the recognition of costs to determine the profit tax base by paying with non-cash instruments. In addition, penalties for cash payments were introduced in several countries instead of incentives for cashless payments (Greece and Ireland).

**Table 5.** Financial incentives for consumers

| Country | Description |
|---|---|
| Argentina | - In 2001, a VAT discount was introduced for customers who pay with a debit card, in the form of a reduction in the general VAT tax rate from 21% to 16% for purchases up to 1,000 pesos (about 930 euros).<br>- In 2003, incentives for credit card payments were introduced in the form of a 3 percentage point reduction in the general VAT tax rate. In the same year, a 2% discount was introduced on the purchase amount of oil derivatives paid by debit or credit card. |
| Greece | - In 2017, the Electronic Accounts Program was launched, where one of the measures to promote cashless payments provides a discount for consumers who use a payment card - as a tax credit against the annual income tax. Depending on the income class, the minimum value of transactions that the consumer must make cashless to qualify for a 22% tax credit on the value of cashless payments (up to the maximum amount determined by the income class) is set gradually.<br>- In addition to the incentive mentioned above, the same program also introduced a financial penalty if the person did not reach the minimum amount of cashless payments. The tax penalty amounted to 22% of the difference between the minimum amount of cashless payments determined by the person's income class and the actual amount of cashless transactions.<br>- Business expenses can be recognized as a deduction for taxation of business profits only if they are paid on a cashless basis. |
| Ireland | - Since 2016, the government has levied a fixed amount of 12 cents in addition to the fees charged by the bank for cash withdrawals from ATMs - up to a maximum of 2.5 or 5 euros per year, depending on the card type. |
| Italy | - In 2021, the "Cashback" program was launched - all people who make more than 50 cashless payments (using an e-wallet or card) within six months will receive a refund of 10% of the value of the completed transactions, up to a maximum of 150 euros. |
| Japan | - Starting at the end of 2019, consumers who opt for cashless payments will receive a 2% discount on purchases at large retail stores and a 5% discount on purchases at micro, small, and medium retail stores.<br>- Consumers who opt for a QR code or other digital payment method will receive points that they can use to claim the right to a discount on their purchases over the next nine months. |
| South Korea | - Individuals who pay with payment cards have the option of recognizing deductions, i.e. reducing the tax base for personal income tax. As of 2017, the deduction was 15% of the amount paid by credit card, i.e., 30% of the amount paid by debit card or other cashless instrument, whereby the amount of the deduction is limited to 3 million won (about 2,400 euros) or 25% of the total earned income, with a lower deduction for high-income individuals (over 96,000 euros per year).<br>- Since 1999, all representation expenses exceeding the amount of 50,000 won (approx. 50 euros) can only be deducted as expense for corporate income tax purposes if paid by card. |
| Colombia | - In 2014, an incentive program was launched that provides individuals with a refund of 2% of the VAT paid on purchases, provided the payment was made with a payment card.<br>- Corporate expenses that are reported as a deduction in the calculation of the corporate income tax base are only recognized if they are paid cashless. |
| Uruguay | - Since 2014, customers have been granted a rebate based on VAT in the amount of 2 percentage points, provided that the payment was made by cashless means. This reduces the VAT on purchased products and services from 22% to 20% in the case of the standard rate and from 10% to 8% in the case of the reduced rate. An additional discount of 2 percentage points has been approved for transactions worth less than 4,000 indexed units (i.e., approximately 450 euros), bringing the total discount for these transactions to 4 percentage points of VAT. |

## LIMITATION OF COSTS OF MERCHANT FEES

Since the amount of costs associated with cashless payments is, in many cases, one of the primary reasons for the unavailability of cashless payment options, states have, over time, begun implementing various regulations to limit these costs. The total fee that merchants pay for payment card transactions is comprised of a multilateral (interchange) fee and fees charged by payment systems and processors. Given the scope of the jurisdiction, regulatory measures to limit these costs primarily target multilateral interchange fees, although these often represent a smaller portion of the total merchant fee. Because the fees varied widely from country to country, after several years of litigation and consideration of alternative solutions, the EU adopted the Directive on Interchange Fees for Card Payments in 2015, with the aim of reducing the costs associated with card payments, as well as reducing the variation of these costs by country, thereby encouraging the development of cashless payments. According to the EU directive, the maximum multilateral fee for debit card payments in all member countries is 0.2% of the transaction value, while this limit is set at 0.3% of the transaction value for credit card payments. Since this EU regulation only sets the maximum fee level, individual member states have the option of lowering it further, thus making card payments even more attractive for their citizens. In most EU countries, national regulations on the level of the limit for multilateral fees are defined in such a way that the fees are limited to the maximum amount set in the EU directive, while in several countries, national regulations further reduce this fee (for payments with debit cards) (Table 6). In Serbia, the 2018 Law on Interchange Fees capped the cost of merchant fees at the level set in the EU Directive (0.2% for debit cards, i.e., 0.3% for credit cards).[4]

**Table 6.** Limitation of merchant fees for cashless payments

| Country | Explanation |
|---|---|
| Malta | - The multilateral fee for debit card payments is capped at 0.15% of the transaction value, while the fee for credit card payments is set at the level of the EU limit - 0.3% of the transaction value. |
| Luxembourg | - The multilateral fee for debit card payments is limited to 0.12% of the transaction value, while the fee for credit card payments is set at the level of the EU limit - 0.3% of the transaction value. |
| Ireland | - The multilateral fee for debit card payments is capped at 0.1% of the transaction value, while the fee for credit card payments is set at the maximum amount prescribed by the EU Directive (0.3%). |
| Netherlands | - The maximum fee for debit card payment is set at a maximum of 0.02 euros per transaction instead of 0.2% of the transaction value. |

[4] The National Bank of Serbia estimates that the introduction of these limits has led to a reduction in the average merchant fee at the POS terminal in Serbia from over 2% in 2018 to about 1% in 2022 (i.e., from 2.3% to 1.15% for transactions conducted at online outlets).

## EDUCATIONAL AND PROMOTIONAL CAMPAIGNS

To raise awareness of the benefits of cashless payments and provide reliable information about the drawbacks and risks, governments organize and implement various types of educational activities, whether through the formal education system (e.g., Canada) or through *ad hoc* educational campaigns (e.g., Luxembourg, Turkey, and India). In addition, to promote the use of cashless means of payment, several countries organized lotteries in which people paying by cashless means could participate (Greece, Ireland, Italy). For a more detailed overview of examples of educational and promotional campaigns to promote cashless payments, see Table 7.[5]

**Table 7.** Examples of educational and promotional campaigns to encourage cashless payments

| Country | Description |
|---|---|
| Greece | - In 2017, a lottery was organized for customers using payment cards. One thousand people received a prize in the form of a tax credit in the amount of 1,000 euros. |
| India | - In 2017, a digital financial inclusion program was launched, educating and informing citizens on the use of digital payments and supporting merchants in adopting digital payments.<br>- Under the same support program, a free educational channel was launched, available in English, Hindi, and regional languages, to raise awareness about various forms of electronic payments. |
| Ireland | - In 2014, the Central Bank of Ireland launched a major national education campaign to encourage businesses and the public to use online payment methods instead of cash and checks. The campaign specifically targeted beneficiaries of the social protection system, focusing on the payment of child benefits, disability allowances and compensation.<br>- In 2015, the Irish city of Cork launched the "Cork Cash Out" pilot project to encourage consumers to pay with cashless means of payment, i.e., to forgo cash - anyone who used cashless means of payment in stores participating in the program entered the pool of potential winners in the lottery automatically. Over the life of the project, the value of cashless payments in Cork increased by 157% more than the average growth recorded at the level of the whole of Ireland. |
| Italy | - In 2021, the "Super Cashback" program was launched, offering cashless consumers the opportunity to win a special prize of 1,500 euros over two six-month periods for the 100,000 payers with the largest number of transactions made through cashless means. |
| Canada | - Financial literacy has been introduced as a compulsory part of the school curriculum, and this course places particular emphasis on understanding the benefits and risks of cashless payments. The initiative is supported by banks, most of which allow children to open an account, either with their parents or independently (from the age of 13). |
| China | - In 2018, a campaign was launched to promote cashless payments by replacing monetary gifts typical of national holidays with a cashless alternative. |

5 In recent years, a campaign in the form of a "Take the bill and win" lottery was conducted in Serbia, but payment with cashless instruments was not a condition for participation in the lottery, and a sufficient condition was the enclosure of a fiscal bill. Therefore, this campaign cannot be considered as directly aimed at promoting the cashless transition, although it could indirectly have this impact.

| Country | Description |
|---|---|
| Luxembourg | - In 2014, a multidisciplinary government initiative was launched to bring together public, private, and academic stakeholders with the goal of leveraging digitization for positive change. This initiative includes measures to promote the use of electronic means of payment and to expand the acceptance network for cashless payments. |
| Turkey | - As a country with the highest rate of financial exclusion and a large proportion of young population, Turkey organizes information campaigns targeting primary and secondary school students, their parents and teachers on the principles of planning and managing personal finances. |

# IDENTIFICATION OF THE KEY LIMITATIONS FOR THE TRANSITION TO CASHLESS ECONOMY IN SERBIA

The prevalence of the use of cashless payment methods is determined by both supply-side factors (availability of cashless payment options, especially in the retail sector) and demand-side factors (propensity of citizens to make cashless payments). For measures and policies to be effective in promoting a faster transition to a cashless economy, they need to be designed to address the main barriers to such a transition from both the supply (businesses, i.e., merchants) and demand (citizens, i.e., consumers) perspectives.

## EFFECTIVE LIMITATIONS ON THE SUPPLY SIDE OF CASHLESS PAYMENT

The analysis of the key restrictions on the business side for the further spread of cashless payment options was carried out based on the results of a survey conducted among a representative sample of 1,040 registered businesses and entrepreneurs in Serbia in April-June 2022 (NALED, 2022). The research results show that about 10% of companies and entrepreneurs make cash payments, predominantly (in about ¾ of cases) for purchasing goods and services, especially when buying from small businesses and entrepreneurs.[6] Of those who make cash payments, two-fifths make these payments frequently - daily or weekly. The main reasons for paying in cash are - the lower price, the supplier's request, and the unavailability of purchases for cashless payments.

The survey of merchants' attitudes toward cashless payments was conducted among a subsample of 462 businesses, more than two-thirds of which supply goods/services to individuals, representing about 4/5 of their sales. The average number of customers in this subsample is 92 per day, and the average value of the transaction is about 16,000 dinars. These results indicate that transactions with individuals generate a large part of the companies' turnover and that many such transactions incur significant operating costs (including cash management costs). According to the existing regulations, persons engaged in retail business in Serbia may or may not have to offer the possibility of cashless payment. Among the companies included in the sub-sample, almost half do

[6] Law on the Execution of Payments of Legal Persons, Entrepreneurs and Individuals Not Performing Commercial Activity stipulates that legal entities and entrepreneurs are required to open a bank account with a payment service provider that may maintain a bank account in accordance with the Law on Payment Services (bank, i.e. the Treasury Administration) in order to hold funds in this account and to process payment transactions through this account.

not provide the option of cashless payment, although nearly one-third of them believe that cashless payment would positively impact their business.

Among the half of the companies that offer the possibility of cashless payment, card payment is the most common option, while the availability of the online payment option is modest and instant payment (by QR code) is offered to a very small extent (only 2%). The reasons for not implementing cashless payments are most often:

i) *Customer disinterest* - The frequency of responses regarding customer disinterest in cashless payments as a reason for not offering this option does not match the responses to other questions, which show that in more than 4/5 of the companies surveyed, customers ask about the cashless payment option on a daily basis. The overlap of these results may indicate that the answer about the lack of interest of customers in this type of payments as a reason for the absence of such an option in the offer hides other motives that respondents may consider less socially desirable and do not mention in the answer to the survey questions. However, the analysis of demand-side factors that follows in the continuation of this study suggests that there is room for improvement in consumers' willingness to use cashless payments.

ii) *High costs of cashless payments* – Nearly a quarter of businesses that do not offer the option of cashless payments state that providing such an option would be expensive and unprofitable because of merchant fees and the fixed costs of acquiring and maintaining cashless payments infrastructure. Accordingly, a significant portion of businesses indicates that they would be willing to implement the cashless payment option if they were offered direct financial incentives that would reduce the monthly maintenance costs of the acceptance infrastructure and if the total bank/merchant fee were reduced (e.g., to as low as 2%). On the other hand, considering that more than 2/5 of companies offering cashless payments say that it makes their business more manageable, and 63% say that it expands the market, it is concluded that more extensive education and information activities among companies that do not offer the possibility of cashless payments could positively influence the change of their attitude towards the general (un )profitability of offering cashless payments.

*iii) Complicated procedure for introducing cashless payments* - Nearly one-sixth of the companies that do not offer the option of cashless payments cite the complexity of the process to implement such a system as an important reason. Since most of the activities related to the introduction of the cashless payment option are carried out by banks, this factor can possibly be attributed to the weak organization of the business ledger system in some companies, as well as to insufficient information about the method and procedure for introducing it. Since almost all companies in Serbia have switched to the system of electronic cash registers and electronic invoices in 2022, it is possible that the views expressed in this way hide other motives that the respondents consider less socially acceptable and for this reason do not mention.

*iv) Frequent need for cash in doing business* - A significant number of businesses indicate that they do not offer the cashless option because they need cash to conduct business. This suggests that the need for cash to finance transactions conducted in the shadow economy is also one of relevant factors affecting the offer of cashless payments. Therefore, the implementation of a wide range of measures to combat the shadow economy is necessary to reduce the negative impact of this factor on the development of cashless payments.

The results of the survey mentioned above show that about a quarter of the companies that do not offer cashless payments plan to introduce this option in the next year, while more than 2/3 do not intend to introduce such an option. Among the companies and entrepreneurs that express their intention to introduce a cashless payments option, it can be said that there is an understanding of the benefits of such a step, so a system of direct and indirect financial incentives could significantly influence the decision of companies from this group to introduce cashless payments. For businesses that do not intend to consider the cashless payment option, financial incentives alone may not be sufficient to change this decision. However, it is necessary to familiarize them with the process and potential benefits of switching to cashless payments through education and information and then with the potential financial incentives for taking such a step.

**Table 8.** Restrictions and measures to increase the use of cashless payments - on the supply side

| Restrictions | Area of measures to remove restrictions |
|---|---|
| High costs of cashless payments | Direct and indirect financial incentives.<br>Educating and informing companies about the impact of cashless payments on overall cost efficiency and profitability. |
| Complicated procedure for introducing cashless payments | Consideration of possibilities for further simplification of procedures for introducing cashless payments (and integration with the system of e-fiscal cash registers).<br>Educating and informing companies about the procedure for introducing cashless payment methods. |
| Frequent need for cash in doing business | Wide range of measures to combat the grey economy |

**Source:** Authors' analysis

## EFFECTIVE LIMITATIONS ON THE DEMAND SIDE FOR CASHLESS PAYMENT SERVICES

The survey on the attitude of Serbian citizens towards the use of cashless payment was conducted in February 2022 in a nationally representative sample of 1,009 adult respondents (NALED 2022a). According to the survey results, 47% of respondents do not use cashless payment methods, while 53% of respondents use cashless payment methods, of which almost ¾ use payment cards, about 44% use electronic and mobile banking, and less than 15% use instant payment options (e.g., QR code). Respondents who do not use cashless payment methods cite the ease of paying in cash (43%) and the lack of a payment card (31%) as the main reasons. Other important reasons include insufficient familiarity with how cashless payments work, fear of payment security, privacy concerns, and lack of a retail cashless payment option. Respondents' answers also suggest that for more than half of respondents, some form of incentive - through in-store discounts and tax breaks - could encourage them to make greater use of cashless payment methods, while on the other hand, the potential effectiveness of sweepstakes in this regard is limited. The study also identified activities where the availability of the cashless payment option is insufficient. Activities identified by more than one-fifth of respondents as those in which the availability of a cashless payment option is low include hair and beauty salons, public facilities, handyperson services, bakeries, and small stores.

The results of this research provide several useful insights for designing public policy measures that could contribute to a faster development of cashless payment methods in Serbia. Overall, the obtained results suggest that policies to promote the use of cashless payment methods by citizens should address three levels:

i) *Education and information* - The obtained results indicate that four of the six main reasons for choosing the cash payment option among respondents refer to insufficient knowledge and information about cashless payments. This suggests that measures to encourage citizens to switch to cashless payment methods should primarily aim to educate and inform them about how cashless payments work, their benefits and risks.
ii) *Financial inclusion* - With nearly one-third of respondents reporting that they do not have a payment card[7], the second set of measures targeting citizens should be aimed at further promoting their financial inclusion.
iii) *Increasing the availability of cashless payment option* - Since the lack of cashless payment options, especially in certain industries, has been identified as a barrier to the cashless transition, public policies should aim to redefine the regulatory rules regarding the availability of cashless payments, as well as provide direct and indirect incentives for the development of retail infrastructure for cashless payments.

**Table 9.** Restrictions and measures to increase the use of cashless payments - on the demand side

| Restrictions | Area of measures to remove restrictions |
|---|---|
| Insufficient awareness and knowledge of citizens about cashless payments | Education and information - Educating and systematically informing citizens about the functionality, benefits and risks of cashless payments. |
| Not having instruments of cashless payment | Financial inclusion - Increasing the number of citizens who own cashless payment instruments. |
| Insufficient availability of cashless payment options | Availability of cashless payments - Regulatory reform and financial incentives for retail infrastructure development for cashless payments |

**Source:** Authors' analysis

[7] According to NBS data, over 10.7 million payment cards were issued in Serbia in the last quarter of 2022, of which 4.9 million cards were active. Considering that there were about 6.8 million inhabitants in Serbia according to the 2022 census, this means that there were on average 72 active cards per 100 inhabitants.

# MEASURES TO PROMOTE THE TRANSITION TO CASHLESS ECONOMY IN SERBIA

In the previous period, a number of reforms were implemented in Serbia regarding the institutional framework for making cashless payments, which included, among others, the limitation of merchant fees and the introduction of a modern infrastructure for instant payments, which, together with the pandemic and other factors, influenced the acceleration of the cashless transition. Despite the strong development of the cashless economy in the past period, which was particularly intense during and after the pandemic crisis, there is still a significant negative gap between Serbia and the average of European countries in this respect, both in terms of supply-side factors (availability of cashless payment options) and demand (financial inclusion of citizens), as well as in terms of the level of development of the cashless economy achieved (share of cashless payments in GDP). To reduce and eventually eliminate this gap, it is necessary to apply a wide range of coordinated measures and public policies.

A coherent program of measures to promote the further development of cashless payments in Serbia should be based on clearly defined objectives. The goal of a comprehensive and coherent program of measures and policies to develop a cashless economy should be to further accelerate cashless transition and reach developed European countries in all three relevant segments - financial inclusion, availability of cashless payment options and relative level of development of cashless payments in Serbia.

To achieve these ambitious goals, a wide range of measures and policies must be implemented in a timely and organizationally coordinated manner, the selection and design of which should be based on principles, i.e., criteria that would ensure that the measures are efficient and sustainable. To ensure this, the measures and policies must be:

i) Aimed at removing the identified key barriers to the development of the cashless economy in Serbia on the supply and demand side;
ii) Based on relevant international experience, while respecting the specificities of the domestic market;
iii) Fiscally sustainable - in the sense that they do not lead to a significant increase in the fiscal deficit and public debt, even in the short term. If the implementation of the program of measures leads to a more significant increase in tax revenues in the medium and long term due to the reduction of the shadow economy, this fiscal space should be used for a more significant reduction in distortionary taxes and/or an increase in the productive categories of public expenditures;

iv) Regulatory efficient - in the sense that their application does not lead to a greater increase in regulatory costs for market participants: Consumers, merchants, financial institutions, card companies, and the government.

Accordingly, the program of measures and policies to promote the development of a cashless economy in Serbia should include regulatory measures, financial incentives for both merchants and consumers, as well as educational and promotional measures. In this context, it should be emphasized that measures to develop the cashless economy should target not only traditional instruments of cashless payments (payment cards), but also technologically innovative and more cost-effective methods of cashless payments (IPS payments, e-banking, m-banking, etc.).

Below is an overview of a wide range of potential measures that could be applied in Serbia, with some of the possible ways to parameterize these measures allowing policymakers to create a specific portfolio and design of measures with a prior detailed public discussion with all stakeholderss, as well as an action plan for their implementation.

# REGULATORY MEASURES

The regulatory framework for cashless payments in the area of design and functioning of the payment system in Serbia is established in a manner comparable to good international practice. However, in order to further develop the cashless economy, some additional measures could be taken that would encourage merchants to offer the option of cashless payment and users to use cashless payment instruments more frequently. Below is an overview of the selected regulatory measures to promote the transition to a cashless economy in Serbia.

## 1) Reduction of the limit for cash payments

The Law on Prevention of Money Laundering and Financing of Terrorism in Serbia imposes a limit on cash payments - a person engaged in the sale of goods and real estate or the provision of services in Serbia may not accept from a customer or a third party cash in the amount of 10,000 euros or more in the equivalent of dinars. Compared to other European countries, the limit for cash payments in Serbia is relatively high - in the observed group of countries (Table 1), only three countries have higher limits than Serbia, while in the remaining 15 observed countries, this limit is significantly lower than in Serbia.

Accordingly, lowering the maximum transaction value that may be realized in cash could contribute to a lower use of cash and, consequently, to a greater use of cashless payment instruments. In the observed 16 remaining European countries (Table 1), the median limit for cash payments is 3,000 euros, while the average limit for resident individuals is 4,350 euros per transaction. Given international practice, it would therefore be justified to consider the economic and social justification of lowering this limit in Serbia in order to promote the cashless transition.

## 2) Providing the availability of cashless payments

According to the results of the survey on citizens' attitudes (Table 9), the lack of availability of cashless payment options is one of the three main obstacles to the wider use of cashless payment instruments. Introducing a mandatory cashless payment option - not only in the form of POS terminals, but also other technologically innovative and more cost-effective solutions, such as mobile devices suitable for accepting cashless means of payment (following the example of Belgium, the Netherlands, Italy, and Greece) may efficiently address this problem, which entails certain costs and risks that should be taken into account when considering such a decision. In order to ease the transition to such a cashless payment system, the requirement to offer cashless payment options for goods and services in the retail sector could be gradually implemented - first for merchants and service providers in sectors where, according to research results, the shadow economy is prevalent, such as retail, hospitality, law firms, and craft businesses and then in all other sectors. Alternatively, a general obligation to provide a cashless payment option in all activity sectors could be introduced at the same time, with a gradual introduction, i.e., a transition period (of 3 to 6 months) during which no penalty provisions would apply for non-compliance with this obligation. In order to prevent the increase in the cost of establishing and maintaining the infrastructure for cashless payments, as well as the associated costs, as a result of increased demand, it would be justified to consider the mechanisms that could be used to limit this growth -measures to regulate and promote competition and, in particular, the development of a technologically innovative acceptance infrastructure that entails lower costs for merchants.

Since the mere existence of an active acceptance infrastructure for cashless payments entails certain costs for merchants, the introduction of such an obligation should be accompanied by corresponding financial incentives, which will be discussed in more detail below.

## 3) Obligation to pay wages in a cashless manner

Since wages constitute the dominant form (more than ¾) of citizens' income in Serbia, paying wages exclusively by cashless means (following the example of Slovenia, Croatia, BiH - Republika Srpska, United Arab Emirates, etc.) would have a positive impact on financial inclusion, i.e. on reducing the number of people who do not have a bank account and on cashless payment instruments. Since holding bank accounts and payment cards involves certain fixed costs, the measure of introducing mandatory cashless payment of wages could be accompanied by a coordinated agreement between the government and banks on reducing the fees for holding accounts and payment cards for low-income persons and for groups of persons where financial inclusion is low, thus encouraging the use of cheaper options - mobile banking and instant payments.

## 4) Obligation of state to perform transactions with natural persons in a cashless manner

Given the importance of large balance sheet of payments made by the state to individuals, the introduction of the obligation to make these payments cashless could also influence the promotion of financial inclusion and the development of a cashless economy, following the example of existing solutions in Italy, Slovenia, Estonia, Croatia and other countries. As with the obligation to pay wages by cashless means, the payment of these types of entitlements should be subject to measures or exceptions that take into account the specificities of certain sensitive groups (e.g., the elderly, persons with reduced mobility, persons with disabilities, population in remote areas with no payment service provider branches or ATMs, etc.). In addition, the possibility of cashless payment should also exist in all public institutions and legal entities established by the state.

## 5) Encouraging the reduction of costs of merchant fees

The cost of merchant fees is a significant obstacle to developing the cashless economy, particularly for merchants, as per the research findings (Table 8). The Law on Interchange Fees and Special Operating Rules for Card-Based Payment Transactions, which was adopted in 2018, also prescribes the maximum amount of interchange fees that can be charged between the card-issuing bank and the beneficiary for the interchange of card payments in Serbia, up to 0.2% of the transaction value - for payments made with debit cards (held by natural persons) - or up to 0.3% of the transaction value - for payments made with credit cards. This legislative reform, initiated by the National Bank of Serbia, aims to align the maximum amounts of interchange fees for cashless payments in Serbia with the limits provided by the EU Directive (2015/751) on interchange fees for card-based payment transactions. Since the vast majority of EU member states impose the maximum amounts specified in the EU Directive, it is concluded that the maximum amounts of interchange fees in Serbia are comparable with the practice of most European countries.

However, the total merchant fee for cashless payments includes other costs, i.e., fees, in addition to the interchange fee. In order to promote the reduction of the total cost of merchant fees, measures to promote competition in the cashless payment market could be considered, such as: *i)* the possibility of developing an Open Banking initiative based on the solution implemented in Belgium, which would make the payment system infrastructure open and accessible to all participants on equal terms,[8] *ii)* educating merchants on the possibility of applying software solutions that would enable routing of transactions in a way that would reduce other segments of merchant fees - based on the solutions implemented in some of the large retail chains in Serbia, and possibly subsidizing small retailers for the purchase of such software solutions. In addition, intensification of the educational campaign about the savings that can be achieved by using different instruments of cashless payment, as well as the development of technological solutions that would allow all payment cards (both domestic and international) to include the option of integration with the e-wallet, could also promote the development of competition in this market, thus continued expansion in use of cards that imply cheaper prices. In addition to that, developing user friendly solutions for instant payments in all retail shops and restaurants, may also contribute to a reduction in merchant fees.

[8] The acceptance of payment cards and instant payments via so-called *multibank acquiring* has significant advantages in terms of lower merchant fees paid by merchants to acquiring banks, which large merchants in Serbia recognized many years ago.

### 6) Guaranteed wireless Internet access for digital financial services

The use of a wide range of digital financial services (e-banking, m-banking, e-wallet, instant payments via IPS /QR code, etc.) offers numerous benefits for both consumers and merchants. In addition to the insufficient level of financial inclusion, the limited access to a high-quality internet network in Serbia (compared to the European average) is another constraint to the development of digital financial services and, consequently, the cashless economy.

In this context, in order to ensure access to quality Internet connectivity, based on similar solutions implemented in the United Kingdom, an initiative could be considered to establish an agreement between the State and mobile operators as well as internet providers, that would provide all subscribers with free access to websites, i.e., applications for electronic and mobile banking, as well as for payment via the e-wallet option and similar digital financial services (following the model of options offered by mobile operators for access to social networks, etc.). In addition, the availability of the Internet and related infrastructure for cashless payments would be positively impacted by the successful implementation of the project for the joint construction of broadband communications infrastructure in rural areas of Serbia, which is being carried out by the Ministry of Information and Telecommunications.

## FINANCIAL INCENTIVES

According to a survey conducted among businesses and citizens in Serbia (NALED 2022; 2022a), about a quarter of the companies that do not offer the option of cashless payment cite the high costs associated with cashless payment as the reason, while about 45% of respondents - individuals state that a price reduction or tax incentives would encourage them to make greater use of cashless payment methods. Accordingly, and taking into account the experience and measures implemented in other countries, which often address the issue of the cost of cashless payments, it would be justifiable to include a set of financial incentives for merchants and consumers in the incentive program for the development of the cashless economy in Serbia. These incentives could take the form of direct subsidies and/or tax benefits.

The following financial incentives represent some of the measures that are currently available. The selection of a specific combination of financial incentives and their precise parameterization should be based on a prior assessment of their static and dynamic fiscal effects. This ensures that the package of financial incentives is fiscally sustainable from the government's perspective.

### 1) Financial incentives for merchants

Numerous countries have provided direct and indirect financial incentives to merchants in recent decades to promote the availability of cashless payment methods. The costs incurred by merchants as a result of cashless payments consist of equipment acquisition costs, maintenance costs, and variable merchant fees per transaction. Accordingly, financial incentives should be designed to cover all of the above costs. Based on extensive international experience (Italy, Poland, Greece, Japan, South Korea), as well as the existing institutional framework in Serbia, several possible measures that could be implemented in this regard are:

i) *Subsidy for the acquisition of acceptance infrastructure for cashless payments* - Under the "Better Way" initiative, a subsidy is provided to entrepreneurs, micro and small businesses for the acquisition of acceptance infrastructure for cashless payments (e.g. POS terminals or similar devices) for 25 thousand points of sale[9]. After the expiry of this initiative and in view of the subsidies granted in the process of introducing e-fiscalization, it would be justified to consider the continuation of a similar subsidy program, where the government would participate in (co-)financing and which would be aimed at entrepreneurs, micro and small businesses that did not offer the possibility of cashless payments in the previous period, as well as at newly opened businesses. Based on the model used in Poland, a broader consortium could be formed, including not only the state but also banks and other interested parties, which would contribute to the realization of such an incentive system. Although the gap between Serbia and European countries has decreased in recent years, according to internationally comparable data from 2021[10], that same year Serbia needed an additional 40,000 POS terminals to reach the average of countries in Central and Eastern Europe in relative terms, and over 140 thousand additional POS terminals to reach the European average. Accordingly, the extension and expansion of this type of subsidy program in the coming period is justified. Given that technologically innovative methods of cashless payments (such as IPS payments) are associated with lower costs when parameterizing these incentives, it would be justified to consider their special emphasis on encouraging the use of those more cost-effective.

ii) *Financial incentives for the cost of using acceptance infrastructure* - Under the "Better way" initiative, the use of cashless payment infrastructure is offered free of charge for the first year. Given the positive externalities associated with the growth of a cashless economy, and considering the above-mentioned measure that could make the offer of the cashless payment option partially or fully mandatory, it would be justified to consider financial incentives in the form of subsidies for entrepreneurs, micro and small businesses that did not offer the cashless payment option in the previous period, which would cover (fully or to a significant extent) the monthly cost of using the acceptance infrastructure over the next two to three years. This is a sufficiently long period during which cashless payment would become firmly integrated into the merchant's business model, which would reduce the likelihood of recourse to cash payments after the subsidy ends. At the end of this period, tax relief could be offered to all individuals, in the form of the double deduction of the costs of acceptance infrastructure maintenance, against the corporate income tax base, which *de facto* means another indirect subsidy in the amount of 15% of the cost of acceptance infrastructure use. Considering that there are various

[9] In Serbia, in 2023, the implementation of the "Better Way" subsidy program began, which includes the free acquisition of POS terminals, covering the costs of using the terminals and reducing the merchant fee paid by merchants to a maximum of 0.99% of the transaction value, for a period of one year.

[10] The last year for which internationally comparable data are available for European countries. Data for Serbia are available until 2023.

forms of acceptance infrastructure, some of which (such as commercial applications for instant payments using mobile devices) are much more cost-effective, it would be justified to consider directing these incentives primarily to the adoption and use of technologically innovative and more cost-effective forms of acceptance infrastructure.

iii) *Tax breaks for the banks* - Banks could be offered a similar tax relief, which would mean that revenue from fees for using the acceptance infrastructure for entrepreneurs, micro and small businesses would be excluded from taxable profits. This would provide banks with savings of 15% of revenues from fees for use of the acceptance infrastructure, provided that the fee charged to them is reduced by 30% compared to the standard fee charged to other users.

iv) *Financial incentives for the costs of merchant fees* - Under the "Better way" initiative, merchants can offer cashless payments with a merchant fee of 0.99% during the first year. Since this variable cost is often considered a significant burden for merchants that prevents them from offering the cashless payment options, and the results of the mentioned survey show that at an merchant fee of about 2% a significant number of merchants would be willing to introduce the cashless payment option, taking into account international experience, it would be justified to consider the possibility of introducing a tax credit for merchants in the amount of a certain percentage of the value of transactions made with cashless payment instruments (e.g., up to 0.5 % of the value) for all micro, small and medium enterprises that have not offered the possibility of cashless payment transactions so far, for a period of for example, next two to three years, with the maximum amount of the tax credit per beneficiary being prescribed in absolute amount. At the end of this period, all merchants would be able to benefit from a tax credit that would allow them to permanently deduct the cost of these fees, for example at double the amount when determining the corporate income tax base, which would give them an indirect subsidy of 15% of this expenditure.

v) *Other financial incentives* - According to solutions implemented in other countries, the deductability of the costs of companies and entrepreneurs, for the purposes of determining the base for profit or income tax, could be conditioned by cashless payment of these costs.

## 2) Financial incentives for consumers

Financial incentives for cashless payments could apply to individuals - consumers - in a similar way as they do to businesses, and in this context, the scope of the cashless payments to which the incentives would apply should be examined. In the area of taxation of citizens' income, certain types of expenses paid without cash could be allowed as a deduction from the tax base. However, this would require a broader reform of the personal income tax system. Applying such a measure would entail certain regulatory costs for citizens and the government. Therefore, before deciding to apply such a measure, an assessment of its overall economic justification should be made.

On the other hand, in order to change consumers' habits regarding means of payment, the possibility of refunding a part of the money should be considered, i.e. a subsidy that individuals - tax residents of Serbia - would receive in a year if they made a certain number of retail transactions via any cashless, i.e. digital means in the previous year (e.g. at least 120). Similar to the solution implemented in Italy, the amount of the subsidy could be linked to the value of the transactions, with a maximum annual subsidy amount per individual prescribed. The subsidy may be disbursed through payment to user's account, which would encourage financial inclusion. Given the benefits of innovative solutions (e.g., IPS payments) in terms of their cost-effectiveness, the possibility of specifically linking these incentives with those cashless payment methods or directing incentives primarily to these instruments could be considered. Applying such an incentive for a period of one year could help build consumer experience, habits, and confidence in using cashless payments. However, it should be kept in mind that the manual administration of such a subsidy would be cost-inefficient. Therefore, such an incentive would only be economically justifiable if an IT solution would allow the automatic recording of transactions and automatic calculation of the subsidy amount for each recipient. Before introducing such a measure, it is important to consider the technical and legal aspects of its implementation.

## EDUCATIONAL AND PROMOTIONAL CAMPAIGNS

According to the results of the survey of businesses and individuals in Serbia, insufficient knowledge among citizens about the functioning, risks, and benefits of cashless payments, as well as the belief that the procedures for introducing cashless payments are complex, are significant barriers to the spread of cashless payments in Serbia. Consequently, an essential segment of the program of measures to promote the development of the cashless economy should include educational and promotional activities aimed at raising citizens' awareness of the functioning and benefits of cashless payments and eliminating misconceptions about the risks associated with cashless payments.

Accordingly, educational and promotional activities could target several segments: *i)* as part of the school subject of financial literacy, which should put a special focus on topics related to cashless payments - their benefits, risk management (e.g. protection of personal data, etc.), following Canada's example.), *ii)* marketing campaigns to inform citizens about the benefits and risks of cashless payments - through TV commercials, written marketing materials that could be sent with the electricity bill, for example, and targeted social media campaigns specifically aimed at populations that underuse cashless payment methods. In addition, informational activities should also be carried out for merchants to clearly familiarize them with the benefits of cashless payment for their business and to provide answers to the dilemmas most frequently encountered in this context.

Although there is no methodologically sound evidence that lotteries have a significant positive effect on this type of behavior, given that there is already a "take the receipt and win" tax lottery in Serbia, one might consider the possibility of redesigning it so that the right to win is given to individuals who paid at retail with cashless means. Although the direct effect of such a lottery would likely be limited, since the fiscal bill already implies that the transaction is registered, this design may incentivize people to pay more frequently using cashless methods, which may have a secondary positive effect.

# LITERATURE

Aggarwal, K., Malik, S., Mishra, D. K., & Paul, D. (2021). Moving From Cash to Cashless Economy: Toward Digital India. The Journal of Asian Finance, Economics and Business, 8(4), 43-54.

Alper, A, O. (2020). Electronic Payments Acceptance Incentives – Literature Review and Country Examples, World Bank Group.

Dybka, P., Karska, M., Kowalczuk, M., Olesinski, B., Opala, P., Rozkut, M., Skorupka A., Toroj, A. (2019). Reducing the Shadow Economy in Albania through Electronic Payments, Ersten Young. Dostupno na: https://assets.ey.com/content/dam/ey-sites/ey-com/en_pl/topics/eat/pdf/03/ey-shadow-economy-study-technical-appendices.pdf

European Commission, Directorate-General for Competition, Pavel, F., Kornowski, A., Knuth, L., et al., Study on the Application of the Interchange Fee Regulation: final report, Publications Office, 2020, Dostupno na: https://data.europa.eu/doi/10.2763/137970

Janis, W., & Shah, R. (2016). Accelerators to an inclusive digital payments ecosystem. Better Than Cash Alliance, New York.

Kearney, A. T., & Schneider, F. (2018). Digital Payments and the Global Informal Economy. Dostupno na: https://navigate.visa.com/$/v/2/m/x/Digital_payments_and_the_global-informal-economy-report.pdf

Kearney, A. T., & VISA (2022). The Transformational Power of Digital Payments for Governments. Dostupno na: https://www.visa.com.au/content/dam/VCOM/regional/ap/singapore/global-elements/documents/visa-kearney-the-transformational-power-of-digital-payments-for-governments.pdf

NALED (2022). Istraživanje stavova privrede o sivoj ekonomiji. Dostupno na: https://naled.rs/vest-za-privrednike-u-srbiji-siva-ekonomija-stagnira-ili-padau-poslednjih-pet-godina-uprkos-krizama-6640

NALED (2022a). Istraživanja stavova građana o sivoj ekonomiji i bezgotovinskom plaćanju u Srbiji. Dostupno na: https://boljinacin.rs/filemanager/Istrazivanja%20o%20SE%20i%20Bezgotovinskom%20placanju.pdf

Nicolaides, P. (2021). Income Tax Incentives for Electronic Payments: Evidence from Greece's Electronic Consumption Tax Discount.

Ranđelović, S., Arsić, M. & S. Tanasković (2022). Uticaj razvoja bezgotovinskih plaćanja na sivu ekonomiju i javne finansije u Srbiji. Fondacija za razvoj ekonomske nauke. Dostupno na: https://fren.org.rs/vesti/uticaj-razvoja-bezgotovinskih-placanja-na-sivu-ekonomiju-u-javne-finansije-u-srbiji/

Ranđelović, S. & S. Tanasković (2022). Uticaj prelaska na bezgotovinsku ekonomiju na osetljive grupe u Srbiji. Fondacija za razvoj ekonomske nauke

Shirota, J. (2023) Developments in Cashless Payments in the EU and the Introduction of a Digital Euro. Dostupno na: https://www.jsri.or.jp/publication/periodical/economics/121/121-03/

Sung, M. J., Awasthi, R., & Lee, H. C. (2017). Can Tax Incentives for Electronic Payments Reduce the Shadow Economy?: Korea's Attempt to Reduce Underreporting in Retail Businesses. World Bank Policy Research Working Paper, (7936).