Euro adoption in CESEE: How do financial literacy and trust in institutions affect people's attitudes?

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We investigate how financial literacy and trust in institutions affect attitudes (expectations and preferences) regarding euro adoption in ten countries of Central, Eastern and Southeastern Europe (CESEE). Using recent evidence from the OeNB Euro Survey, we show that attitudes on euro adoption vary widely across and within countries. In our country sample, on average, 18% of the surveyed individuals would prefer a faster accession to the euro area than they expect, while another 18% would prefer a later euro introduction than they expect. The share of those whose expectations match their preferences is 22% in the overall country sample. 19%, on average, do not expect or wish euro area accession to take place at all. Finally, 23% indicate that they have not formed attitudes on the introduction of the euro in their respective countries. Computing an overall index of attitudes toward euro adoption, we show that financially literate individuals are more likely to form definite expectations and preferences and tend to prefer euro adoption to take place earlier than they expect. We further show that trust has a similar impact on the overall attitude toward euro adoption — with both trust in national and European institutions having a positive and significant impact on forming more accurately aligned expectations and preferences as well as on preferring the euro to be adopted sooner rather than later.

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EU member states are expected to join the euro area once they have achieved a high degree of sustainable convergence. Only Denmark has an opt-out, agreed back in the early 1990s, and thus no legal obligation to strive for an eventual adoption of the common currency.

So far, 5 of the 11 Central, Eastern and Southeastern European (CESEE) countries that entered the EU between 2004 and 2013 have subsequently joined the single currency area: Slovenia, Slovakia and the three Baltic states entered the euro area between 2007 and 2015. Currently, the authorities of two further CESEE countries, namely Bulgaria and Croatia, are aiming to accomplish euro area membership over the course of the next few years. Both countries joined the exchange rate mechanism (ERM II) in July 2020, a key step on the road to a future participation in the European currency union.

The authorities in the remaining CESEE EU member states (CESEE EU MS) — Hungary, Poland, Czechia and Romania — are currently not particularly interested in euro area participation or perceive it as a rather distant issue with a long lead time. Both political and economic reasons are at play, with distinct nuances across individual countries as regards the specific framing and weight of the presented arguments.

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Looking further ahead, a number of EU candidates and potential candidates (CPCs) from the Western Balkans are destined to accede to the EU in the future. While EU enlargement in that region is still several years away, it will — once it happens — expand the circle of potential euro area aspirants and, eventually, the number of euro area participants.

Against this background, it is of key interest to explore what people in those CESEE countries that still have their own currencies expect in terms of future euro adoption. We addressed this issue in a recent study (Backé and Beckmann, 2020), focusing on the question of what drives people's euro adoption expectations in a set of ten CESEE countries that are not (yet) members of the single currency area. Our country sample included six EU members – Bulgaria, Croatia, Czechia, Hungary, Poland and Romania — as well as four CPCs from the Western Balkans — Albania, Bosnia and Herzegovina, North Macedonia and Serbia. Based on data from the OeNB Euro Survey² from 2007 to 2019, which is, as far as we know, the sole dataset addressing this matter for CESEE EU MS and CPCs alike, we presented evidence on people's expectations regarding accession to the euro area. We then examined how the framework that governs euro area accession, the different monetary policy regimes and de facto euroization affect expectations. We showed that expectations had become less optimistic over time and that people's uncertainty in forming expectations had increased. Furthermore, we found that exposure to de facto euroization, trust in national central banks and in the EU as well as expectations of inflation or depreciation of the local currency are important determinants of euro adoption expectations.

In the present study we again analyze the same set of countries and use OeNB Euro Survey data but shift the focus of our analysis to build on two recent lines of research on expectations. The first line of research stresses the use of heuristics in forming macroeconomic expectations and shows that stereotypical thinking partially explains exaggerated beliefs. For example, Gillitzer et al. (2021) show that consumers expect lower inflation when the political party they support holds executive office. This result is interpreted as consistent with stereotypical thinking, which is defined as "an intuitive generalization that economizes on cognitive resources." The second line of research stresses that the variation in cognitive abilities across individuals is an important determinant of the variation in their macroeconomic expectations (e.g. Armentier, 2010; D'Acunto et al., 2019).

We analyze three aspects of expectation formation. First, we study not only expectations but also preferences. In other words, we use data on when people think the euro will be introduced in their respective countries and also when they think it should be introduced. Contrasting and combining these two dimensions provides some insights into whether expectations are affected by wishful thinking. Second, we shed light on how financial literacy shapes euro adoption expectations and preferences and whether preferences and expectations of financially literate individuals tend to be more (or less) aligned than those of financially illiterate individuals. Third, we study whether people who trust national and/or European institutions expect and prefer accession to occur later or sooner. In addition, we

For more details on the survey see: https://www.oenb.at/en/Monetary-Policy/Surveys/OeNB-Euro-Survey.html. The European Commission regularly commissions a survey on the introduction of the euro in EU member states that have not yet adopted the common currency which also covers Sweden but not the CPCs (European Commission, 2021).

add recent evidence on how expectations regarding euro area accession developed from 2019 to 2020.

As argued in Backé and Beckmann (2020), research in this area is highly relevant from a policy perspective, given that euro adoption expectations shape many important economic and financial decisions by individuals, e.g. in the realm of saving and borrowing, when it comes to the choice of the currency in which assets and liabilities are denominated. Moreover, the implementation of national strategies toward euro area accession greatly benefits from a broad consensus in the relevant country, including expectations and preferences of the population that are well aligned with the plans of the authorities.

Our study is structured as follows: In section 1, we describe the data we used. Section 2 presents results on how households' expectations as well as preferences regarding euro introduction are distributed. Section 3 presents our empirical approach. In section 4, we present our results, before discussing their robustness in section 5. Finally, section 6 summarizes our main findings and concludes. An online supplement presents additional descriptive evidence on the development of expectations over time and robustness checks for the empirical analysis.

1 Data: the OeNB Euro Survey

The main source of data for our analysis is the OeNB Euro Survey — a repeated cross-sectional survey of individuals, aged 18 or older. The survey covers ten Central, Eastern and Southeastern European (CESEE-10) countries. In each country and in each survey wave, a sample (based on multistage random sampling procedures) of around 1,000 individuals is polled. Each sample reflects a country's population characteristics in terms of age, gender, region and ethnicity. Weights are calibrated separately for each wave on census population statistics.

The core of the questionnaire used for the OeNB Euro Survey focuses on the extent and different dimensions of euroization. To increase the understanding of the determinants of euroization, the survey questionnaire elicits a rich set of information on socioeconomic characteristics, indicators of wealth and finances, attitudes and beliefs, inflation and exchange rate expectations and trust in institutions. Furthermore, standard questions regarding financial literacy about interest rates, inflation and exchange rate risk are included. Table A1 in the online supplement presents definitions and the underlying survey questions for all variables employed in this analysis.

Expectations regarding accession to the euro area are an important determinant of the different dimensions of euroization (Geng et al., 2018; Brown and Stix, 2015). Expectations may partially be driven by stereotypical thinking (Gillitzer et al., 2021); i.e. people may be opposed to euro area accession, which may also lead them to expect later accession than respondents who are in favor of euro adoption. In order to investigate the determinants of expectations we, therefore, also included a question on euro adoption preferences.

The two questions on expectations and preferences form the central variables for our analysis:

When, in which year, do you think the euro will be introduced in your country?

Year: #### Never

Don't know No answer

And in your personal opinion, when, in which year, do you think the euro should be introduced in your country?

Year: #### Never Don't know No answer

Interviewer instruction: Albania, Bosnia, North Macedonia and Serbia: We do not mean joining the EU but introducing the euro.

Bulgaria and Bosnia and Herzegovina: We mean when the national currency will be entirely replaced by the euro.

Both of these questions were included in the survey waves of 2017, 2018 and 2020, with a total of more than 30,000 observations. The information on expectations is also available from earlier waves and now covers a time span of 14 years, though not at annual frequency (see Backé and Beckmann, 2020). In addition, for the CESEE CPCs, questions on expectations and preferences regarding accession to the EU were included, also in 2017, 2018 and 2020:

When, in which year, do you think [your country] will join the European Union?

Year: #### Never Don't know

No answer

And in your personal opinion, when, in which year, do you think [your country] should join the European Union?

Year: #### Never Don't know No answer

We combine the information on expectations and preferences to derive an indicator of individuals' attitudes on euro area accession and joining the EU in the case of CPCs. The baseline indicator and a further robustness indicator are defined in table 1.

Of course, the variables and categories may be specified in alternative ways. For example, the categories "aligned" may in fact lump together fairly diverse attitudes. In robustness analyses, we employ the alternative robustness attitude categories.

Finally, for those respondents who name a year for both expected and preferred euro area accession we compute the difference between the expected year of euro introduction and the preferred year of introduction. The same definitions that we apply to the question on euro adoption are applied to the question on EU accession

Table 1

Definition of attitude categories

Stated expectations		Stated preferences	Baseline attitude categories	Robustness attitude categories
Don't know	&	Don't know	Oblivious	Oblivious
Year Year	= &	Year Don't know	Aligned Aligned	Fully aligned Expectation but no preference
Year	> &	Year	Eager	Expect later than preferred
Never		Year	Eager	Expect never but want
Never	&	Never	Negative	Never
Never	&	Don't know	Negative	Never, no preference
Year	<	Year	Reluctant	Expect earlier than preferred Expect but don't want Don't know and don't want
Year	&	Never	Reluctant	
Don't know	&	Never	Reluctant	

Source: Authors' compilation

for the CPCs, which we will also address briefly given that EU entry is the basic precondition for subsequently joining the euro area.

When interpreting the subsequent results, it is important to bear in mind the following issues: First, as is prevalent in many surveys, respondents may round figures, i.e. report one year when their actual response would be an interval between years (see e.g. Manski and Molinari, 2010). This response behavior leads to heaped data with a large number of responses concentrated around particular years. In our analysis, we follow the standard practice and take responses at face value. Chart A4 in the online supplement provides descriptive statistics on the share of responses that are heaped at years that are multiples of 5 and shows that there is no clear development in the share of rounded responses. Second, while we combine expectations and preferences to come up with a derived indicator of attitudes, this should not be interpreted as a substitute for a direct question on the attitude toward euro area accession. Third, item nonresponse rates vary across countries and across survey waves. For the questions regarding euro area accession, we define categories so that "don't know" responses are treated as meaningful. For the majority of the other questions, however, we assume that nonresponse is random, which might be a strong assumption. Finally, the 2020 wave of the OeNB Euro Survey may well be affected by the COVID-19 pandemic, in particular with respect to unit nonresponse and the final sample composition. While the basic sociodemographic characteristics do not indicate that the 2020 sample differs significantly from that of previous waves, we may still be exposed to some bias in terms of unobserved characteristics, e.g. risk aversion, attitudes toward current policies or health.

This could be taken as evidence that, despite the COVID-19 pandemic, uncertainty, which can be one reason for rounding (Binder, 2017), has not increased.

The assumption that item nonresponse is random is not applied to the central explanatory variable "financial literacy." Here, "don't know" responses are treated as incorrect answer. Regarding the central explanatory variables on trust in institutions, we find that the share of individuals who answer "don't know" is below 5%. It is also below 5% if we only look at the subsample of individuals who answer "don't know" regarding either euro introduction expectations or preferences.

2 Euro introduction - expectations and preferences

To start with, we recall that euro adoption is governed by a well-developed institutional and legal framework, which we summarized in Backé and Beckmann (2020). This framework outlines clear conditions and a staged pathway (EU \rightarrow ERM II \rightarrow positive convergence assessment \rightarrow preparations for changeover \rightarrow euro adoption). This path implies a minimum timeline, while achieving a high degree of sustainable convergence may well take more time. Actually, in most cases so far, meeting the criteria in a durable way and thus entering the euro area has taken longer than the minimum timespan implied by the institutional framework.

Based on the regulatory setup, one can determine the technically earliest possible year of euro area accession for each country at a given point in time (in our case, for the field phases of survey waves). We are thus able to distinguish expectations and preferences that could in principle be compatible with the framework from those that are not. To be clear, this distinction only relates to technical feasibility and does not comprise aspects of economic preparedness which may vary substantially from one case to the other.

Recently, monetary integration of the CESEE region has unfolded along these lines: During their first year of ERM II participation, Bulgaria and Croatia recorded exchange rates at the parity rate (Bulgaria) or very close to it (Croatia), fairly stable interest rates and foreign exchange reserve levels. Both countries remain committed to striving for euro adoption over the next few years (Croatia targeting euro area accession in 2023, Bulgaria a year later) and have started implementing the commitments they undertook when joining the exchange rate mechanism.

Around the turn of the year 2020/21, Romania put its intended timeline toward ERM II and euro area accession under revision, implying a delay compared to earlier intentions (the authorities have hinted that the revised timeline could postpone possible ERM II entry to 2024–2025 and euro adoption to 2027–2028).

As for the other CESEE EU MS that have not yet joined the euro area, there has been no change in the authorities' stance on monetary integration in the recent past.

As for the CPCs, EU accession has remained a slow-moving process. The earliest possible EU entry date, namely the year 2025, which was announced back in 2018, has remained in place but looks increasingly difficult to achieve for any of the CPCs given the minimal momentum toward EU accession. Still, there was one development that has a bearing on our topic: In the spring of 2020, the European Council decided to open accession negotiations with Albania and North Macedonia. Moreover, in the fall, i.e. close to the field phase of the 2020 survey wave, the European Commission published its annual enlargement package, also containing annual progress reports on each of the Western Balkan countries. In these reports, the European Commission found that Albania had made "decisive progress" toward the operational start of negotiations (which take place in intergovernmental

See also Backé and Dvorsky (2018) for an overview of euro area enlargement toward CESEE, which presents a more detailed review of the framework and how it evolved as a consequence of the sovereign debt crisis in some euro area countries in the first half of the 2010s and the deepening of European monetary union that was undertaken as a response to the crisis with a view to strengthening the resilience of the euro area.

⁶ EU accession negotiations with Serbia continued proceeding slowly, while Bosnia and Herzegovina remains a potential candidate (considerable progress on multiple fronts would be required before the beginning of accession negotiations could be considered).

conferences), while it confirmed North Macedonia's steady progress. The appraisals of the other Western Balkan CPCs, in turn, were clearly more critical.

Be that as it may, the enlargement commissioner stated to be "very hopeful" that the first intergovernmental conferences with Albania and North Macedonia would be held before the end of the year 2020. These developments were received in a strongly positive way by the media in the two countries, especially in Albania. The arrival of substantial EU support for the Western Balkans to cope with the COVID-19 crisis, after an unwieldy start at the beginning of the crisis in spring, added to the positive sentiment.

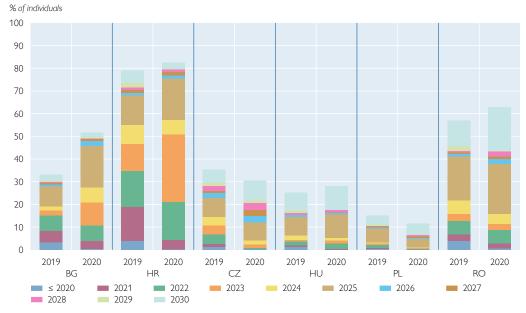
It should be noted that a few weeks after the 2020 field phase, namely in November, Bulgaria blocked accession negotiations with North Macedonia (more concretely the approval process of the "negotiating frameworks" which is supposed to go in tandem for both countries). This has effectively barred further progress since then, thus thwarting the very hopeful attitude that had prevailed back in 2020.

2.1 Recent changes in euro introduction expectations

Chart 1 depicts how euro adoption expectations in the CESEE EU MS covered in this study have developed from 2019 to 2020.⁷ As mentioned, the data have to be interpreted with caution because of rounding (see chart A4 in the online supplement).

Chart

Expectations in CESEE EU member states: Individuals think the euro will be introduced by...



Source: OeNB Euro Survey.

Note: For the survey wave 2019, we recode answer "2019 to 2020." See online supplement for an update of the charts included in Backé and Beckmann (2020).

⁷ For a description of developments until 2019, see Backé and Beckmann (2020).

Starting with the two ERM II countries, expectations have become more optimistic from 2019 to 2020. In Bulgaria, the share of individuals expecting euro adoption by 2024 has risen from close to 20% to almost 30%. In Croatia, this share has increased from 55% to 58%, driven by a strong rise in the share of people that expect euro adoption in 2023. Moreover, in Bulgaria the share of people that "don't know" has fallen from almost 60% to a bit less than 40%. In Croatia, the latter share already dropped significantly from 2018 to 2019 and has remained at slightly above 10%, much smaller than in Bulgaria.

In Czechia, Hungary and Poland, the share of people expecting euro adoption in the course of the 2020s remains low (between 7% and about 20%) and has kept falling in Czechia and in Poland. Moreover, the share of people who expect that the euro will never be introduced in their respective countries remains persistently high (around 30%), and the same is true for the share of "don't know" responses (between 35% and 60%). In Poland, expected euro adoption has clearly shifted into the more distant future between 2019 and 2020.

In Romania, euro adoption expectations did not shift substantially between 2019 and 2020. It is worth mentioning that the share of "don't know" responses has fallen further (to slightly below 20%). Also, it should be noted that the 2020 survey was undertaken before the Romanian authorities announced that they would review and in fact delay the conceived timeline of their monetary integration plans.

Chart 2 presents changes in euro introduction expectations in the CPCs included in this study that occurred between the 2019 and 2020 survey waves. Among the CPCs, euro adoption expectations in Albania and North Macedonia

Chart 2

Expectations in CESEE EU candidates and potential candidates: Individuals think the euro will be introduced by...



Source: OeNB Euro Survey.

Note: For the survey wave 2019, we recode answer "2019 to 2020." See online supplement for an update of the charts included in Backé and Beckmann (2020).

became notably more optimistic in 2020, as compared to 2019. In fact, a large share of people in these two countries expect euro adoption to take place before it will be legally feasible. In North Macedonia, the share of people that expect euro adoption to never take place has come down substantially, as has the share of "don't know" responses. In Albania these two shares have remained stable; the visible changes are driven by altering expectations among those who name a year for euro introduction. We attribute these changes mainly to the developments in the EU accession process in 2020 (see above), which had a clearly uplifting effect on EU accession expectations (see box 1), thus also moving forward expected euro area accession. This combines with the gaps in knowledge about the EU and euro area accession process (see below), in particular about the stepwise nature of the process toward eventual euro adoption and about the lead times required for each step in this process. In our view, this combination of factors is key for grasping why euro adoption expectations brightened notably in North Macedonia and, even more so, in Albania from 2019 to 2020. We also venture that the impasse in the accession process of these two countries seen since late 2020 will impact on expectation formation in the next OeNB Euro Survey wave in the fall of 2021 and, given this deadlock, we would not be surprised to see a reversal in expectations going forward.

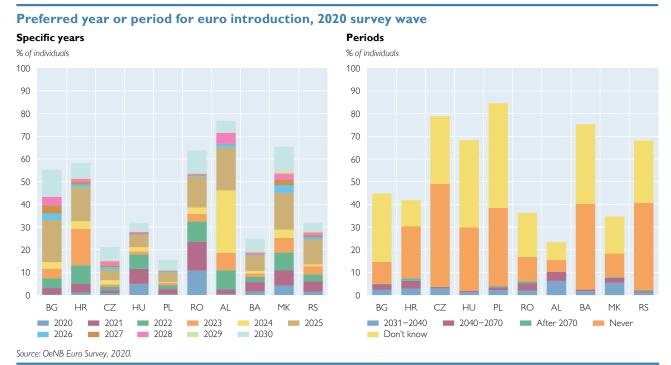
In contrast, euro adoption expectations in Serbia as well as in Bosnia and Herzegovina (where no new momentum was visible in the accession process in 2020) have remained largely unchanged between 2019 and 2020, with one exception: The share of people answering "don't know" has risen from slightly above 20% to a bit more than 30% in Serbia, thus reverting to the levels seen in 2017/18.

2.2 Preferred year for euro introduction

Turning to the distribution of euro adoption preferences, as collected in the fall of 2020, the following points stand out (see chart 38):

There is quite some variation in the shares of those respondents who see themselves in the position to state a preferred time horizon for euro adoption (combined shares of those indicating a year and those answering "never"). The highest shares of people with explicit preferences are found in Croatia and Albania (about 90%), the lowest in Poland (around 55%) and Hungary (about 60%). It is noteworthy that 30% of respondents in Bulgaria are not yet in a position to state a preference, despite the authorities' intention to join the euro area within the next few years. Equally interesting is the high share of people with preferences in Albania and North

Chart 3



⁸ Again, an inclination to round responses is visible.

Macedonia, countries that are not yet EU member states (and still have quite some way to go before joining the EU).

A second notable feature relates to the "never" responses. Here, too, we see considerable heterogeneity across countries. The camp of those who do not want their national currency to ever be replaced by the euro ranges from 5% to 45%, with Albania, Bulgaria and North Macedonia at the lower end of the spectrum, and Czechia, Serbia and Bosnia and Herzegovina at the upper end. Here it is remarkable that in Croatia, where the authorities are eager to introduce the euro as soon as possible, almost a quarter of the population is opposed to adopting the single currency.

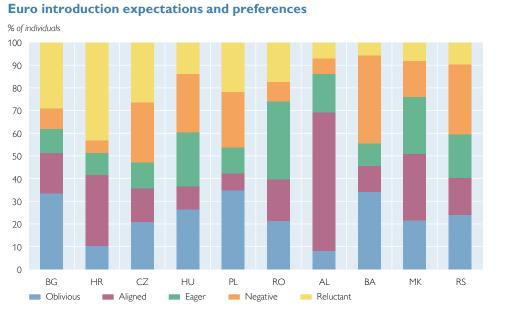
Moreover, most of those who have indicated a preference for the adoption of the euro in their respective countries would like to see the single currency being introduced by 2030. In the two ERM II countries in CESEE, fast euro adoption (within the next three years) is preferred only by 15% in Bulgaria, while the share in Croatia is a bit above 30%. Higher shares of respondents who would prefer a speedy euro adoption can be observed in Romania and Albania (close to 40% and about 45%, respectively). The latter again raises the issue of compatibility with the institutional framework that governs euro introduction. Similarly to what we saw with expectations, there are large, in some cases very large shares of individuals who would want to see a faster euro introduction than technically feasible. The share of preferences that are not congruent with what is possible under the current framework increases further if we also include the "never" responses as incongruent preferences.

2.3 How do euro adoption preferences compare with expectations?

In chart 4, we combine euro adoption expectations and preferences, pooling the survey waves of 2017, 2018 and 2020, and apply the five main categories defined above.

We find that the share of "oblivious" attitudes ranges from 10% (Croatia) to about a third (Bulgaria, Poland, Bosnia and Herzegovina). People whose expecta-

Chart 4



Source: OeNB Euro Survey, 2017, 2018, 2020

tions are congruent (or at least not incongruent) with their preferences, make up between 7% in Poland and about 60% in Albania. Those who would want to see a speedier euro adoption process than they expect form a relatively contained share, between about 10% in five of the ten countries and up to a third in Romania. Also, in North Macedonia (about 25%) and in Hungary and Serbia (about 20%), this group is of tangible relevance. The share of those who cannot conceive euro introduction in their countries, ranges from about 6% in Croatia to almost 40% in Bosnia and Herzegovina. This share is also large in Serbia — about 30% — and in Poland, Czechia and Hungary — around 25%. The share of those who would like to see a later introduction of the euro than they expect in their respective countries (or no introduction at all) is rather small in the CPCs (shares of 5% to 10%). In contrast, these shares are clearly larger and more heterogenous in the CESEE EU MS, ranging from close to 20% in Romania to about 40% in Croatia.

Comparing euro adoption expectations and preferences among those who want to see a slower euro introduction, those who think that euro adoption is moving with appropriate momentum and those who want to see a faster euro introduction, shows that the former expect euro adoption to take place faster than the latter in most cases (see table A2 in the online supplement). Moreover, within these three categories, there is a rather high variation across countries. For example, among those who would like to see a decelerated process, the mean of the expected time-frame for euro adoption in Bulgaria and Croatia is below 5 years, while in Hungary and Poland it is above 8 years. This underlines how important it is to keep the two-dimensional character of the categories in mind: expectations relative to preferences.

It is also informative to look at the question of by how many years those who want a slower or speedier euro adoption process would like to accelerate or decelerate the process. To do so, we compare the means and medians of the (absolute) difference between the expected and the preferred year of euro adoption across countries (table 2). As could be expected, people in the "eager" category would want to speed

up the process to a greater extent in CESEE EU MS in which the authorities are not in a hurry to consider euro adoption in the foreseeable future, and also in most CPCs (except Albania). Medians are lower than means, due to a number of respondents having very bleak expectations about euro adoption (i.e. anticipating it in a very distant future relative to their preferences). Individuals in the reluctant attitude category display a greater variation than eager respondents (based on means). We see that in four out of the ten countries, individuals with reluctant attitudes, on average, would want to slow the process toward euro adoption by a decade or more. These large numbers are due to some respondents indicating a preference for

Table

Difference between expectations and preferences

	Eager		Reluctant		
	Expectation preference		Preference minus expectation		
	Mean	Median	Mean	Median	
	Years			'	
BG	3.64	3	7.21	5	
HR	4.22	3	10.53	5	
CZ	4.69	3	6.21	5	
HU	7.86	5	5.77	5	
PL	7.32	5	10.62	6	
RO	8.46	5	10.59	5	
AL	3.91	3	5.08	3	
BA	7.94	6	4.67	3 5	
MK	8.95	5	5.7	2	
RS	7.79	5	13.65	5	

Source: OeNB Euro Survey, 2017, 2018, 2020.

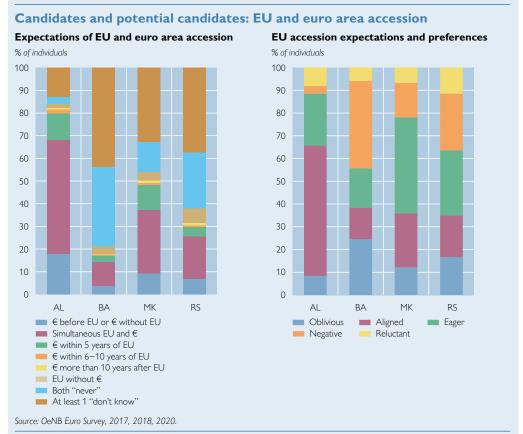
euro adoption in the very distant future (relative to their expectations). Looking at the medians, this effect disappears — and the picture is much more uniform, with most countries displaying a median of 5 years, i.e. the median reluctant individual would want to see euro adoption half a decade later than they expect it to happen.

Box 1

EU accession versus euro adoption expectations and preferences

For EU candidates and potential candidates (CPCs), we complement the previous analysis by also looking at EU accession expectations and preferences. The left-hand panel of chart B1 presents EU and euro area accession expectations in comparison. A couple of interesting points emerge.

Chart B1



Again, the issue of the institutional framework appears quite prominently: Introducing the euro before (or without) entering the EU or simultaneously with joining the EU is clearly incompatible with the rules that govern euro area accession. The same also holds true for an adoption of the euro very swiftly after EU accession, as well as for "EU without (eventual) euro." These incongruities are most widespread in Albania, but also substantial in North Macedonia.

The share of individuals who voice expectations of never joining the EU and euro area – highest at about 35% in Bosnia and Herzegovina, but also considerable in Serbia and North Macedonia – are genuinely sobering, given that CPCs are destined to become EU member states and that the EU would never be truly European without these countries joining at some point – even if this prospect is still rather distant.

Also, the high share of "don't know" responses on one or both integration steps in three of the four CPCs is discomforting, both in terms of the knowledge gaps and uncertainty it suggests.

The right-hand panel in chart B1 applies the two-dimensional approach introduced earlier to EU accession expectations and preferences. A key takeaway is that in all countries the share of those who want EU accession to occur faster than they expect (eager attitude) is (much) larger than those who want to see a later EU entry than they expect (reluctant attitude). While the eager attitudes range between close to 20% (Bosnia and Herzegovina) and more than 40% (North Macedonia), the reluctant ones make up only 7% to 12%. Thus, authorities that would be willing to speed up preparations for EU accession would have a solid supporter base in the population. Echoing earlier results, the large shares of people that perceive EU membership as inconceivable in Bosnia and Herzegovina as well as Serbia stick out again.

Finally, it is eye-catching that more than half of the Albanian respondents expect EU accession to proceed in line with their preferences (in terms of timing). At the same time, a sizable share of people in this category has very optimistic expectations indeed about the timing of EU accession (compared to the EU's announcement to envisage enlargement toward the Western Balkans by 2025 at the earliest). Therefore, going forward, expectations and preferences may not be durably aligned.

3 Empirical framework and strategy

What drives attitudes toward euro area accession? This question is the object of our empirical analysis. We study how financial literacy and trust in institutions interact with preferences in determining expectations. We focus on the following hypotheses regarding trust and financial literacy:

- 1. Financial literacy has an impact on the overall attitude toward euro area accession.
 - a. Financially literate individuals are more likely to hold a view when the euro should be adopted.
 - b. The euro adoption preferences of financially literate individuals diverge less from their related expectations than those of financially illiterate individuals.
- 2. Trust in institutions has an impact on the overall attitude toward euro area accession.
 - c. Individuals who trust in institutions are more likely to have a preference when the euro should be adopted.
 - d. Individuals who trust in institutions have more favorable attitudes toward euro area accession.
 - e. Trust in national institutions has a smaller impact on attitudes than trust in European institutions.

To investigate these hypotheses, we estimate probit models with five alternative dependent variables that reflect the different categories of attitudes toward euro area accession (see section 1, table 1), denoted by *A*:

$$P(A=1) = \Phi_A(X_A\beta_A + u_A)$$

Following the standard estimation in the literature on expectations, we control for age, gender, education and income (Bryan and Ventaku, 2001; Bruine de Bruin et al., 2010). In alternative specifications, we additionally control for marital status and household size as well as labor market status and indicators of wealth. However, these additional socioeconomic controls are mainly insignificant and we, therefore,

do not include them in the baseline models. Our main explanatory variables are financial literacy and trust in national and European institutions, which have been shown to influence inflation expectations (see e.g. Bruine de Bruin et al., 2010; D'Acunto et al., 2019; Mellina and Schmidt, 2018; Christelis et al., 2020). We include country and wave fixed effects and cluster standard errors at the PSU-wave level, which shifts the focus to heterogeneity between individuals.

For those individuals who express both an expected and preferred year for euro adoption, we additionally analyze what determines the magnitude of the difference between expectations and preferences by estimating ordinary least square models. For these estimations we reduce the sample to the subsample of individuals in categories 2 "eager" and 4 "reluctant," respectively.

We run several robustness analyses to address the following issues: heterogeneity between countries, endogeneity concerns as well as concerns regarding the definition and distribution of the dependent variable.

4 The role of trust and financial literacy

Which attitudes do people have toward euro area accession? Table 3 presents the basic socioeconomic determinants of attitudes toward euro introduction. Age and gender, for instance, significantly affect these attitudes. Women are more likely to have an "oblivious" attitude, while older individuals are often against a speedier introduction of the euro than they expect. Compared to individuals with only primary education, both individuals with secondary and with tertiary education are more likely to express an attitude toward euro area accession. Income shows a similar pattern. Compared to low-income individuals, those with higher income are significantly more likely to express attitudes and also to prefer an earlier euro introduction than they expect. Labor market status does not have a significant impact on attitudes (results not shown) and is subsequently dropped from the baseline control variables.

With regard to our hypotheses, table 4 reports results on how financial literacy and trust in national and international institutions affect attitudes (see table A1 in the online supplement for variable definitions). We present results where trust and literacy are included simultaneously; however, the significance and size of marginal effects does not change if we study effects stepwise. ¹¹

Regarding hypothesis 1, we find that financial literacy has a significant impact on attitude formation.¹² We confirm that higher levels of financial literacy are positively and significantly correlated with expressing a preference for euro adoption

⁹ Bear in mind that age is a continuous variable when looking at the average marginal effect in table 3. Computing marginal effects at representative values of age, we find that the propensity to give a "don't know" response ("oblivious") with respect to euro introduction is U-shaped, decreasing from a marginal effect of 20% for 18-year-olds to 18% for 45-year-olds and then increasing to 24% for those aged 70 and older. The propensity to display an "eager" attitude with respect to euro introduction decreases with age, starting from a marginal effect of 23% for 18-year-olds and decreasing to 18% and lower for those aged 55 plus.

We investigate whether results for income and education are driven by a correlation between the two variables. Table A4 shows that effects are remarkably stable if we include income and education in separate models and if we include the variables jointly as in our baseline. We add further control variables regarding the exposure to defacto euroization, described in the online supplement; full regression results are presented in table A3.

We further study if and how trust in institutions and financial literacy interact. We do not find strong evidence that trust and financial literacy reinforce or counteract each other.

 $^{^{12}}$ F-tests show that the effects for the three different levels of literacy are significantly different from each other.

Table 3

How are socioeconomic characteristics and euroization correlated with attitudes?

Dependent variable	Oblivious	Aligned	Eager	Negative	Reluctant
Female	0.030***	-0.006	-0.019***	-0.009*	0.003
Age	(0.005) 0.00	(0.005) -0.001***	(0.005) -0.001***	(0.005) 0.001***	(0.005) 0.001***
Education: secondary	(0.000) -0.034***	(0.000) 0.026**	(0.000) 0.00	(0.000) 0.001	(0.000) 0.019**
,	(0.008)	(0.010)	(0.010)	(0.008)	(0.008)
Education: tertiary	-0.063*** (0.010)	0.051*** (0.012)	0.004 (0.011)	-0.011 (0.010)	0.023** (0.010)
Income: refused answer	0.056*** (0.010)	-0.052*** (0.009)	-0.017** (0.009)	0.001 (0.009)	0.004 (0.008)
Income: medium	-0.016**	-0.005	0.037***	-0.032***	0.016**
Income: high	(0.007) -0.031***	(0.008) 0.011	(0.008) 0.045***	(0.008) -0.038***	(0.007) 0.009
S	(0.008)	(0.009)	(0.009)	(0.009)	(0.008)
Country and wave fixed effects	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
Further controls, table A3 Log-L	–11,401.8	–12,096.2	–11,224	–11,052.7	–10,616.4
Pseudo-R2	0.06	0.12	0.06	0.1	0.1
N	24,802	24,802	24,802	24,802	24,802
P(DepVar=1)	0.19	0.24	0.19	0.2	0.18

Source: Authors' calculations.

Note: Average marginal effects from probit regressions. Standard errors are clustered at the PSU-wave level. ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively. Based on data from 2017, 2018 and 2020.

that is speedier than expected. Compared to financially illiterate individuals (omitted category) those who have knowledge about interest rates, inflation and exchange rate risk are 10 percentage points more likely to expect euro area accession later than they would prefer (see "eager" column). However, we also find that financially literate individuals are more likely to prefer a later introduction of the euro than they would expect. The effect is much smaller at 2 percentage points (see "reluctant" column). We dig deeper into these two somewhat inconclusive findings regarding eager and reluctant attitudes and see that financial literacy only has an impact on those reluctant individuals who expect a specific year of introduction but do not want the euro to be introduced at all.¹³

¹³ Moreover, we find that this result seems to be driven by Croatia as the effect disappears if we drop Croatia from the sample.

Table 4

How do financial literacy and trust in national and European institutions affect attitudes?

	Dependent variable	Oblivious	Aligned	Eager	Negative	Reluctant
Model 1	Financial literacy: low Financial literacy: medium Financial literacy: high Trust in EU Trust in government	-0.050*** (0.008) -0.069*** (0.009) -0.066*** (0.010) -0.007 (0.006) -0.003	-0.014* (0.009) -0.003 (0.009) -0.020** (0.010) 0.073*** (0.006)	0.044*** (0.008) 0.058*** (0.008) 0.095*** (0.010) 0.084*** (0.006) -0.036***	0.005 (0.008) -0.015* (0.008) -0.027*** (0.009) -0.105*** (0.006) -0.029***	0.023*** (0.008) 0.032*** (0.008) 0.022*** (0.008) -0.052*** (0.006) 0.004
	Trust iii governinent	(0.007)	(0.007)	(0.007)	(0.007)	(0.004)
	Further controls Country-wave fixed effects Log-L Pseudo-R2 N P(DepVar=1)	Yes Yes -11,834.7 0.06 25,602 0.19	Yes Yes -12,100 0.14 25,602 0.24	Yes Yes -11,200 0.12 25,602 0.2	Yes Yes -11,023.7 0.1 25,602 0.19	Yes Yes -11,300.4 0.08 25,602 0.19
Model 2	Financial literacy: low Financial literacy: medium Financial literacy: high Trust in ECB Trust in central bank	-0.064*** (0.014) -0.076*** (0.015) -0.075*** (0.015) 0.004 (0.012) -0.018 (0.012)	-0.008 (0.017) 0.001 (0.017) -0.006 (0.019) 0.066*** (0.014) 0.062*** (0.014)	0.035* (0.020) 0.053*** (0.019) 0.091*** (0.020) 0.053*** (0.013) -0.029** (0.013)	0.026* (0.014) 0.007 (0.015) -0.011 (0.016) -0.093*** (0.012) -0.016 (0.012)	0.034** (0.014) 0.036** (0.015) 0.014 (0.016) -0.040*** (0.012) -0.002 (0.012)
	Further controls Country fixed effects Log-L Pseudo-R2 N P(DepVar=1)	Yes Yes -3,389.9 0.09 8,066 0.17	Yes Yes -4,002.9 0.16 8,066 0.28	Yes Yes -3,591.5 0.08 8,066 0.19	Yes Yes -3,353.1 0.15 8,066 0.19	Yes Yes -3,317.9 0.1 8,066 0.17

Source: Authors' calculations.

Note: Average marginal effects from probit regressions. Standard errors are clustered at the PSU-wave level. ***, *** and * indicate significance at the 1%, 5% and 10% level, respectively. Model 1 is based on data from 2017, 2018 and 2020. Model 2 is based on data from fall 2020 only as the question on trust in the ECB was included in this wave only.

Table 3 shows that highly educated individuals are not more likely to prefer accelerated euro introduction. However, financially literate individuals are. Chart 5 addresses the question of whether financial literacy has an impact on attitudes toward euro introduction beyond education. It shows that the impact of financial literacy on top of education is strongest for respondents in the eager attitude category.

Among individuals with tertiary education, those who are highly financially literate are 10 percentage points more likely to be "eager" than those who are financially illiterate (omitted category). The difference is 7 percentage points compared to those who have low financial literacy.

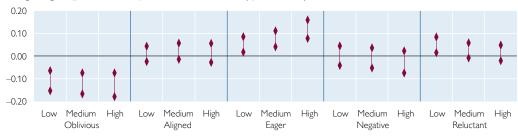
Turning to our second hypothesis on how trust affects attitudes, we do not find that individuals who trust in national or European institutions are less likely to be "oblivious," which somewhat contradicts our hypothesis. However, we find that both trust in the government and in the EU increases the likelihood of having

Chart 5

Does financial literacy have an effect beyond education level?

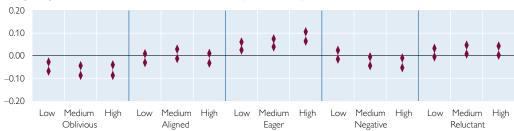
Subsample: primary education

Average marginal effects and 95% confidence interval, broken down by financial literacy level



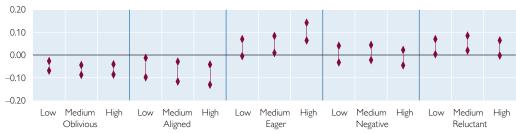
Subsample: secondary education

Average marginal effects and 95% confidence interval, broken down by financial literacy level



Subsample: tertiary education

Average marginal effects and 95% confidence interval, broken down by financial literacy level



Source: Authors' calculations.

Note: Average marginal effects of financial literacy on the dependent variables: oblivious, aligned, eager, negative, reluctant. Based on probit regressions where explanatory variables are equal to those listed in table 4, model 1. Regressions are run separately for the three subsamples of educational attainment.

expectations that are aligned with preferences by 7 and 6 percentage points, respectively (see "aligned" column in table 4). The same effect is found for trust in the ECB and the national central bank. In addition, trust in European institutions is associated with a higher likelihood of preferring accession earlier than expected — 8 percentage points higher for trust in the EU and 6 percentage points for trust in the ECB. Those who trust in national institutions, by contrast, are less likely to be "eager." Furthermore, trust in European institutions is associated with a lower propensity to prefer accession later than expected (5 percentage points for trust in the EU and 4 percentage points for trust in the ECB). Trust in national institutions has no significant impact on preferring accession to occur later than expected.

In table 5, we investigate whether financial literacy or trust is associated with a bigger or smaller difference between expectations and preferences. Regressions are based on the subsamples of individuals who are classified as eager or reluctant.

Table 5

What drives the difference between expectations and preferences?

Dependent variable	Difference in years: expected minus preferred	Difference in years: preferred minus expected	
Sample	Reluctant	Eager	
Financial literacy: low	0.989	-0.066	
Financial literacy: medium	(0.884) 1.069 (0.917)	(0.604) 0.997 (0.707)	
Financial literacy: high	0.965	0.064	
Trust in EU	(1.133) -2.154*** (0.728)	(0.751) -1.389** (0.580)	
Trust in government	-2.316*** (0.677)	-1.453*** (0.405)	
Country and wave fixed effects Constant	Yes 10.714*** (3.682)	Yes 1.56 (1.918)	
Country and wave fixed effects R2 N P(DepVar=1)	Yes 0.053 1,704 8.54	Yes 0.047 3,042 6.98	

Source: Authors' calculations

Note: Based on ordinary least squares regression. For the dependent variables, "difference in years" is computed in such a way that positive values indicate a larger discrepancy between preferences and expectations both for "expect later than preferred" and for "expect earlier than preferred." Note that for this analysis, we only look at the subsample of eager respondents, where year > year and the subsample of reluctant respondents where year < year and exclude any eager and reluctant respondents with "don't know" or "never" responses. This also explains why the share of eager and reluctant respondents is similar in chart 4, but the number of observations here differs. ***, ** indicate significance at the 1%, 5% and 10% level, respectively.

Results show that financial literacy is not significantly correlated with the difference between expectations and preferences both regarding eager and reluctant attitudes. However, both trust in the government and the EU is associated with a smaller difference between preferences and expectations. ¹⁴

5 Robustness analyses

As mentioned in section 3, our robustness analyses focus on addressing differences between countries, endogeneity concerns and the distribution of our dependent variable.

We take into account that CESEE-10 countries are very diverse and repeat estimations dropping one country at a time. We confirm that results are not driven by a particular country.

Tables 4 and 5 show results for all CESEE-10 countries: After controlling for country fixed effects, we find heterogeneities between individuals living in very diverse institutional backgrounds. Table A5 shows that results are similar but, as expected, not equal if we look at the subsample of EU member states and CPCs separately.¹⁵

Furthermore, CESEE-10 countries also exhibit strong regional divergence in terms of economic development. Controlling for differences in regional economic and financial development does not affect results.

When we look at the effect of trust in the national government and the EU, we pool the survey waves from 2017, 2018 and 2020. As mentioned in section 1, the pandemic may have introduced a bias in the sample that is not fully mitigated by controlling for sociodemographic characteristics. To address this concern, we repeat the estimations of table 4, columns 1 to 3, separately for each wave.

Most importantly, both trust and financial literacy are likely endogenous, and the results presented in tables 4 and 5 should not be interpreted as causal. Considering the endogeneity of our central explanatory variables, we conduct a large number of

¹⁴ In a separate analysis, we study whether COVID-19 containment measures affected attitudes toward euro introduction by running regressions for 2020 only and including indicators on the stringency of containment measures and the severity of the pandemic. We find some indication that individuals who are exposed to more stringent containment measures are more likely to both expect and prefer the euro to never be introduced.

For CPCs, the institutional framework stipulates that euro area accession will only take place after joining the EU. We repeat estimations for CPCs but employ attitudes on joining the EU as the dependent variable. Results show that the effect of financial literacy on attitudes is somewhat weaker and the effect of trust, in particular trust in the EU, is somewhat stronger.

robustness analyses. First, we examine if results change in terms of magnitude and significance if we include additional control variables for labor market status, household size, ownership of financial assets and wealth.

Second, we investigate whether trust is a proxy for other beliefs that we do not control for and include trust in the stability of the national currency and trust in the stability of the euro as additional controls. Third, we test whether the experience of hyperinflation during transition in the 1990s affects the results. ¹⁶ Finally, we control for inflation expectations and expectations regarding economic developments in the country. None of these additional controls change the significance and magnitude of the effects we present in tables 4 and 5.

Moreover, we make an effort to address endogeneity concerns by employing instrumental variable (IV) estimations. Even though these results are likely less biased, we do not present them in the main body of the paper as it is beyond the scope of the paper to present a thorough discussion of the IV assumptions; some of the instruments we employ are not available for all waves.

Table 6 shows IV estimates for trust. We employ an indicator of trust in other institutions (police as well as a joint indicator of trust in domestic and foreign banks)¹⁷ as well as an indicator of the quality and duration of mobile coverage as instruments. The rationale for these instruments is that trust in the institutions we name should be correlated with trust in the government but should not directly influence euro adoption expectations. Regarding the quality and duration of mobile coverage, we draw on Guriev et al. (2020), who show that an increase in internet access reduces government approval and increases the perception of corruption in government.

Table 6 corroborates our earlier findings with respect to trust. The estimated effects of trust in the government and the EU are of very similar magnitude or stronger when using IV estimations. Regarding financial literacy, we first examine whether effects are driven by one particular aspect. This might be the case for knowledge about exchange rate risk, in particular in highly euroized countries. We do not find that this is the case. We also repeat estimations using the share of "don't know" responses to the questions not used in this analysis as an instrumental variable for financial literacy. Again, results are very similar to those in table 4, but the Kleibergen-Paap statistic indicates that the instrumental variables are only weakly correlated with regressors.

Finally, as an alternative to estimating separate probit models we estimate multinomial logit models (see online supplement, tables A6 and A7).

Malmendier and Nagel (2016) provide evidence that individuals overweight inflation experienced during their lifetime when forming inflation expectations.

¹⁷ In our preferred specification, we use trust in courts, notaries and cadastres as instruments; however, these variables are only available for the 2017 survey wave. Results are similar to the specification presented in table 6.

¹⁸ In line with Guriev et al. (2020), we find a negative and significant impact of mobile coverage rollout on trust in government.

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	Dependent variable	Oblivious	Aligned	Eager	Negative	Reluctant
OLS	Trust in EU Trust in government	-0.006 (0.005) -0.002 (0.006)	0.074*** (0.005) 0.064*** (0.006)	0.087*** (0.005) -0.039*** (0.005)	-0.103*** (0.005) -0.027*** (0.006)	-0.052*** (0.005) 0.003 (0.005)
2SLS	Country and wave fixed effects, further controls R2 N Trust in EU Trust in government	Yes 0.056 25,602 0.009 (0.026) -0.015	Yes 0.158 25,602 0.101*** (0.027) 0.068***	Yes 0.075 25,602 0.121*** (0.026) -0.066***	Yes 0.111 25,602 -0.081*** (0.025) -0.088***	Yes 0.102 25,602 -0.150*** (0.025) 0.102***
	Country and wave fixed effects, further controls R2 N	(0.025) Yes 0.056 25,505	(0.026) Yes 0.157 25,505	(0.025) Yes 0.073 25,505	(0.025) Yes 0.107 25,505	(0.025) Yes 0.083 25,505
2SLS first stage	Dependent variable	Trust in EU				
	Quality and duration of mobile coverage Trust police	-0.165*** (0.036) 0.177***				
	Trust banks Kleibergen-Paap F-stat.	(0.006) 0.373*** (0.007) 204,252				
2SLS first stage	Dependent variable	Trust in governm	ent			
·	Quality and duration of mobile coverage	-0.096*** (0.032)				
	Trust police Trust banks	0.358*** (0.006) 0.194***				
	Kleibergen-Paap F-stat.	(0.006) 204,252				

Source: Authors' calculations.

Note: ***, *** and * indicate significance at the 1%, 5% and 10% level, respectively. The OLS panel repeats estimations of table 5, model 1, but as a linear probability model. The 2SLS panel presents instrumental variable estimates for table 5, model 1. The 2SLS first stage panel shows the first stage estimations for trust in EU and trust in government.

6 Conclusion

In this study, we investigate people's attitudes on euro adoption. We look at a sample of ten CESEE countries that have retained their national currencies to date, namely six EU member states (Bulgaria, Croatia, Czechia, Hungary, Poland and Romania) as well as four EU candidates and potential candidates in the Western Balkans (Albania, Bosnia and Herzegovina, North Macedonia and Serbia). For our analysis, we use data from the OeNB Euro Survey from 2017 to 2020. We present unique evidence not only on euro adoption expectations but also on preferences using data revealing when people think the euro will be introduced and when they think the euro should be introduced. Contrasting and combining these two aspects allows us to describe the overall range of attitudes toward euro adoption.

We show that attitudes on euro adoption vary widely within and across countries. In our country sample, on average, 18% would prefer a faster accession

to the euro area than they expect, while another 18% would prefer a later euro introduction than they expect. For 22% of the population, expectations are aligned with preferences. 19%, on average, neither expect nor want euro area accession to take place at all. Finally, 23% indicate that they have not formed attitudes on the introduction of the euro in their respective countries. It is noteworthy that expectations and preferences are less divergent in Bulgaria and Croatia, which have participated in ERM II since July 2020, than in other CESEE EU countries.

In regression analyses, we show that attitudes toward euro area accession differ across sociodemographic groups, with the more educated and wealthier individuals being more likely to hold a definite view on accession. Financial literacy is positively correlated with forming both definite expectations and preferences. However, financially literate individuals tend to more frequently prefer a later or earlier introduction than they expect. At the same time, financially literate individuals are significantly less likely to want or expect their country to never join the euro area. In addition, we show that financial literacy affects attitudes on top of education. Trust in national and European institutions affects attitude formation. Those who trust European and national institutions are more likely to hold preferences that are in line with their expectations. Trust in European institutions is associated with preferring faster accession to the euro area than expected, while trust in national institutions is associated with preferring a slower accession than expected. We show that these results are robust to different specifications in terms of estimation methods and control variables.

From a policymaking perspective, we would like to flag the following points: First, there still appears to be room for improving the knowledge about the euro adoption process and the conditions and timelines it involves in the CESEE countries covered in this study. Supporting people in forming expectations in the first place and promoting the compatibility of such expectations with the euro adoption framework would allow people to make better-informed financial decisions. Moreover, a deeper discussion about the euro and the costs and benefits of a prospective euro area participation could have a favorable impact on the formation of preferences, too. Similarly, people in the CPCs could benefit from efforts geared at explaining how the EU accession process is designed. Second, financial literacy and trust are important in aligning expectations and preferences, but also for promoting more supportive attitudes toward euro adoption. While it takes time to build a track record and thus trust in national institutions (and trust in EU institutions is partly beyond the influence of national policymakers), advancing financial literacy is clearly better suited for more immediate policy action in individual countries. Third, communication is key, especially for authorities that target euro adoption over the near to medium term — the objective being twofold: Announcing a clear and comprehensive strategy and involving all parts of society before and during its implementation is paramount for aligning people's expectations with the plans of the authorities. At the same time, laying out the rationale for the chosen strategy (including paying genuine attention to reservations and worries) in an open and nuanced way should help to win over those people, or at least many of them, who are not yet (fully) convinced of the path the authorities are embarking upon and thus may still hold preferences that diverge from policymakers' plans. Given the substantial heterogeneity across countries that we again show in this paper, policies must be tailored to local conditions. As we already highlighted in

Backé and Beckmann (2020): "What works in one country, may not necessarily work in another."

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