# The use of euro cash as a store of value in CESEE

#### Marc Bittner, Thomas Scheiber<sup>1</sup> Refereed by: Martin Brown, University of St. Gallen

People in Central, Eastern and Southeastern Europe (CESEE) have been using euro cash as a store of value ever since euro banknotes and coins were introduced in 2002. At that time, the euro replaced Austrian schilling, Deutsche mark and US dollar banknotes as a safe asset. To arrive at descriptive results for the use of euro cash in CESEE over the past 20 years, we drew on time series from the OeNB Foreign Currency Survey (1997–2007) and the OeNB Euro Survey (2007–2021). For one thing, we sum up the literature on euroization in CESEE. For another, we update and discuss key indicators of euro cash holdings in the region published in former studies that used OeNB survey data.

Holding euro cash as a store of value is still widespread in Albania, Croatia, North Macedonia and Serbia. Survey respondents in Croatia, Romania and Serbia reported the highest median amounts of euro cash. Overall, the relative share of euro cash in total currency in circulation has been on a downtrend in all CESEE countries since 2007–08. However, on the level of individual portfolios, euro cash still plays an important role, in particular for the relatively large group of individuals with small savings in Southeastern Europe. Even among the relatively small group of banked savers in Croatia, Hungary, Albania, Bosnia and Herzegovina and Serbia, around 40% reported holding more than half of their total savings as cash in 2020–21.

Many people in CESEE still prefer to save in cash and in euro. This suggests that the determinants of the demand for euro cash as identified by Stix (2013) and Brown and Stix (2015) are still relevant: a lack of credibility in the long-term stability of the local currency, network effects and a lack of trust in the stability of the banking system. We therefore assume that, also in the foreseeable future, euro cash will continue to play a role as a safe haven asset in CESEE.

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Ever since euro banknotes and coins were introduced in twelve EU member countries in 2002, a growing number of euro banknotes has been circulating outside the euro area. This also holds true for the countries in Central, Eastern and Southeastern Europe (CESEE) that have not adopted the euro as legal tender.<sup>2</sup> The authors of a recent study released by the ECB (Lalouette et al., 2021) aimed at identifying the drivers of foreign demand for the euro and also estimated the share of euro banknotes circulating outside the euro area. According to their results, euro cash flows are mainly driven by factors that affect a given country's demand for the euro (local inflation, economic activity and foreign tourism) rather than external factors (global uncertainty or short-term interest rates in the euro area). At end-2019, the share of euro banknotes in circulation outside the euro area was estimated to

<sup>&</sup>lt;sup>1</sup> Oesterreichische Nationalbank, Economic Analysis and Research Department, marc.bittner@oenb.at; Central, Eastern and Southeastern Europe Section, thomas.scheiber@oenb.at (corresponding author). The views expressed in this paper are exclusively those of the authors and do not necessarily reflect those of the OeNB or the Eurosystem.

<sup>&</sup>lt;sup>2</sup> For details on the international use of the euro and in particular on the export and import of euro banknotes, see ECB (2021, 2022).

amount to between 30% and 50% of the total value of euro banknotes in circulation (Lalouette et al., 2021).

Most CESEE countries have a long history of currency and asset substitution, i.e. using foreign currency as a secondary currency and safe haven asset. This not only constrains the conduct of monetary and fiscal policy, but also poses a risk to financial stability. Before the euro, the Deutsche mark (DEM), Austrian schilling (ATS) and US dollar (USD) served as secondary currencies. Unofficial euroization<sup>3</sup> emerged in times of high inflation, currency or banking crises, when foreign currencies were used as a store of value. If a crisis deepened (e.g. through hyperinflation or the confiscation of savings deposits) and lasted longer, the foreign currency was then also used as a medium of exchange. It is well established in the literature on dollarization that de-dollarization has been achieved (e.g. Feige and Dean, 2004, for CESEE and the Commonwealth of Independent States). Economic agents continue using the foreign currency for both savings and transactions for a protracted period of time after successful macro stabilization.

Calvo and Vegh (1992) first examined this so-called ratchet effect, i.e. an economic process that is difficult to reverse once it is underway or has already occurred. They identified two potential explanations for the phenomenon. First, currency substitution persists because economic agents continue to have doubts about the future stability of the domestic currency even if the exchange rate is stable or inflation is low for the time being. The second explanation relates to network externalities. They reduce the transaction costs associated with using the foreign currency, i.e. economic agents in a multi-currency environment prefer the currency which is already used widely (Craig and Waller, 2004). Hence, if currency substitution reaches sufficiently high levels during a macroeconomic crisis, it will persist even after the crisis because the foreign currency has become a well-established medium of exchange. Both explanations are essentially rooted in a loss of trust. Once trust in a currency is lost, it returns only very gradually (Hosking, 2014).

The main aim of our descriptive study is to take stock of the use of euro cash by residents in ten selected CESEE countries. Fortunately, the OeNB has unique regional data at its disposal; normally hardly any data are available on currency in circulation abroad. Based on microdata from the OeNB Foreign Currency Survey (1997–2007) and the OeNB Euro Survey (2007–2021), we present indicators on (1) the extensive and intensive margin of euro cash holdings, (2) the degree of asset and currency substitution as well as (3) cash and currency preferences. Most of these indicators have been presented in former studies using OeNB survey data. We contribute to the literature on euroization by updating and discussing these indicators. We zero in on the use of euro cash as a store of value: former studies and reported motives indicate that asset substitution is still significant in the region, while the use of euro cash for payments has declined remarkably since 2007–08.

<sup>&</sup>lt;sup>3</sup> Manjani (2015) lists three main types of unofficial dollarization or euroization: (1) monetary dollarization or currency substitution, i.e. the substitution of domestic currency with foreign currency for transaction purposes; (2) financial dollarization, i.e. economic agents' holding of foreign currency assets and liabilities; and (3) real dollarization, i.e. the indexation of wages, real estate and/or durable goods prices in foreign currency. We use the terms "asset substitution" and "currency substitution" as discussed by Feige and Dean (2004). Asset substitution refers to holding foreign currency assets (cash and/or deposits) as a store of value, while currency substitution refers to the use of a foreign currency as a means of payment.

We find that euro cash holdings are especially widespread in Czechia (mainly for traveling purposes) as well as in Albania, Croatia, North Macedonia and Serbia, where euro cash predominantly serves as a store of value. The share of euro cash holders dropped in the aftermath of the global financial crisis (GFC) and the euro area sovereign debt crisis, but has picked up again in recent years. The median amounts of euro cash holdings likewise increased again. In 2020-21, they were highest in Croatia (nearly EUR 600) as well as in Romania and Serbia (about EUR 450 each). The lowest amounts were reported in Czechia, Bulgaria and Poland (around EUR 200 each). Furthermore, the time series of the currency substitution index (i.e. the ratio of euro cash to euro cash plus local currency in circulation) has trended downward in all Southeastern European (SEE) countries since 2007–08. Croatia, North Macedonia and Serbia still have noteworthy levels of euro cash hoardings on the aggregate level. However, on the level of individual portfolios, euro cash still plays an important role, in particular for the relatively large group of individuals with small savings in SEE. Even among the relatively small group of banked savers in Croatia, Hungary, Albania, Bosnia and Herzegovina and Serbia, around 40% reported holding more than half of their total savings as cash in 2020–21. Finally, many people in CESEE still prefer to save in cash as well as in foreign currency, predominantly the euro. This holds true especially in Serbia, North Macedonia and Croatia. The underlying determinants, as identified by Stix (2013) and Brown and Stix (2015), are apparently still relevant and effective: a lack of credibility in the long-term stability of the local currency, network effects and a lack of trust in the stability of the banking system. Consequently, euro cash has remained a safe haven asset in SEE and is likely to also play a role in the foreseeable future.

This study is structured as follows: section 1 discusses the historic background of euroization in CESEE. In section 2, we describe the data sources. In section 3, we offer descriptive analyses of OeNB survey data regarding the use of euro cash as a store of value from 1997 to 2021. Furthermore, we assess how important euro cash holdings are for individuals' portfolios. To this end, we relate euro cash holdings to two close substitutes, namely local currency in circulation and bank deposits. In section 4, we briefly discuss determinants and preferences with respect to saving in cash and foreign currency. Here, we mainly draw on studies using OeNB Euro Survey data. In a box, we present descriptive evidence on the prevalence of domestic payments in euro in CESEE and discuss the underlying preferences. Section 5 concludes with policy implications.

# **1** Brief overview of euroization in CESEE

European currencies have been formally or informally part of the economic systems of CESEE countries for a long time. In socialist Yugoslavia for example, it was common to informally trade foreign currencies, which allowed people to buy foreign goods (Lofranco, 2020). Also, euroization has been a widespread phenomenon in transitioning economies. The Western Balkan countries rank among the most euroized countries in Europe. What they have in common is a history of political uncertainty, macroeconomic instability and conflicts.<sup>4</sup> Hyperinflation, banking and currency

<sup>&</sup>lt;sup>4</sup> The policy challenges of the transition process were aggravated by a series of wars in the 1990s and early 2000s. After the breakup of Yugoslavia, the newly created democracies faced a double challenge: rebuilding their economies in both a post-war and an economic transition context (Országhová, 2015).

crises — leading to a loss of confidence in the local currency — as well as debt crises went hand in hand with the transition process in CESEE countries (Ganic et al., 2017). Additionally, their possible EU accession and subsequent obligation to introduce the euro has played an important role in that context (Ritzberger-Gründwald and Scheiber, 2012; Dumičić et al., 2018). Ritzberger-Grünwald and Stix (2007) showed that the increase in euro demand due to anticipation (i.e. expectations about euro introduction, inflation or exchange rate movements) is stronger than the decrease in demand due to economic stabilization. For a small and open economy with strong economic ties to the euro area, the optimal level of euroization is higher than zero but lower than the levels observed in many Western Balkan countries that are (potential) candidates for EU accession (Della Valle et al., 2018).

All in all, people in CESEE have been choosing to hold euro cash for various motives. The most common reasons are (1) geographic proximity, coupled with increasing economic interlinkages, (2) the desire to minimize risk, and (3) tradition. In addition, when households make more active financial decisions, national economic determinants such as inflation and exchange rate expectations may also play a greater role.

The extent of asset and currency substitution varies considerably between countries (Backé et al., 2007). Before the launch of euro cash in 2002, the most important foreign currencies in CESEE were the US dollar, the Deutsche mark and the Austrian schilling. Foreign currencies started to circulate in the region in the late 1960s to early 1970s. Their use related to salaries and remittances<sup>5</sup> of labor migrants or short-term workers ("Gastarbeiter") from CESEE countries e.g. in Germany and Austria. Vice versa, some of the former Yugoslav republics increasingly attracted tourists from abroad.

Other CESEE countries were affected by similar developments more recently. During and right after their initial transition process, hyperinflation, currency devaluations or bank failures gave rise to distrust of the national currency (Ritzberger-Grünwald and Stix, 2007).

Stix (2004) pointed out that, during the cash changeover period following the euro's launch, a substantial fraction of the stock of DEM, ATS and other euro area currencies that circulated in the five CESEE countries he examined (Croatia, Czechia, Hungary, Slovakia, Slovenia) were exchanged into euro.

# 2 Data sources

Even though foreign currencies played a significant role in the CESEE region, which also impacted on monetary and fiscal policy, little was known in the 1990s about the various dimensions of foreign currency use. Data on the use of foreign currency cash were scarce. For this study, we draw on unique data from two surveys commissioned by the OeNB that cover a period of 25 years from 1997 to 2021.<sup>6</sup>

<sup>&</sup>lt;sup>5</sup> The share of households with euro cash holdings is higher for people that have relatives in euro area countries. Euro cash holdings may – at least partially – stem from remittances of family members abroad (Backé et al., 2007).

<sup>&</sup>lt;sup>6</sup> For details on the two surveys, see Bittner (2020) and the OeNB website: OeNB Euro Survey - Oesterreichische Nationalbank (OeNB) and Previous surveys of the OeNB in CESEE - Oesterreichische Nationalbank (OeNB).

# 2.1 1997–2007: OeNB Foreign Currency Survey

In preparation of the euro banknote launch, the OeNB commissioned the semiannual Foreign Currency Survey. This survey covered five countries close to Austria, i.e. Croatia, Czechia, Hungary, Slovakia and Slovenia, and was conducted between 1997 and 2007. Each representative survey covered about 1,000 persons aged 15 years or older per country; respondents were interviewed in April/May and in October/ November.

The goal of the survey was twofold: (1) to assess how much DEM, ATS and USD cash was circulating in these countries, and (2) to establish a realistic forecast of the demand for euro banknotes in these countries. Given that some of the countries were highly dollarized, one particularly interesting question was whether households and businesses would exchange their DEM and ATS cash holdings for euro, US dollars or local currencies, or place them in bank accounts (Stix, 2001; Bittner, 2020).

# 2.2 2007-2021: OeNB Euro Survey

In fall 2007, the OeNB expanded the range of surveyed countries from five to eleven.<sup>7</sup> The scope of the questionnaire was broadened to include asset and liability euroization, and the survey was renamed OeNB Euro Survey.<sup>8</sup> From 2007 to 2014, surveys were conducted twice a year, in spring and in fall. Since 2015, the survey frequency has been reduced to once a year (October/November). In each wave, a representative sample of approximately 1,000 individuals is polled in each country in a multistage stratified random sampling procedure. The target population comprises residents aged 15 years or older. The sample is representative of the country's population with regard to age, gender and region.

Data weighting ensures a nationally representative sample for each country. Sampling weights use population statistics on gender, age and region and, where available, education and ethnicity. Interviews are carried out face-to-face at the respective respondent's home.<sup>9</sup>

# 2.3 Characteristics and limitations of the data

Both survey datasets are unique sources for foreign currency cash holdings but should be interpreted with caution (Stix, 2001; Scheiber and Stix, 2009). First, underreporting is likely for the sensitive question on the amount of euro or other foreign currency cash holdings, although the question does not explicitly refer to

<sup>&</sup>lt;sup>7</sup> The then six EU member states Bulgaria, Czechia, Hungary, Poland, Romania and Slovakia as well as the EU candidates Albania, Bosnia and Herzegovina, Croatia, North Macedonia and Serbia. Slovenia dropped out of the survey as it formally adopted the euro in 2007. For the same reason, Slovakia was excluded from the survey in 2009. Croatia became a member of the EU in July 2013. Montenegro and Kosovo are not sampled because they unilaterally introduced the euro as legal tender.

<sup>&</sup>lt;sup>8</sup> The core questions relate to cash holdings in foreign currencies, savings and other assets as well as bank and nonbank loans. Moreover, the survey collects respondents' economic sentiments, experiences and expectations as well as trust in institutions and currencies. A wide range of sociodemographic and socioeconomic variables as well as paradata complement the questionnaire. Sampling methodology has been improved in 2012 and 2016. For more details, see Bittner (2020).

<sup>&</sup>lt;sup>9</sup> In 2020 and 2021, data collection was mostly finished before severe coronavirus infection waves hit the survey countries. Interviews were exclusively conducted face-to-face and appropriate precautionary measures were applied by the survey institutes in all countries. Unit nonresponse rates increased in Albania, Croatia, Czechia, Hungary, Poland, Romania and Serbia but did not differ too much from those of previous years. Only Bosnia and Herzegovina recorded an unprecedented increase in nonresponse.

grey economy activities. Any results related to amounts should therefore be regarded as constituting a lower bound of actual figures.<sup>10</sup>

Second, figures may be biased if item nonresponse is not random. Across all countries, an average 16% of all respondents who reported euro cash holdings refused to state the respective amount. Item nonresponse varies substantially across survey waves and ranges from 5% in Czechia to 30% in Bosnia and Herzegovina and Serbia.<sup>11</sup> The indicators we present in this study are based on the methodology of Scheiber and Stix (2009), who assumed that nonresponse is random.

Third, both surveys focus on individuals as opposed to households. Consequently, the questionnaires address personal holdings but account for joint holdings of couples explicitly.

# 3 Euro cash as a store of value in CESEE

In this section, we present survey evidence about the role foreign currency cash plays in CESEE as a store of value. Subsections 3.1 and 3.2 shed some light on the dissemination of foreign currency cash holdings since 1997 and on fluctuations of median amounts. To gauge how important euro cash holdings are for individuals' portfolios, we relate the amount of euro cash holdings to two close substitutes, namely local currency in circulation and bank deposits both denominated in local currency and foreign currency (mainly euro).

#### 3.1 Results from studies using data of the Foreign Currency Survey

#### The period 1997-2002

In the years after the transition crisis and the 1990s Yugoslav Wars, people in CESEE would mainly use foreign currency cash as a general reserve and for payments abroad.<sup>12</sup> According to the OeNB Foreign Currency Survey, in 1997, around 40% of the respondents in Slovenia, Czechia and Croatia held Deutsche mark (chart 1, left panel). Lower shares were reported for Slovakia (around 20%) and Hungary (around 10%). US dollar holdings were quite common in Czechia and Slovakia (around 15% each), while Austrian schilling banknotes were mainly circulating in Czechia (25%), Slovenia and Slovakia (15% each). In Croatia and Hungary, both the shares of US dollars and Austrian schillings were below 5%.<sup>13</sup>

Until 2000, foreign demand for Deutsche marks had declined and demand for Austrian schillings and US dollars had increased. Stix (2001) found some evidence pointing to a substitution of US dollars for Deutsche marks until end-2000, but overall the demand for both Deutsche marks and US dollars had declined as a result of successful macroeconomic stabilization. In line with Stix's (2001) interpretation, the substitution that was relevant did not concern DEM and USD cash but

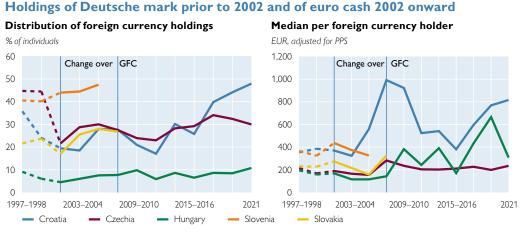
<sup>&</sup>lt;sup>10</sup> Scheiber and Stix (2009, footnote 9) gauge an underreporting factor of 2.2 for Croatia in 2007/2008.

<sup>&</sup>lt;sup>11</sup> For comparison, item nonresponse for the sensitive information on monthly net household income averages 21.4% and ranges from 4% in Czechia to 34% in Bosnia and Herzegovina and 30% in Serbia. In contrast, item nonresponse for the question whether the respondent owns euro cash is rather low at an average 2.3%, ranging from 0.4% for Czechia to 5.2% for Serbia.

<sup>&</sup>lt;sup>12</sup> See chart A1 in the annex. Note that respondents were asked about their motives for holding foreign currency cash for each currency separately and as a general question for all foreign currencies. Chart A1 captures the responses to the general question.

<sup>&</sup>lt;sup>13</sup> Chart 1 shows only DEM figures since the DEM accounted for the highest share in all countries surveyed in 1997. To learn more about the other currencies prior to the euro cash changeover, see Stix (2002).

Chart 1



Source: OeNB Foreign Currency Survey 1997-2007, OeNB Euro Survey since fall 2007.

Note: The figures show weighted averages and medians across all survey waves for the respective time period using weights that are calibrated on census population statistics (separately for each country). Respondents who answered "Don't know" or who refused to answer have been excluded. Slovenia adopted the euro as legal tender in 2007, Slovakia in 2009. Median values were calculated using linear interpolation between class limits. Purchasing power adjustments are based on the PPS exchange rates provided by the Vienna Institute for International Economic Studies (wiiw) database. GFC = global financial crisis (2008) and launch of the OeNB Euro Survey in fall 2007. Dotted lines refer to DEM amounts converted into EUR at central parity.

related to that between domestic and foreign currency cash or foreign currency bank savings. The latter signaled a gradual return of trust in the stability of the banking system.

# From the euro cash changeover in 2002 onward

Following the euro cash changeover in early 2002, the May 2002 Foreign Currency Survey revealed that the majority of respondents had exchanged their DEM cash holdings for euro. Furthermore, a substantial share of respondents opted for local currencies, while the share that opted for the US dollar was sizable only in Croatia and Slovakia (Stix, 2002). The share of respondents who held euro in May 2002 was significantly lower than the share who held either Austrian schillings or Deutsche marks in November 2001; the share of respondents holding US dollars remained roughly constant (chart 1, left panel). A general decline was evident in the proportion of residents that held any foreign currency - both in the short term (fall 2001 to spring 2002) and in the longer term (1997 to 2007), with the exception of Slovenia. In addition, the estimated nominal euro amounts held in Croatia, Czechia, Slovakia and Slovenia had contracted substantially from 1999/2000 to May 2002 (Stix, 2002).

Already 20 years ago, an overwhelming share of people in the covered CESEE countries regarded the euro as a stable currency (Stix, 2004). Significant amounts of euro cash were held in only two countries, namely Slovenia and Croatia (chart 1, right panel). Both are former Yugoslav republics, in which currency substitution (mostly DEM) had been a widespread phenomenon in the wake of economic crises and war. In 2002, about two-thirds of the Croatian and Slovenian respondents agreed with the statement that they hold euro cash mainly as a general reserve and store of value. In the other three countries – Hungary, Czechia and Slovakia – foreign currency cash holdings were relatively small in terms of value already prior to

the cash changeover. Such holdings were mainly kept for regular shopping tours to, or vacations in, the euro area (Ritzberger-Grünwald and Stix, 2007).<sup>14</sup>

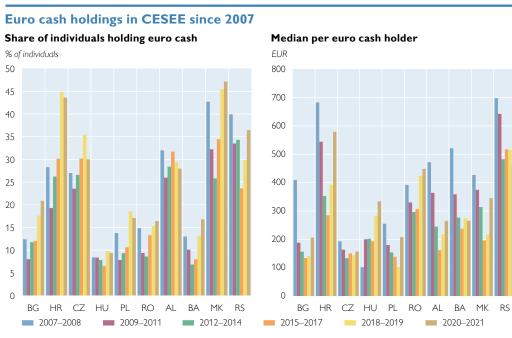
The prevalence as well as the median amount of euro cash holdings soared during the economic boom phase around the EU's enlargement in 2004. Dynamics in Slovenia and Slovakia were likely to have been also influenced by the two countries' euro adoption prospects. The demand for euro cash increased particularly strongly in Croatia after the outbreak of the GFC, not least because of the heightened uncertainty and a swift deterioration of trust in the stability of the local currency.

#### 3.2 Results from the OeNB Euro Survey: euro cash holdings in CESEE

#### Extensive margin: how are euro cash holdings distributed?

Since 2007, the OeNB Euro Survey results have been shedding light on euroization beyond Austria's neighboring countries. Apart from Croatia and Czechia, euro cash holdings are especially widespread in Albania, North Macedonia and Serbia.

The left panel of chart 2 shows the percentage of individuals who hold euro cash in the ten CESEE countries covered by the OeNB Euro Survey – averaged across survey waves of two to three years as indicated in the legend. After a drop in the last decade in the aftermath of the GFC and the sovereign debt crisis in the euro area, the share of respondents who reported holding euro cash has picked up again in recent years, surpassing 2007 levels, with the exception of Albania and Serbia.





Note: Weighted percentages are based on pooled data from survey waves of the time period as indicated in the legend. The weights used are calibrated on census population statistics for age, gender, region and, where available, education and ethnicity (separately for each country). Respondents who answered "Don't know" or who refused to answer have been excluded. Median values were calculated using linear interpolation between class limits.

<sup>14</sup> See chart A1 in the annex for country results on the motives for holding foreign currency or euro cash.

Chart 2

First, the recent rebound in euro cash holdings might be driven by rising incomes after the recovery from the GFC and given a higher prevalence of remittances due to the opening-up of the EU labor market in 2013 (Scheiber, 2019). Some respondents also report incomes in euro, in particular in capital cities, regions bordering the euro area (probably due to commuters) and regions with a strong tourism industry (see figure A1 in the annex). Second, heightened uncertainty around the COVID-19 pandemic might have increased the demand for euro cash in particular in Bosnia and Herzegovina, Croatia, North Macedonia and Serbia. This points to the still important role of monetary expectations. The fear that the local currency might depreciate largely drives SEE residents' demand for a safe asset (Beckmann and Fernandes, 2021).

In 2021, as much as 60% of euro cash holders in SEE report that they hold euro cash mainly as a general reserve (see chart A1 in the annex), with the exception of Bulgaria. The differences in motives between residents of Central and Eastern Europe (CEE) and of SEE are also reflected in the median amounts.

# Intensive margin: how much euro cash do individuals hold?

Analogous to the distribution (extensive margin) of euro cash holdings, the median amounts (intensive margin) dropped after the GFC, followed by mixed dynamics since then (chart 2, right panel). Medians decreased substantially in all SEE countries that had stated relatively high median amounts in 2007–08. In recent years, the median increased strongly in Albania, Croatia, Hungary, North Macedonia and Romania.

At a median amount of almost EUR 600, Croatia reports the highest amount in 2021, followed by Romania and Serbia (around EUR 450 each).<sup>15</sup>

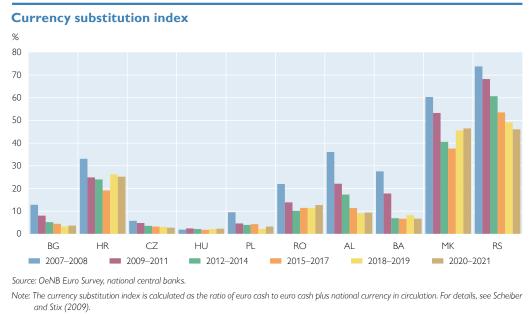
# 3.3 Croatia, North Macedonia and Serbia: euro cash still accounts for a significant part of total currency in circulation

To gauge the macroeconomic significance of euro cash in CESEE, we relate survey figures to aggregate statistics on currency in circulation. Moreover, a direct survey question reveals that euro cash holdings account for a significant share in total cash holdings at the individual level in 2021, which indicates that saving in euro cash is quite common among SEE residents, except for Bulgaria.

Chart 3 shows the currency substitution index (CSI) for CESEE countries, i.e. the ratio of projected euro cash per capita over euro cash plus local currency in circulation per capita.<sup>16</sup> In 2007–08, Albania, Bosnia and Herzegovina, Croatia and Romania exhibited medium levels of currency substitution of between 20% and 40%. In North Macedonia and Serbia, the CSI was at 60% and 75%, which implies that on the aggregate level more euro cash was circulating than local currency. Since 2007–08, the relative share of euro cash in circulation has trended downward in all SEE countries. However, Croatia and in particular North Macedonia and Serbia still register medium to high levels of euro cash in circulation. In the EU members Bulgaria, Czechia, Hungary and Poland, in contrast, euro cash circulation

<sup>&</sup>lt;sup>15</sup> Similar to Slovenia's and Slovakia's experience before their adopting the euro, the dynamic in Croatia might be influenced by the country's euro adoption prospects that have recently risen. See Scheiber (2019) to learn more about the impact euro adoption expectations may have on euro cash holdings.

<sup>&</sup>lt;sup>16</sup> For details on the CSI methodology, see Scheiber and Stix (2009).



had been macroeconomically insignificant already in 2007–08, and it has since declined further.

It is advisable to take the survey results on euro amounts with a grain of salt and to use several indicators. Given the sensitive nature of the direct questions about euro cash holdings, we are faced with data limitations – in particular underreporting and non-randomness of item nonresponse.<sup>17</sup> Chart 4 provides information on the self-reported share of foreign currency cash holdings in total cash holdings for the medium to highly euroized SEE countries.<sup>18</sup>

The share of respondents holding more than 50% of their cash in foreign currency (chart 4, blue and red columns) decreased remarkably since 2008 in Bulgaria, Bosnia and Herzegovina, Croatia, North Macedonia and Serbia, which mirrored the CSI dynamics. The figures for Albania and Romania have been hovering around 15% and 30%, with no clear trend, while the CSI indicates that euro cash circulation declined substantially from 2007 to 2021.

#### 3.4 SEE: euro cash holdings remain an important safe asset at the individual level

In 2021, euro cash holdings still served as a safe asset in the following five countries: Bosnia and Herzegovina, Croatia, North Macedonia, Romania and Serbia. There, they continued to make up the bulk of individuals' cash reserves. So, how do these euro cash hoardings compare with formal savings at banks?

Back in 2007–08, saving in cash was common in CESEE. Half of the CESEE population did not have a bank account or savings deposits back then. In Albania, Bulgaria and Romania, the share of banked individuals was below 30%.<sup>19</sup> In 2020–21,

Chart 3

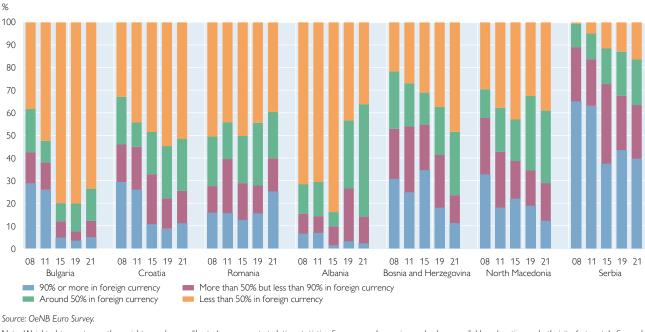
<sup>&</sup>lt;sup>17</sup> Note another caveat: local currency circulating outside the banking sector is not only in the hands of individuals but also in the vaults of corporates.

<sup>&</sup>lt;sup>18</sup> We do not include CEE countries in this chart because their CSI was already low in 2007–08.

<sup>&</sup>lt;sup>19</sup> Beckmann et al. (2013) looked at the structure of CESEE household portfolios and found that in 2010–11, cash holdings were, on average, the most important savings instrument even for banked households.

Table 1

Chart 4



# Share of total cash holdings that is denominated in foreign currency (self-reported)

Note: Weighted percentages; the weights used are calibrated on census population statistics for age, gender, region and, where available, education and ethnicity (separately for each country). Respondents who answered "Don't know" or who refused to answer have been excluded. This question was not asked in each survey.

80% of individuals across the CESEE region were banked on average, with Albania and Romania at the lower end with about 60% (see column 2 of table 1).

While financial inclusion has increased since 2007–08, owning a current account or a savings deposit does not necessarily imply that a person holds any savings. In

Savings in cash and at banks						
	Respondents report savings (cash, depos- its, financial assets)	Banked (respondents have current account or savings deposits)	Respondents hold savings deposits	Respondents hold savings deposits in EUR	Share of savings- deposits denominated in EUR <sup>1</sup>	If banked and reported savings: more than 50% of savings held as cash
	% of individuals					
Bulgaria	42.2	79.3	27.2	7.5	27.6	27.0
Croatia	57.4	97.5	32.8	18.7	57.0	43.8
Czechia	75.5	93.4	34.0	1.5	4.3	7.7
Hungary	45.2	89.7	18.7	2.0	10.6	44.2
Poland	48.1	90.8	23.2	2.5	10.8	21.4
Romania	29.5	67.0	12.1	2.8	23.3	33.0
Albania	25.2	55.9	26.0	7.5	28.8	42.7
Bosnia and Herzegovina	26.0	77.9	8.2	2.1	25.1	48.3
North Macedonia	46.4	89.8	25.5	14.2	55.9	33.4
Serbia	26.0	89.0	10.4	8.9	85.9	39.9

Source: OeNB Euro Survey 2020-2021.

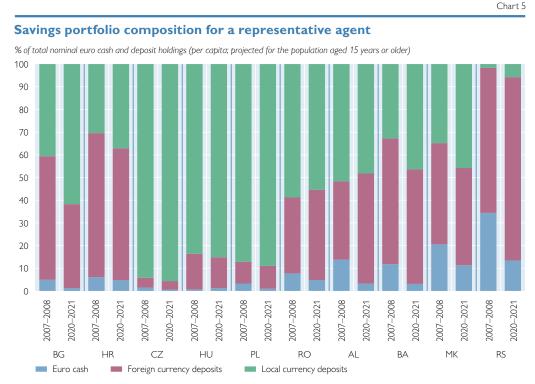
Note: Weighted percentages are based on pooled data from the survey waves 2020 and 2021. The weights used are calibrated on census population statistics for age, gender, region and, where available, education and ethnicity (separately for each country). Respondents who answered "Don't know" or who refused to answer have been excluded.

<sup>1</sup> The figures in this column refer to shares of savings deposits denominated in EUR and not to % of individuals.

2020–21, less than half of the respondents on balance reported any savings (i.e. cash, deposits or other financial assets). The percentages of people reporting savings ranged from around 25% in Albania, Bosnia and Herzegovina and Serbia to 76% in Czechia (column 1 of table 1). Among banked respondents, less than one-third reported having a savings deposit. In Croatia, North Macedonia and Serbia, more than 50% of these saving accounts are denominated in euro (columns 3 to 5 of table 1).

As a result, (euro) cash holdings are an important part of savings even among individuals who report savings at banks. Self-reported figures in column 6 of table 1 are based on individuals who are banked and who reported savings. Among this group, around 40% in Croatia, Hungary, Albania, Bosnia and Herzegovina and Serbia (and about one-third of banked savers in North Macedonia and Romania) reported in 2020–21 that they hold more than half of their total savings as cash.

Finally, let us take a brief look at the importance of euro cash savings at a macroeconomic level. Chart 5 assumes a representative agent that holds three financial assets in his or her portfolio. The euro cash share is derived from projected per capita euro cash holdings following the methodology of Scheiber and Stix (2009). The shares of the foreign currency deposits and the local currency deposits are calculated from national monetary statistics of the household sector excluding nonprofit institutions serving households.



Source: OeNB Euro Survey, national central banks.

Note: Euro cash savings are projected per capita amounts for the population aged 15 years or older, based on OeNB Euro Survey data (see Scheiber and Stix, 2009). Shares of foreign currency and local currency deposits are derived from national monetary statistics of the household sector excluding nonprofit institutions serving households; nominal values. Already in 2007–08, euro cash made up only a small share of total savings of the household sector in all CESEE countries. Exceptions were Albania, Bosnia and Herzegovina, North Macedonia and Serbia. Since then, the relative importance of euro cash savings has declined further in all countries. Between 2007–08 and 2020–21, the share decreased as follows: in Albania and Bosnia and Herzegovina from around 10% to 3%, in North Macedonia from 21% to 11%, and in Serbia from 34% to 13%. Given that savings at banks are not that common, as discussed above, these results point to a rather unequal distribution of bank savings among CESEE residents.

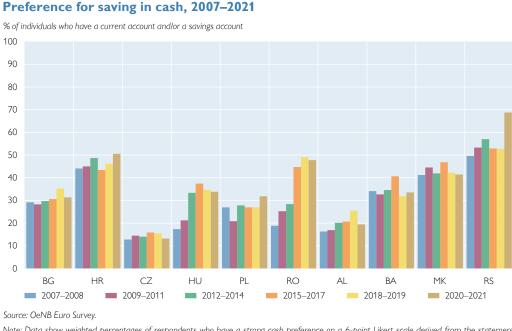
# 4 Saving in cash and in foreign currency in CESEE

As discussed in section 1, economic crises triggered by the transition process or by wars have led to asset and currency substitution in CESEE economies. Some SEE countries still feature a high degree of asset substitution – despite macroeconomic stabilization and partly strong economic growth in particular after EU accession. What are the continued benefits of saving in cash and saving in foreign currency? The initial reasons for euroization have vanished, but individuals are still willing to forgo higher interest rates in local currency as an insurance premium for holding a safe haven asset.

Individual portfolio choice rests on the interplay of two elements: (1) the cash versus deposit decision and (2) the foreign currency versus local currency decision. Preferences are determined by various supply and demand factors that influence a person's subjective assessment of return and risk. The dollarization literature of the last two decades stresses the central role that trust and confidence play in house-holds' financial decisions (Kraft, 2003; Feige and Dean, 2004; Guiso et al., 2004; Coupé, 2011; Brown and Stix, 2015). Furthermore, there is strong evidence that crisis experiences have long-lasting effects on household preferences and hence financial choices (Osili and Paulson, 2008; Mudd et al., 2010; Brown and Stix, 2015; Malmedier and Nagel, 2016; Rajkovic and Urosevic, 2017). Two studies (Stix, 2013; Brown and Stix, 2015) drawing on data from the OeNB Euro Survey concluded that the degree of persistence in the use of euro cash in SEE can primarily be explained by people's having experienced economic crisis. In other words, currency and asset substitution in SEE are mainly demand-driven.

First, Stix (2013) analyzed why individuals in CESEE hold sizable shares of their assets in cash at home rather than at banks. Important factors are a lack of trust in banks, memories of past banking crises and weak tax enforcement. Moreover, people in euroized SEE economies have a stronger preference for a "safe" foreign currency as a store of value. Network effects of asset substitution and doubts about the stability of the local currency increase the preference for saving in cash (Stix, 2013).

Chart 6



Note: Data show weighted percentages of respondents who have a strong cash preference on a 6-point Likert scale derived from the statement "I prefer to hold cash rather than a savings account." The weights used are calibrated on census population for age, gender, region and, where available, education and ethnicity statistics (separately for each country). Respondents who are under 18 years of age unemployed or economically inactive or who answered "Don't know" or who refused to answer have been excluded.

Chart 6 presents the time series on CESEE residents' preferences for saving in cash since 2007 (i.e. one of the dependent variables used by Stix, 2013).<sup>20</sup> The share of banked respondents who state that they prefer to save in cash varies across the observed countries but remained remarkably stable across time, with the exception of Croatia, Hungary, Poland, Romania and Serbia. In these five countries, the share of respondents who prefer to save in cash increased significantly (at the 1% level) between 2009–11 and 2020–21.

Second, Brown and Stix (2015) analyzed the determinants of people's preference for foreign currency deposits in CESEE, using OeNB Euro Survey data from 2011–12. Chart 7 presents updated evidence on CESEE individuals' preference for saving in foreign currency – mainly euro (i.e. one of the dependent variables used by Brown and Stix, 2015). In 2011, a majority of individuals in Croatia, Bosnia and Herzegovina, North Macedonia and Serbia preferred the euro over the local currency. As is also evident from the euroization index (chart A2 in the annex), the foreign currency preference gradually declined in CESEE over the last decade. In Bulgaria, Croatia and Albania it remained mostly unchanged, while in Romania saving in euro increased to almost 40% – which presumably reflects diminishing trust in public institutions. According to this direct measure of currency preferences and the euroization index, deposit substitution seems to persist in SEE.

<sup>&</sup>lt;sup>20</sup> Note that Stix (2013) pooled the data from 2010 and 2011 and restricted the sample to those respondents who are 18 years and older, economically active or retired and who are banked. This restriction was chosen to make sure that the sample only includes respondents who face true economic choices when it comes to saving. We use the same restrictions to make the data comparable across time.

Chart 7



Preference for saving in foreign currency

As explained by Brown and Stix (2015), people's currency preferences in CESEE are partly driven by their distrust of the long-term stability of the domestic currency. This distrust is related to people's assessment of current policies and of the quality of institutions.<sup>21</sup> The authors find that network effects strongly affect household preferences for foreign currency deposits: depending on their monetary expectations, households reporting that foreign currency saving is common in their country are more likely to prefer foreign currency deposits.

savings account. Would you choose to deposit this amount in local currency, EUR, USD, CHF or other currency?" This question was not asked in each survey.

Furthermore, Brown and Stix (2015) confirm that the observed persistence of deposit euroization across the region is strongly influenced by individuals' experiences of banking and currency crises during the 1990s.

To sum up, first, indicators show that individuals' preference for saving in cash in CESEE increased significantly between 2009–11 and 2020–21 in Croatia, Hungary, Poland, Romania and Serbia. Second, the preference for saving in euro is still elevated in SEE, in particular in Croatia, North Macedonia and Serbia. These results suggest that the determinants identified by Stix (2013) and Brown and Stix (2015) are still relevant and effective. Heightened uncertainty, economic turbulence or other crisis events may therefore trigger swift withdrawals of savings deposits in countries where relatively high shares of individuals prefer to save in cash and foreign currency. This raises the demand for both euro deposits and euro cash (Prean and Stix, 2011; Beckmann and Fernandes, 2021; Koch and Scheiber, 2022).

<sup>&</sup>lt;sup>21</sup> For time series on individuals' trust in government, trust in banks, trust in the stability of the local currency or of the euro, as well as individuals' economic sentiments and monetary expectations (i.e. inflation expectations and exchange rate expectation), see: Individual trust and expectation indicators - Oesterreichische Nationalbank (OeNB).

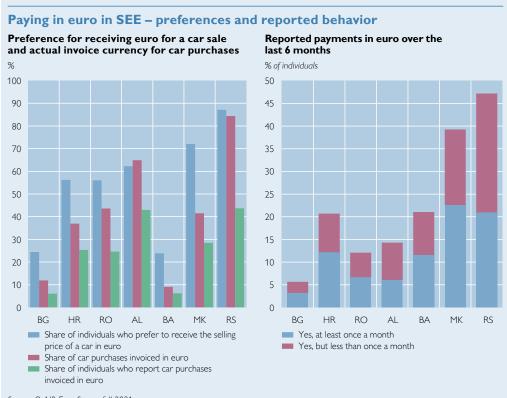
Box 1

Chart Box 1

#### The euro's role as a means of payment in Southeastern Europe (SEE)

What do we know about today's use of the euro as a means of payment in SEE? In our analysis based on the fall 2021 Euro Survey wave, we exclude Czechia, Hungary and Poland given that the share of the euro in total currency in circulation is very low in these countries. Moreover, individuals reported that they mainly use euro cash for payments abroad when traveling to the euro area (chart A1). By contrast, about one-fifth of respondents in Albania, Bosnia and Herzegovina, North Macedonia, Romania and Serbia confirmed that they also hold euro cash to make domestic payments.

To our knowledge, Bosnia and Herzegovina, Croatia, North Macedonia, Romania and Serbia legally restrict transactions in foreign currency. But explicit exemptions apply in most countries, e.g. regarding occasional transactions among residents. In a scenario involving a hypothetical car sale, about half of the respondents in Albania, Croatia and Romania would prefer to receive the payment in euro. In North Macedonia, this figure amounts to around 70% and, in Serbia, to over 80% (left-hand panel, blue columns). When respondents are asked in which currency car sales have usually been settled, the figures are substantially lower. The share of individuals who reported car purchases invoiced in euro ranged from about 20% in Croatia and Romania to almost 30% in North Macedonia and roughly 40% in Albania and Serbia (left-hand panel, green columns). Compared to the 2014 results (Scheiber and Stern, 2016), the preference for payments in euro and actual payments in euro remained at similar levels in 2020–21, except for Albania, where both indicators declined.



Source: OeNB Euro Survey fall 2021.

Note: Weighted percentages excluding respondents answering "Don't know" or who refused to answer. Left-hand panel: preferences for receiving payments in euro are based on the question "Suppose you could choose the currency in which you receive the payment from a car sale. Would you prefer to receive local currency, euro, US dollar or another foreign currency?" Moreover, respondents were asked "In which currency do you usually make car purchases?" The second (third) column excludes (includes) respondents who did not purchase a car. The right-hand panel refers to the question "Did you make any payments in euro during the last 6 months in your country?"

In general, the use of the euro for payments has declined over the last decade. In 2021, about 20% of individuals in Croatia and Bosnia and Herzegovina used the euro for domestic payments during the last six months, while in North Macedonia and Serbia the figure was as high as 40% and more. But these numbers must be interpreted with caution, since the wording of the questions is rather vague and answers might include euro cash payments as well as noncash payments in euro or even payments indexed to the euro.

# 5 Summary and conclusions

For a long time already, European currencies have figured formally or informally in the economic systems of many Central, Eastern and Southeastern European countries. Ever since euro cash was launched in 2002, large amounts of euro banknotes have been circulating outside the euro area. This holds true for many CESEE countries. While they have not adopted the euro as legal tender, asset substitution – the use of euro cash as a store of value – has been an important and persistent phenomenon.

Using data from the OeNB Foreign Currency Survey (1997–2007) and the OeNB Euro Survey (2007–2021), we examined the use of euro cash in the CESEE region over time. Irrespective of a certain heterogeneity between the observed countries, euro cash holdings still play an important role as store of value in the countries of Southeastern Europe. Preferences for saving in cash and depositing money in euro have remained widespread in SEE. In light of stable or only gradually changing preferences, the main determinants of demand for euro cash, as identified in previous studies (Stix, 2013; Brown and Stix, 2015) are still relevant and effective. Using data from the OeNB Euro Survey 2010–11 and 2011–12, the authors of the previous studies found that the demand for euro cash is mainly driven by a lack of credibility in the long-term stability of the local currency, network effects and a lack of trust in the stability of the banking system. Furthermore, personal experience of macroeconomic crisis and individuals' weak assessment of current policies and institutions put a persistent drag on individual monetary expectations.

The results of Brown and Stix (2015) suggest that today's policymakers may tackle asset and currency substitution in CESEE, among other things, by ensuring a stable monetary regime and sound economic policies: rebuilding trust through a track record of stabilizing the exchange rate via sound macroeconomic and fiscal policies. The recent de-euroization policies of Serbia and Albania also aim at fostering local currency financial markets and raising trust in public institutions. Another means are credible exchange rate regimes, such as the currency pegs of Bulgaria and Bosnia and Herzegovina (Begovic et al., 2016) or the managed floats of Croatia and North Macedonia. They have likewise contributed to the effort of building a track record of macroeconomic stability and growth. De-euroization would also benefit from building better institutions. What jeopardizes progress already achieved are stalling EU accession processes in EU candidates and potential candidates, rising corruption and irresponsible populist politics (EBRD, 2019 and 2020; Della Valle et al., 2018).

However, stable monetary policy is unlikely to be sufficient to deal with the hysteresis of deposit euroization across the region since holding foreign currency deposits has become a 'habit' and is still strongly influenced by the experience of financial crises in the 1990s (Brown and Stix, 2015). Czechia, Hungary, Poland,

Slovakia and Slovenia have patently demonstrated that it is possible to overcome both asset and currency substitution. Network effects and backward-looking monetary expectations have virtually stopped impacting on people's preferences. EU integration, including the rule of law, economic policy coordination and surveillance, may have helped speed up the process of re-establishing trust in the domestic currencies (Scheiber and Stern, 2016).

On the one hand, the question arises whether the current episode of elevated inflation will make euro cash less attractive as a safe haven asset for residents in SEE. This might accelerate the current downtrend of the use of euro cash as a store of value and a medium of exchange in CESEE. On the other hand, crisis episodes like the global financial crisis or the COVID-19 pandemic have at least temporarily increased the demand for euro cash in the region.

It would be important to supplement this descriptive study with empirical, quantitative analyses using recent OeNB Euro Survey data. Such analyses could be aimed at testing whether the relative importance of monetary expectations, network effects and trust in institutions in explaining the preference to save in euro has changed over the last decade. The results may help modify and update policy conclusions for the future.

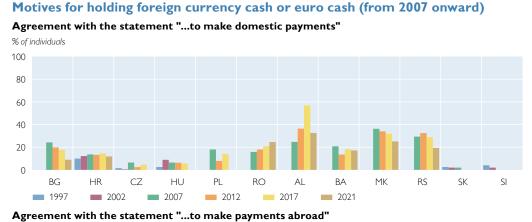
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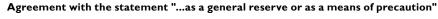
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Chart A1

# Annex



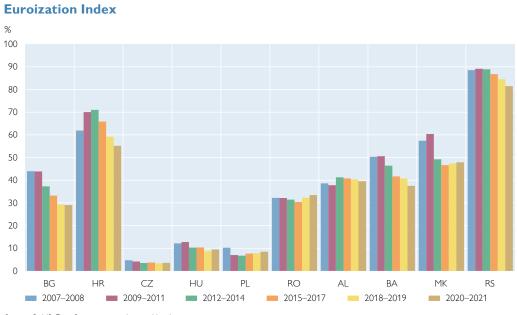






Source: OeNB Foreign Currency Survey 1997–2007, OeNB Euro Survey 2007–2021.

Note: Weighted percentage shares of respondents who (strongly) agreed with the statements ("I hold euro cash ...") on a 6-point Likert scale. The weights used are calibrated on census population statistics for age, gender, region and, where available, education and ethnicity (separately for each country). Respondents answering "Don't know" or "no answer" have been excluded. Slovenia adopted the euro as legal tender in 2007, Slovakia in 2009.

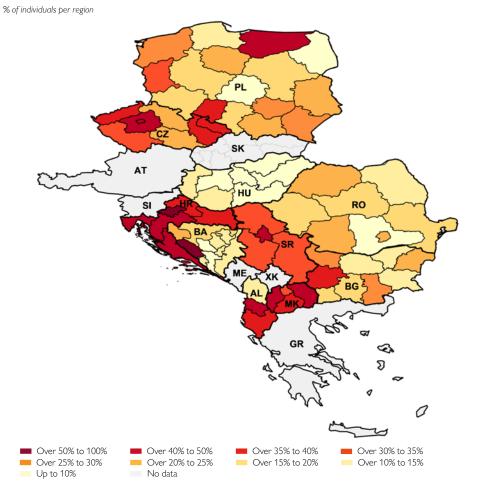


#### Chart A2

Source: OeNB Euro Survey, national central banks.

Note: The euroization index is calculated as euro cash plus household foreign currency deposits divided by the sum of total cash in circulation and total deposits of the household sector. For details see Scheiber and Stix (2009).

Figure A1



Regional prevalence of euro cash holdings

Source: OeNB Euro Survey 2019 and 2020.

Note: Weighted percentages; the weights used are calibrated on census population statistics for age, gender, region and, where available, education and ethnicity (separately for each country). Respondents who answered "Don't know" or who refused to answer have been excluded.