

How financially literate is CESEE? Insights from the OeNB Euro Survey

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Drawing on data from the OeNB Euro Survey, we document financial literacy across ten countries in Central, Eastern and Southeastern Europe (CESEE-10) between 2012 and 2018. We analyze people's understanding of the "big three" concepts of financial literacy: interest rates, inflation and risk diversification. We show that financial literacy differs across and within countries. On average, just one in five adults can be considered financially literate. Our results show that low financial literacy levels are more common among older and less educated individuals and that self-employment is only weakly related to higher literacy. In line with previous research, females show lower levels of financial literacy than their male counterparts. However, the gender gap observed in the CESEE-10 (countries with a communist legacy) is small compared to the gap in countries that do not have a communist legacy. Individuals who experienced economic turbulence during transition from planned to market economies tend to be more financially literate regarding inflation. While indicators of economic and financial development are correlated with higher financial literacy at the country level, interactions are more complex at the intracountry level.

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The number of adults with access to bank accounts and credit has been increasing steadily since 2011 (see *Global Findex Database*²), and the range and complexity of financial products offered to households has risen significantly as well (Célérier and Vallée, 2017). At the same time, more responsibility has been shifted to households with regard to their financial decisions, for example by pension systems moving from defined-benefit to defined-contribution plans (Barr and Diamond, 2006; OECD, 2019a). Taking these developments into account, it is clear that financial literacy is becoming more and more important (Lusardi and Mitchell, 2014; OECD, 2006).

From previous research, financially literate individuals are known to be (1) more successful at job planning and saving for retirement (Behrman et al., 2012); (2) more likely to participate in the stock market (Almenberg and Dreber, 2015; van Rooij et al., 2011); and (3) more likely to diversify their savings (Hastings et al., 2013). In contrast, individuals who lack financial literacy are more prone to take high-cost loans and become overindebted (Lusardi and Tufano, 2015) and to encounter repayment difficulties (Gerardi et al., 2013).

To remedy this situation, many countries have implemented national strategies for financial education seeking to improve "financial literacy with a view to promoting healthier financial behaviors and improving financial well-being" (OECD, 2015). In this context, the OECD argues that "policymakers, educators and researchers need high-quality data on levels of financial literacy in order to inform

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² <https://globalindex.worldbank.org/>.

financial education strategies” (OECD, 2013). Indeed, the number of surveys undertaken to gain a better understanding of financial literacy is steadily increasing. However, some of these surveys are not appropriate for comparisons across countries as they vary regarding the sociodemographic groups that are surveyed. For instance, some studies consider only young or only old people whereas others consider adults in general. Moreover, the studies also differ in the way they define and measure financial literacy.³

To deal with this shortcoming, numerous efforts have been made to come up with harmonized definitions and measures of financial literacy, allowing for cross-country comparisons. One of the most prominent of these projects was initiated by the *OECD International Network on Financial Education (OECD/INFE)*, which provides harmonized data on financial literacy for 30 countries (Atkinson and Messy, 2012; OECD, 2016). Furthermore, the World Bank has developed financial capability surveys and is actively involved in developing financial education strategies (World Bank, 2014). Another well-known initiative is the so-called *Financial Literacy around the World (FLat World)*⁴ project, which collects answers to three standard financial literacy questions on *interest rates*, *inflation* and *risk diversification* (Lusardi and Mitchell, 2008). In the literature, these questions have come to be known as the “big three” (see, for example, Barboza et al., 2016).

In this paper, we present unique survey evidence on individuals’ understanding of the “big three” concepts of financial literacy for ten Central, Eastern and South-eastern European (CESEE-10) countries for the period from 2012 to 2018. One distinct advantage of our data is that the wording of the financial literacy questions put to respondents (always the adult population) and the survey mode were exactly the same in all ten countries. We contribute to the literature by presenting evidence for countries with a rather short history of developed financial systems and consumer finance. To the best of our knowledge, this is the first paper that analyzes evidence for the three standard financial literacy questions over a period of more than five years using a dataset that has sufficient observations to dig into intracountry heterogeneities. Moreover, we add to the FLat World project by providing comparable statistics on financial literacy for countries that have not yet been covered by the project. We present evidence of how financial literacy varies across sociodemographic groups and, by comparing our results to those from other surveys, we show that in the CESEE-10 (all countries with a communist legacy) the gender gap in financial literacy is smaller than in countries that do not have a communist legacy (similar findings were made by Cupák et al., 2018). For each of the ten CESEE countries under study, the *online annex* of our paper provides indicators of financial literacy for different sociodemographic groups and regions. This evidence can be used as input for policy work and further research.

The rest of this paper is organized as follows: Section 2 describes the data; section 3 presents details on the “big three” financial literacy questions and discusses the strengths and weaknesses of these questions. Section 4 presents the corresponding results, describing the variation in financial literacy across countries.⁵

³ For an overview of the various definitions of financial literacy, see annex A1. In this article, we use the terms “financial literacy” and “financial knowledge” as synonyms, i.e., we use a very narrow definition of the financial literacy concept (see World Bank, 2014).

⁴ <https://gflec.org/initiatives/flat-world/>.

⁵ For the variation of financial literacy over time, see the *online annex*.

We also compare our financial literacy results with those of other surveys that have been conducted in the CESEE-10. Section 5 analyzes intracountry variation of financial literacy and its correlates. Section 6 discusses the variation in financial literacy across sociodemographic groups, section 7 describes how the transition experience is related to literacy and section 8 provides concluding remarks.

1 Data: the OeNB Euro Survey

The main source of data for our analysis is the *OeNB Euro Survey* – a survey carried out by Austria’s central bank among individuals, aged 15 or older, in ten Central, Eastern and Southeastern European countries: six EU Member States that are not part of the euro area (Bulgaria, Croatia, Czechia, Hungary, Poland and Romania) and four EU candidates and potential candidates (Albania, Bosnia and Herzegovina, North Macedonia and Serbia).

The Euro Survey has been conducted on a regular basis since 2007 as a repeated cross-sectional face-to-face survey. In each country and in each survey wave, a sample (based on multistage random sampling procedures) of around 1,000 individuals is interviewed. Each sample reflects a country’s population characteristics in terms of age, gender, region and ethnicity.

When interpreting the results presented in this paper, the following issues should be taken into account: Nonresponse varies across countries and across survey waves. The gross sample size ranges approximately from 1,500 to 3,000 across countries and waves. The number of interrupted interviews is zero in some countries and up to 200 in other countries. In the absence of information on the number of individuals who refused to participate in the survey, we cannot construct non-response weights. Regarding unit nonresponse, we do not impute missing values but assume that nonresponse is random, which is arguably a strong assumption. However, for the central questions of interest – the questions on financial literacy – the share of “no answer” responses is below 3% in all countries and waves.

Weights are calibrated on census population statistics for age, gender, region, and, where available, on education and ethnicity. Weights are calibrated separately for each wave and country. For the majority of countries, population statistics relate to the year 2011; more recent census data were available only for some countries.⁶

All in all, we use data from six Euro Survey waves between 2012 and 2018,⁷ meaning that our dataset covers a total of around 60,000 observations.⁸ The central variables of our analyses are derived from the three questions on financial literacy referred to above. Beyond that, the survey questionnaire elicits a rich set of information on socioeconomic characteristics, indicators of wealth and household finances, individual beliefs, expectations and trust.

The survey also contains the addresses (at the street level) of the primary sampling units (PSUs), i.e. of the units that are selected in the first stage of the multistage random sampling process, which is ultimately aimed at selecting individual elements. Put simply, these are the points where the interviewer starts walking to

⁶ Strictly speaking, the weighted descriptive statistics in this paper, therefore, do not represent the “current population” but an “average population” that never existed precisely like that.

⁷ We do not use data from the 2017 wave as this wave included only two of the three financial literacy questions.

⁸ Using the estimated variance based on survey results and allowing for a 5% margin of error to calculate “optimal sample size,” we find that our sample size is adequate for analyses at the NUTS-2 level for larger countries (e.g. Poland) and at the NUTS-3 level for smaller countries (e.g. Albania).

select specific addresses, and ultimately individuals, to participate in the survey. Depending on the country, there are between 100 and 300 PSUs per country. The maximum number of interviews conducted around one PSU is 25. We geocode the PSU addresses and calculate the area around the PSU points at different radii (5km, 10km, 20km). For each area, we compute (1) indicators of urbanicity and (2) proxies for local economic activity such as average stable night light following Henderson et al. (2012). We merge the survey data with these indicators at the area level. Both indicators have been shown to be associated with financial literacy at the country level (Klapper and Lusardi, 2019).

3 Measurement of financial literacy

Lusardi and Mitchell (2008, 2011a) came up with a short list of questions to measure financial literacy with regard to three aspects: *interest rates*, *inflation* and *risk diversification*. The questions were designed taking into account four principles: *simplicity*, *relevance*, *brevity* and *capacity to differentiate*. Originally included in the U.S. Health and Retirement Study, the “big three” were later adopted as a measure of financial literacy for the FLat World project – a project that aims at comparing financial literacy and its effect on economic decision making (such as retirement planning) across countries (Lusardi and Mitchell, 2011c). The financial literacy measure that we use in this article is solely derived from these three questions. This is admittedly a shortcoming of our article as the scope of this measure is obviously limited. A more comprehensive measure of financial literacy has been developed by the World Bank (see, for instance, Bolaji-Adio et al., 2013) and the OECD/INFE (see, for instance, OECD, 2018).

The three financial literacy questions as put to Euro Survey respondents are shown in table 1. The questions on interest rates and inflation use the original wording. With regard to the question on risk diversification, which originally referred to *stock mutual funds*, various surveys have used a different wording, as stock mutual funds are not commonly known in all countries; see for example the S&P Global Finlit Survey (Klapper and Lusardi, 2019).⁹ The Euro Survey follows this approach: respondents are asked whether they think that the risk of losing money when spread among different assets *increases*, *decreases* or *stays the same*, rather than whether they consider a *single company stock* to provide a safer return than a *stock mutual fund*.¹⁰

Based on the three questions, previous research commonly defines three binary variables where the correct answer is coded as 1, wrong answers and “do not know” responses are coded as 0, and “refuse to answer” responses are coded as “missing.” The three binary variables are then aggregated to a financial literacy score, defined as the number of correct answers (see, for example, Bucher-Koenen and Lusardi, 2011; and Bucher-Koenen and Ziegelmeyer, 2013). In our paper, we follow this approach and define (1) three separate binary variables for each of the three financial literacy questions and (2) a financial literacy score taking on integer values between 0 and 3.

⁹ <https://gflec.org/initiatives/sp-global-finlit-survey/>.

¹⁰ The wording of the original risk diversification question as designed by Lusardi and Mitchell (2011a) is as follows: *Do you think that the following statement is true or false? “Buying a single company stock usually provides a safer return than a stock mutual fund.” True; False; I do not know; I refuse to answer.*

Table 1

The big three financial literacy questions included in the OeNB Euro Survey

Concept	Question
Interest rate	Suppose you had 100 [local currency] in a savings account and the interest rate was 2% per year. Disregarding any bank fees, how much do you think you would have in the account after 5 years if you left the money to grow: (i) More than 102 [local currency]* (ii) Exactly 102 [local currency] (iii) Less than 102 [local currency] (iv) Do not know (v) No answer
Inflation	Suppose that the interest rate on your savings account was 4% per year and inflation was 5% per year. Again disregarding any bank fees – after 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account? (i) More (ii) Exactly the same (iii) Less* (iv) Do not know (v) No answer
Risk diversification	When an investor spreads his money among different assets, does the risk of losing money (i) Increase (ii) Decrease* (iii) Stay the same (iv) Do not know (v) No answer

Source: OeNB Euro Survey.

Note: Correct answers are marked with an asterisk.

As Lusardi and Mitchell (2014) point out, any given set of financial literacy measures can “only proxy for what individuals need to know to optimize their behavior in intertemporal models of financial decision making.”

Indeed, for the specific sample of countries we cover, the concept of risk diversification is probably less important than in the U.S.A. and other high-income countries where these questions were initially developed and implemented. For example, stock market capitalization to GDP is 152% in the U.S.A., compared to 32% in Croatia (the Euro Survey country with the highest percentage). Further indicators, such as life insurance premiums to GDP, pension fund assets to GDP and mutual fund assets to GDP provide a similar picture.¹¹ It is, therefore, not surprising that saving instruments such as life insurance, pension funds, bonds, stocks and mutual funds are not widespread in the countries we analyze. Instead, for the countries covered by the OeNB Euro Survey, for example, understanding of exchange rate risk may be much more relevant in terms of optimizing household financial decisions (Beckmann and Stix, 2015). Nevertheless, we will stick to the “big three” and follow the concept of the FLat World project as this is the only way to allow comparison with results from countries not covered by the OeNB Euro Survey.

¹¹ Of course, comparing CESEE-10 with countries that have similar GDP per capita shows that CESEE-10 capital market development is on a similar level or higher. For example, Turkey, whose GDP per capita is similar to Croatia's, has a lower stock market capitalization at 22%. Similarly, Poland has a similar level of GDP per capita to Oman, and stock market capitalization is also very similar at 33% and 32%, respectively. See the Global Financial Development database for details: www.worldbank.org/en/publication/gfdr/data/global-financial-development-database.

Compared to the *OECD Toolkit for Measuring Financial Literacy* (OECD, 2018), the “big three” questions have the advantage that they can be integrated into existing surveys at low cost. At the same time, this limits the measure to three concepts and gives rise to two general concerns that may be particularly relevant for this limited number of questions: (1) Are responses to the questions affected by measurement error? (2) Do the questions provide a comprehensive measure of financial knowledge?

With regard to the first concern, Crossley et al. (2017) provide an in-depth discussion of measurement error related to financial literacy. They point out that, in contrast to many other survey questions, financial literacy questions test respondents’ knowledge (instead of, say, their opinion), and so the interviewers, who presumably know the correct answers, would be able to help respondents. Crossley et al. (2017) indeed find that interviewer effects are larger for financial literacy questions than for other survey questions. Interviewer variation does not seem to drive the “do not know” responses but is more complex. Guessing the correct answer when being asked a financial knowledge question might also lead to measurement error. Analyzing the framing of financial knowledge questions, van Rooij et al. (2011) find that correctly guessed answers might be mistaken for true financial knowledge.

With regard to the second concern, it has been argued that although the “big three” provide a narrow measure of financial literacy, the three concepts covered by the questions are most relevant to saving and investment decisions (Bucher-Koenen et al., 2017). Furthermore, compared to research using more complex measures of financial literacy, research based on the “big three” finds similar socio-demographic patterns with regard to lack of financial literacy. For example, a growing body of research on gender and financial literacy documents a gender gap irrespective of the survey measure of financial literacy: Cupák et al. (2018) use the OECD surveys; Driva et al. (2016) use the “big three” plus additional questions on financial literacy; Bucher-Koenen et al. (2017) use the “big three”; and Klapper and Lusardi (2019) use the S&P Global Finlit Survey. Irrespective of the financial literacy measure used, robust patterns have been identified also with respect to other sociodemographic characteristics such as age, employment status and education.

In this paper, we address the above-mentioned concerns in the following way: We compare our results to evidence from other surveys conducted in the ten CESEE countries covered by the OeNB Euro Survey.¹² As can be seen in the next section, the relative levels in financial knowledge among countries remain more or less the same no matter what measure of financial knowledge is used.

¹² Annex A2 provides a list of these surveys.

4 Financial literacy: variation across countries

Table 2 shows the answers to the three financial literacy questions for the full sample, and separately for the six EU Member States and the four EU candidates and potential candidates. It shows that financial literacy is highest when it comes to interest rates, followed by inflation. Financial literacy is lowest with regard to risk diversification, where also the share of “do not know” responses is the highest. These results are in line with the growing number of studies collected under the FLat World project (Agnew et al., 2013; Alessie et al., 2011; Almenberg and Säve-Söderbergh, 2011; Arrondel et al., 2013; Beckmann, 2013; Boisclair et al. 2017; Brown and Graf, 2013; Bucher-Koenen and Lusardi, 2011; Crossan et al., 2011; Fornero and Monticone, 2011; Kalmi and Ruuskanen, 2018; Klapper and Lusardi, 2019; Klapper and Panos, 2011; Lusardi and Mitchell, 2011b; Sekita, 2011).¹³

In line with the common approach in the above-mentioned studies, we compute indicators of cross-question consistency. On average, across all countries, 19% of respondents answer all three questions correctly whereas 22% fail to answer any of the three questions correctly. The percentage of respondents who answer both the inflation and interest rate questions correctly is significantly higher at 33%. Overall, the six CESEE EU countries perform better than the four CESEE non-EU countries. In the online annex, we also provide a detailed overview of how financial literacy evolved over time between 2012 and 2018.

In table 3, we compare the financial literacy results for the CESEE-10 countries with those of other countries participating in the FLat World project.¹⁴

With a share of 38.6% of respondents correctly answering all three financial literacy questions, Czechia ranks among the best-performing countries. However, most of the other CESEE countries under study are at the lower end of the ranking. The countries differ considerably in terms of economic and financial development. Hence, cross-country comparisons between the CESEE-10 countries and the other FLat World countries should be taken with caution. GDP per capita is in general low in the CESEE-10 countries when compared to the other FLat World countries. The only FLat World country with GDP per capita figures in the range of most CESEE-10 countries is Chile, which also exhibits low financial literacy rates. Italy and Czechia are comparable in terms of GDP per capita, but less so in terms of overall financial literacy. In general, table 3 also shows that literacy does not steadily increase with GDP per capita.

Table 3 also suggests that the gender gap in financial literacy increases with overall financial literacy. See section 6 for a discussion of this aspect.

¹³ For an overview of the studies of the FLat World project, see Lusardi and Mitchell (2014).

¹⁴ Note that the comparison is purely descriptive; ideally, a cross-country analysis would aggregate data to the country-time level and conduct panel analyses. However, given the still relatively limited cross-sectional and time dimension available to us we do not currently pursue this approach.

Table 2

Summary statistics on the big three financial literacy questions

	Full sample	CESEE EU	CESEE non-EU
	%		
Interest rate			
More than 102*	51.7	51.5	52.7
Exactly 102	16.3	16.0	18.2
Less than 102	11.7	12.3	8.1
Do not know	18.1	18.3	16.8
No answer	2.3	1.9	4.2
N	61,564	36,777	24,787
Inflation			
More	11.3	10.9	13.2
Exactly the same	17.8	17.2	21.3
Less*	48.5	49.6	42.4
Do not know	19.9	20.2	18.1
No answer	2.5	2.0	5.1
N	61,564	36,777	24,787
Risk diversification			
Increase	19.7	18.3	27.5
Decrease*	39.8	41.4	30.6
Stay the same	16.3	16.4	16.2
Do not know	21.7	21.8	20.9
No answer	2.6	2.2	4.8
N	61,564	36,777	24,787
Cross-question consistency			
Correct answers for interest rate and inflation	32.6	32.9	31.0
All answers correct	18.6	19.7	12.1
None of the answers correct	21.7	21.6	22.5
"Do not know" selected at least once	33.2	33.6	30.6
"Do not know" selected for all answers	9.5	9.5	9.6
N	58,732	35,573	23,159

Source: OeNB Euro Survey, 2012–2016 and 2018.

Note: The statistics are based on weighted data. Correct answers are marked with an asterisk. N = number of observations. The "cross-question consistency" panel covers only those respondents who gave an answer to all three questions.

To test the robustness of our financial literacy measure, we provide an overview in table 4 comparing our results with those from other studies on financial literacy conducted in the CESEE-10: Klapper et al. (2015) analyze people's financial knowledge in more than 140 economies including all CESEE-10. With its International Network on Financial Education, the OECD analyzes financial knowledge, financial behavior and financial attitudes in various countries, including four of the ten CESEE countries in their first study (Atkinson and Messy, 2012) and five of them in their second study (OECD, 2016).¹⁵ Subject to the constraint that the studies differ in their definition of financial literacy and that the financial literacy measures are based on a different range of questions (ranging from three to eight), we find that the relative position of the ten CESEE countries with respect to financial knowledge is robust across the different surveys. Across all surveys, Czechia and Hungary consistently show the highest levels of financial knowledge within the

¹⁵ For a comprehensive list of all the financial literacy studies conducted in the CESEE-10, see annex A2.

Table 3

Financial literacy in the FLat World and OeNB Euro Survey countries

Country	All correct		Gender					Source					GDP per capita
	Rank	Result	Male	Female	Difference	Rank	N	Data collection					
	%	%	pp.										
Germany	1	53.2	59.6	47.5	12.1	11	1,059	2009	Bucher-Koenen and Lusardi (2011)			46,988	
Switzerland	2	50.1	62.0	39.3	22.7	1	1,500	2011	Brown and Graf (2013)			77,452	
Austria	3	48.8	55.0	43.0	12.0	12	1,342	2019	Fessler et al. (2020)			49,190	
Netherlands	4	44.8	55.1	35.0	20.1	2	1,665	2010	Alessie et al. (2011)			53,920	
Australia	5	42.7	52.0	34.0	18.0	4	1,024	2012	Agnew et al. (2013)			56,229	
Canada	6	42.5	51.4	32.9	18.5	3	6,805	2012	Boisclair et al. (2017)			51,126	
Czechia	7	38.6	41.2	36.2	5.0	15	6,109	x	Own analysis			22,755	
Finland	8	35.6	44.0	27.1	16.9	5	1,477	2014	Kalmi and Ruuskanen (2018)			47,559	
France	9	30.9	36.3	26.0	10.3	13	3,616	2011	Arrondel et al. (2013)			43,002	
U.S.A.	10	30.2	38.3	22.5	15.8	7	1,488	2009	Lusardi and Mitchell (2011b)			53,356	
Japan	11	27.0	34.3	20.6	13.7	9	5,268	2010	Sekita (2011)			48,439	
Hungary	12	25.1	25.7	24.6	1.1	24	5,912	x	Own analysis			15,696	
Italy	13	24.9	29.5	17.0	12.5	10	3,992	2007	Fornero and Monticone (2011)			35,029	
New Zealand	14	24.0	32.0	16.0	16.0	6	850	2009	Crossan et al. (2011)			37,678	
Bulgaria	15	22.8	24.5	21.2	3.3	16	5,850	x	Own analysis			8,331	
Sweden	16	21.4	29.3	13.6	15.7	8	1,302	2010	Almenberg, Säve-Söderbergh (2011)			56,611	
Poland	17	19.6	20.5	18.8	1.7	22	5,800	x	Own analysis			15,826	
Croatia	18	19.1	22.0	16.6	5.4	14	5,885	x	Own analysis			15,332	
Serbia	19	14.7	16.2	13.2	3.0	17	5,597	x	Own analysis			6,560	
North Macedonia	20	10.9	12.0	9.9	2.1	20	5,835	x	Own analysis			5,257	
Bosnia and Herzegovina	21	10.2	11.6	8.9	2.7	18	5,706	x	Own analysis			5,828	
Albania	22	9.5	10.8	8.2	2.6	19	6,021	x	Own analysis			4,868	
Romania	23	7.5	8.6	6.5	2.1	21	6,017	x	Own analysis			11,017	
Chile	24	7.7	n.a.	n.a.	n.a.	n.a.	14,463	2009	Garabato Moure (2016)			14,749	
Russia	25	3.1	3.8	2.5	1.3	23	1,366	2009	Klapper and Panos (2011)			11,470	

Source: FLat World project and OeNB Euro Survey; World Bank (Global Financial Development).

Note: For the ten OeNB Euro Survey countries ("own analysis"), the statistics are based on weighted data; x indicates waves from 2012–2016 and 2018. For Romania, also see Beckmann (2013). For Austria, the statistics are not based on the big three questions, but on a survey that uses the OECD toolkit for measuring financial literacy. n.a. stands for "not available" and N refers to the number of observations. GDP per capita refers to 2017 and is expressed in constant 2005 USD.

Table 4

Financial knowledge in the CESEE-10: a comparison across different studies

Country	OeNB Euro Survey				Klapper et al. (2015)				Atkinson and Messy (2012)				OECD/INFE (2016)			
	3 out of 3	Rank	N	Year	3 out of 4	Rank	N	Year	6 out of 8	Rank	N	Year	5 out of 7	Rank	N	Year
	%				%				%				%			
Bulgaria	22.8	3	5,850	x	35	6	n.a.	2014	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Croatia	19.1	5	5,885	x	44	3	n.a.	2014	n.a.	n.a.	n.a.	n.a.	46	4	1,049	2015
Czechia	38.6	1	6,109	x	58	1	n.a.	2014	57	2	1,005	2010	52	3	1,000	2015
Hungary	25.1	2	5,912	x	54	2	n.a.	2014	69	1	998	2010	60	1	1,000	2015
Poland	19.6	4	5,800	x	42	4	n.a.	2014	49	3	1,008	2010	55	2	1,000	2015
Romania	7.5	10	6,017	x	22	8	n.a.	2014	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Albania	9.5	9	6,021	x	14	10	n.a.	2014	45	4	1,000	2011	43	5	1,000	2015
Bosnia and Herzegovina	10.2	8	5,706	x	27	7	n.a.	2014	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
North Macedonia	10.9	7	5,835	x	21	9	n.a.	2014	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Serbia	14.7	6	5,597	x	38	5	n.a.	2014	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: OeNB Euro Survey (2012–2016; 2018); Klapper et al. (2015); Atkinson and Messy (2012) and OECD/INFE (2016).

Note: The definition of "being financially knowledgeable" varies across studies: to qualify as financially knowledgeable, respondents must answer 3 out of 3 questions correctly (OeNB Euro Survey); 3 out of 4 questions (Klapper et al., 2015); 6 out of 8 questions (Atkinson and Messy, 2012); or 5 out of 7 questions OECD/INFE, 2016). x indicates the survey waves from 2012–2016 and 2018; n.a. stands for "not available"; and N refers to the number of observations.

CESEE-10. In contrast, the four CESEE non-EU countries generally show low levels of financial knowledge when compared to the other six CESEE EU countries.

5 Financial literacy: regional variation

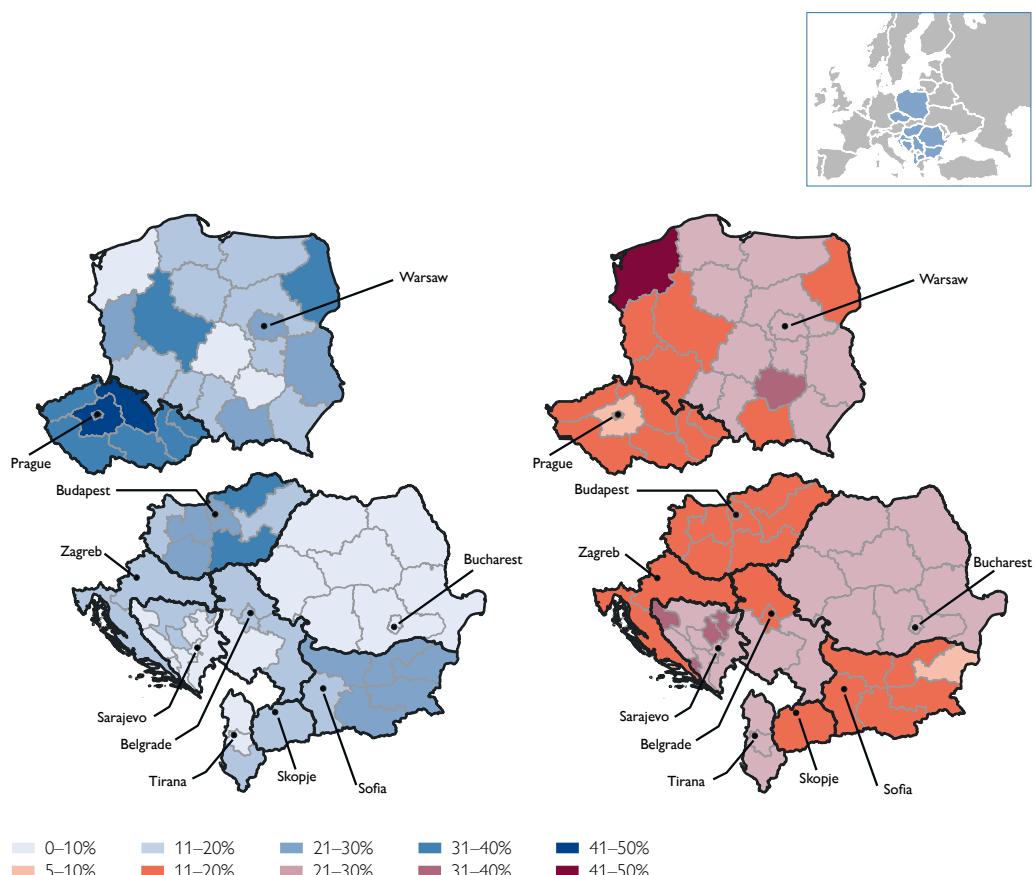
An asset of our dataset is the large number of observations that allows analyzing financial literacy scores at a disaggregate level. Chart 1 illustrates intracountry variation in financial literacy and illiteracy. The maps show that for some countries (e.g. Poland) intracountry variation in literacy is as large as variation across countries. In other countries (e.g. Romania and Croatia), financial literacy levels are homogeneous. When comparing panel (a) and panel (b) of chart 1, we see that the level of financial *illiteracy* (i.e. the share of respondents who answer none of the three questions correctly) varies less across regions than the level of financial *literacy* (i.e. the share of respondents who answer all three questions correctly).

Chart 1

Intracountry variation in financial literacy in the CESEE-10

(a) All questions correct

(b) None correct



Source: OeNB Euro Survey, 2012–2016 and 2018.

Note: This chart compares the percentage of respondents with correct answers to all three financial literacy questions (map on the left) with the percentage of respondents who answered none of the three questions correctly (map on the right). The financial literacy results are shown at the NUTS-2 level except for Bosnia and Herzegovina, for which the data are based on the OeNB's regional classification scheme. The sample consists of respondents who provided answers to all three financial literacy questions. The statistics are based on weighted data. For underlying values, see the online annex.

Klapper and Lusardi (2019) analyze economic and financial factors that drive variation in financial literacy across countries. They find a significant positive correlation between literacy and GDP per capita as well as between literacy and consumer protection laws. Indicators of financial development and financial stability are significantly correlated with literacy levels in developed countries only. As our sample covers only ten countries, we do not analyze what determines differences in literacy levels across these ten countries. However, we take the analysis of Klapper and Lusardi (2019) to the intracountry level, examining which factors might explain the observed regional variation in financial literacy in the CESEE-10.

Table 5 shows correlations at the PSU level between financial literacy (computed as the average literacy score ranging from 0 to 3) and various indicators of local economic and financial development.¹⁶ Following Henderson et al. (2012), we use average stable night lights as an indicator of economic development. Our results show that the positive correlation of financial literacy and economic development only holds in some countries. For others, such as Bulgaria, Hungary, Poland and North Macedonia, we find that more economically developed areas have lower levels of financial literacy. It is important to note, however, that these correlations do not control for other factors and that night light is, for example, highly correlated with indicators of urbanization (see column 2 of table 5, which shows the same negative/positive correlation pattern as column 1).

Unlike Klapper and Lusardi (2019), we find a significant correlation between financial literacy levels and indicators of financial development.¹⁷ Again, bearing in mind that these correlations do not control for other factors, our results indicate that literacy levels increase with bank proximity and density in most countries. While higher bank concentration is associated with lower literacy levels in Croatia, Hungary and Serbia, the opposite is the case in Bulgaria, Czechia, Poland and North Macedonia. To investigate whether the local banking environment is merely a proxy for the development of the local infrastructure, we also look at correlations with local road density (see the final column of table 5). The positive and significant correlation of road density and literacy for Croatia, Czechia and Serbia coincides with the positive and significant correlation of bank proximity and literacy. Taken together, these results suggest that it is worth investigating in depth the determinants of intracountry heterogeneity in financial literacy in future research. In particular, it would be informative for policymakers to investigate to what extent intracountry heterogeneities are related to heterogeneities in economic activity alone or to what extent institutions and factors that may be influenced by concrete policy measures are relevant.

¹⁶ Since we are interested in the PSU level, we restrict our measure of financial development to local banking market indicators; it is therefore less comprehensive than the one used by Klapper and Lusardi (2019).

¹⁷ See Beckmann et al. (2018) for details on how the indicators of bank proximity, density and concentration were collected and computed.

Table 5

Intracountry correlation of financial literacy and indicators of economic and financial development

	Night light	Urban fabric	km to next bank branch	Number of banks within 5 km	Bank concentration	Road density
Bulgaria	-0.0520***	-0.0582***	-0.0631***	0.0402***	0.0359***	0.005
Croatia	0.0703***	0.0786***	-0.0610***	0.0808***	-0.0772***	0.0717***
Czechia	0.2017***	0.1905***	-0.3132***	0.2049***	0.1052***	0.1545***
Hungary	-0.0372***	-0.0371***	-0.025	0.0626***	-0.0708***	-0.012
Poland	-0.0344***	-0.0619***	0.008	-0.0508***	0.0621***	-0.0596***
Romania	0.0407***	0.0783***	-0.0801***	0.0452***	0.002	0.030
Albania	0.023	0.031	-0.0358***	0.0396***	-0.001	-0.016
Bosnia and Herzegovina	0.02	0.010	-0.029	0.026	0.029	0.0376***
North Macedonia	-0.0663***	-0.1133***	-0.1296***	0.0877***	0.0372***	-0.017
Serbia	0.1153***	0.1249***	-0.0995***	0.1345***	-0.0852***	0.1411***

Source: OeNB Euro Survey, 2012–2016 and 2018.

Note: The table shows the "Pearson product-moment correlation coefficient" between average financial literacy and different economic and financial development indicators measured at the level of the primary sampling unit (PSU). The OeNB Euro Survey data are combined with non-survey data by collecting the geographic coordinates of the PSUs and computing indicators of economic and financial development for different perimeters around the PSUs. *** indicates significance at the 1% level (not adjusted for sampling design). "Night light" is obtained from the National Oceanic and Atmospheric Administration (NOAA) and represents average stable night lights based on the VIIRS Nighttime light series for a radius of 20km around the PSUs. "Urban fabric" is obtained from the CORINE Land Cover database and represents the area covered by continuous and discontinuous urban fabric for a radius of 20km around the PSUs. Indicators of bank proximity (km to next bank branch from the PSUs), density (number of banks within 5km around the PSUs) and concentration (Herfindahl index of bank concentration calculated based on the number of bank branches within 5km around the PSUs) are derived by combining data from the OeNB Euro Survey with bank branch data as described in Beckmann et al. (2018). "Road density" is obtained from the Global Road Inventory Dataset Project and represents road infrastructure for a radius of 5km around the PSUs.

6 Financial literacy: variation across sociodemographic groups with a focus on gender gaps

Differences in financial literacy are not only observed at the country and regional level; a high level of heterogeneity has also been established across sociodemographic groups. The countries analyzed so far in the FLat World project show the following patterns (Lusardi and Mitchell, 2011c): (1) Regarding age, financial literacy follows an inverted U-shape, meaning that younger and older age groups perform worse than the middle age groups. (2) Men achieve better financial literacy results than women. (3) Higher educated people are more financially literate than lower educated people. (4) Working people perform better than nonworking people.

In this section, we investigate whether these patterns are also prevalent across the ten Euro Survey countries and whether differences in financial literacy among certain sociodemographic groups (e.g. between men and women) are more pronounced in some countries than in others. We do so by aggregating results for the six EU Member States and the four EU candidates and potential candidates.¹⁸ To maintain comparability with the other studies in the FFlat World project, we stick to the structure of the tables in the related publications and especially to the definitions of the sociodemographic categories.

¹⁸ For a detailed analysis of financial literacy and its variation across sociodemographic groups on the country level, see section 4 in the online annex.

We find that financial literacy is lowest among adults aged 65+ both in CESEE EU countries (see table 6) and in CESEE non-EU countries (see table 7). This is the case for all three aspects of financial literacy. This finding is in line with results from previous empirical research (e.g. Klapper and Lusardi, 2019) and with theoretical models, where financial literacy is defined as a choice in the context of life-cycle models (Lusardi et al., 2015). Learning by doing would suggest that financial literacy is also lower for the youngest (Frijns et al., 2014). In line with empirical research for developed countries, table 6 shows an inverted U-shaped relationship between literacy and age (with the exception of literacy regarding interest rates). Results in table 7, however, are more in line with empirical evidence for emerging markets (Klapper and Lusardi, 2019): While literacy levels are not highest among the youngest, they are higher than among those aged 50+.

As expected – and corroborating previous research (for example, Christelis et al., 2010) – financial literacy is strongly correlated with education. The share of “do not know” responses for financial literacy is lowest among respondents with tertiary education.

Regarding respondents’ labor market status, tables 6 and 7 show that financial literacy is higher for those who are working. In the six EU Member States, it is highest for self-employed respondents. In the CESEE non-EU countries, the literacy score for inflation and interest rates, and also the overall level of financial literacy, is highest for non-self-employed working respondents; risk literacy is highest for self-employed respondents. These results hold also when controlling for age and gender in a multivariate analysis.

Empirical evidence on financial literacy has shown large and persistent gender differences. The “gender gap” in financial literacy is also present in the CESEE-10 – with regard to all three concepts of financial literacy and overall literacy. Furthermore, we confirm a gender gap in the share of “do not know” responses. Previous research has sought to explain these differences by studying, for example, whether differences are due to life experience (Driva et al., 2016) or household decision-making (Fonseca et al., 2012), or whether they are present only for more complex questions (Bucher-Koenen et al., 2017). More recently, Cupák et al. (2018) provide a cross-country analysis of the gender gap using a measure of financial literacy that goes beyond the “big three.” They argue that while some of the gender gap can be explained by personal characteristics, the rest may be due to an individual’s economic and social environment. Their analysis shows that the gender gap in financial literacy is particularly small in Eastern European countries. They hypothesize that the “more equal financial literacy scores may be related to social and economic norms left over from times of communism.”

Table 6

Financial literacy in CESEE EU countries: differences across sociodemographic groups

Sample	Interest rate		Inflation		Risk diversification		Overall	
	Correct	Do not know	Correct	Do not know	Correct	Do not know	All correct	None correct
%								
Age								
35 and younger	32.6	56.1	16.3	49.6	18.6	43.5	19.5	19.7
36–50	25.9	54.8	14.3	52.8	16.7	45.6	18.2	21.2
51–65	24.2	52.8	17.2	53.9	19.2	42.8	21.8	20.5
Older than 65	17.4	43.9	29.6	45.7	30.7	36.8	32.2	16.1
N	35,573							30.9
Gender								
Male	47.9	54.7	16.1	53.0	18.2	44.7	19.1	20.9
Female	52.1	51.2	20.3	48.8	22.4	40.8	24.6	23.5
N	35,573							
Education								
Low	16.3	43.7	31.5	38.3	33.0	35.3	33.4	13.1
Medium	65.9	53.4	16.8	52.3	18.7	43.3	20.7	20.0
High	17.7	59.5	11.7	56.9	14.9	47.6	15.9	24.8
N	35,488							15.1
Employment								
Retired	25.5	45.2	27.3	47.2	28.3	35.7	30.4	15.1
Student	6.4	56.1	18.2	49.5	20.9	43.4	21.2	19.1
Unemployed/other	10.1	49.4	23.7	45.3	24.9	34.0	26.7	14.0
Working	50.9	55.9	13.6	53.2	16.2	46.7	17.4	22.0
Self-employed	7.2	61.1	11.7	57.0	13.6	52.6	15.8	28.6
N	35,276							14.6

Source: OeNB Euro Survey, 2012–2016 and 2018.

Note: The table shows descriptive statistics of the “big three” financial literacy questions for different sociodemographic groups in six CESEE EU Member States. The statistics are based on weighted data. N indicates the number of observations. The sample consists of those respondents who provide answers to all three financial literacy questions and for whom information on sociodemographic characteristics is available.

Chart 2 provides a striking confirmation of this finding, bringing together descriptive results from all FLat World studies.¹⁹ The chart illustrates that the gender gap in financial literacy is comparatively lower in transition economies. However, it is important to bear in mind that the overall level of literacy is lower in most of these countries as well, as illustrated in chart 3. The gender gap in financial literacy can be expressed in absolute terms (the share of men with correct answers to all three questions minus the share of women with correct answers to all three questions) or in relative terms (absolute gender gap as a percentage of the overall literacy level). Both measures are of interest: The absolute gender gap illustrates how much “catching up” is necessary so that women’s financial literacy becomes equal to that of men within one country. The relative gender gap lends itself to cross-country comparisons. Such a comparison shows, for example, that Russia is on a similar level with the Netherlands in terms of relative gender differences in literacy.

¹⁹ For an overview of the studies of the FFlat World project, see Lusardi and Mitchell (2014). A similar cross-country comparison of gender gaps – focusing on interest rate knowledge – is provided by Hung et al. (2012), who take into account countries that participated in the FFlat World project or in the OECD/INFE Pilot Study.

Table 7

Financial literacy in CESEE non-EU countries: differences across sociodemographic groups

Sample	Interest rate		Inflation		Risk diversification		Overall	
	Correct	Do not know	Correct	Do not know	Correct	Do not know	All correct	None correct
%								
Age								
35 and younger	35.6	57.9	14.5	44.6	16.7	35.1	18.0	12.7
36–50	26.8	58.4	12.5	47.8	14.0	34.6	16.0	13.8
51–65	26.0	52.3	19.5	44.2	20.4	30.3	24.9	11.3
Older than 65	11.6	46.7	28.5	39.4	30.7	25.2	34.1	8.1
N	23,159							32.8
Gender								
Male	48.6	58.1	13.8	46.9	15.8	34.7	17.8	13.5
Female	51.4	52.6	19.8	42.7	21.2	30.5	24.3	10.8
N	23,159							24.8
Education								
Low	27.5	46.3	27.3	37.3	28.5	28.0	31.6	8.5
Medium	57.0	57.7	14.0	46.9	15.8	33.3	18.3	12.7
High	15.5	62.4	8.9	50.1	11.1	38.2	13.0	16.3
N	23,151							15.9
Employment								
Retired	19.9	48.1	24.7	41.3	26.2	25.9	31.9	8.7
Student	9.8	58.8	16.1	44.4	17.9	36.3	20.4	14.8
Unemployed/other	27.1	50.7	20.8	42.1	21.9	30.9	22.8	10.0
Working	36.8	61.5	10.7	49.4	12.7	35.3	15.0	14.8
Self-employed	6.4	56.2	11.6	43.5	13.2	39.4	15.3	12.7
N	22,839							19.1

Source: OeNB Euro Survey, 2012–2016 and 2018.

Note: The table shows descriptive statistics of the “big three” financial literacy questions for different sociodemographic groups in four CESEE EU candidates or potential candidates. The statistics are based on weighted data. N indicates the number of observations. The sample consists of those respondents who provide answers to all three financial literacy questions and for whom information on sociodemographic characteristics is available.

However, these countries are not comparable in terms of GDP per capita, and their overall levels of literacy differ substantially. A comparison of Czechia and Italy, which have similar levels of GDP per capita, shows that the overall level of literacy is higher in Czechia and that the gender gap is larger in Italy, both in absolute and relative terms.

Hungary, Poland and Chile have roughly similar GDP per capita levels. Unfortunately, the FLat World study for Chile does not contain information on the percentage of men and women that answered *all* questions correctly (Garabato Moure, 2016). However, the data allow us to compute a gender gap for the individual financial literacy questions and to compare the results with Hungary and Poland (see tables 8 and 9 in the online annex).

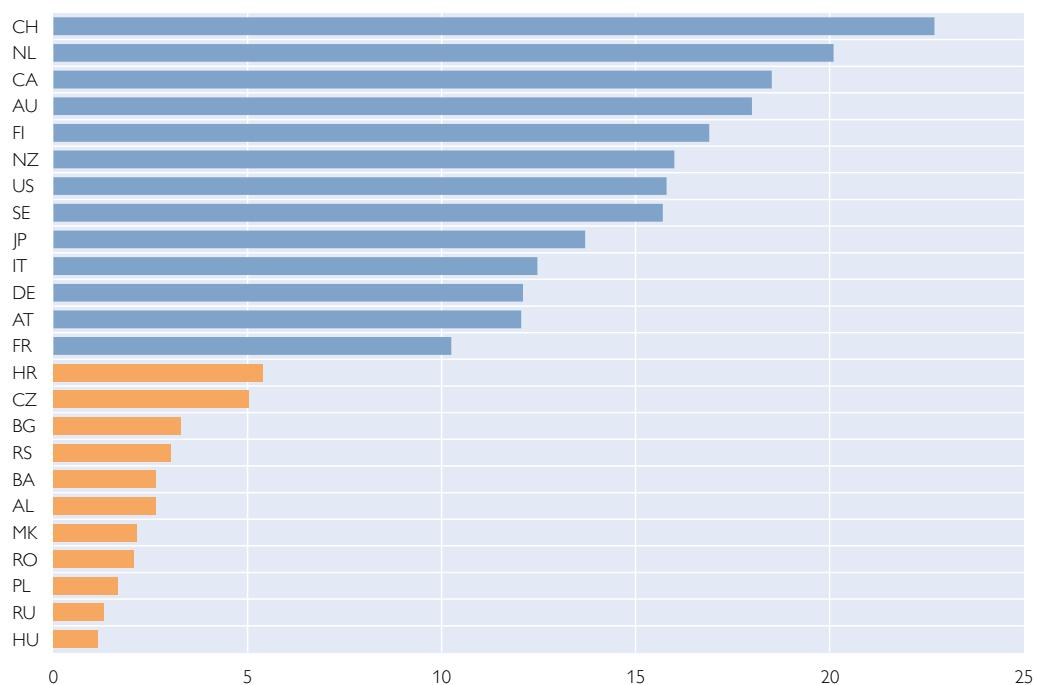
This comparison yields the following results: For the interest rate question, a gender gap of 7.8 percentage points for Chile, of 0.8 percentage points for Hungary, and of 3.2 percentage points for Poland. For the inflation question, a gender gap of 4.1 percentage points for Chile, of 2.8 percentage points for Hungary, and of 4.2 percentage points for Poland. For the risk diversification question, a gender gap of 5.4 percentage points for Chile, of 2.7 percentage points for Hungary, and of 4.3

percentage points for Poland. Thus, with the exception of inflation literacy, the gender gap is generally lower in the two countries with a communist legacy than in the country without such a legacy. Providing an in-depth analysis of the low gender gap in Eastern Europe, Beckmann and Reiter (mimeo) argue that the experience of communism alone does not suffice to explain the lower gender gap. The gender gap has decreased even further among cohorts born shortly before or after 1989.

Chart 2

A cross-country comparison of the gender gap in financial literacy

Absolute gender gap (percentage points)



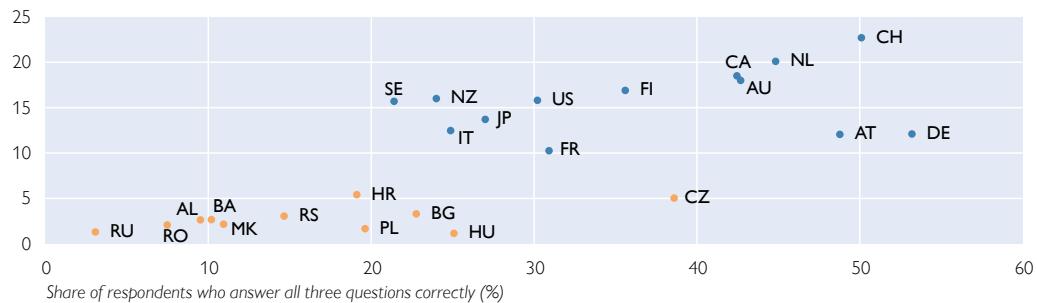
Source: OeNB Euro Survey, 2012-2016 and 2018; FLat World project.

Note: The chart shows the share of men with correct answers to all three financial literacy questions minus the share of women with correct answers to all three questions. Orange bars indicate countries with a communist legacy. For the underlying data, see table 3.

Chart 3

Relationship between gender gap and overall financial literacy

Absolute gender gap (percentage points)



Source: OeNB Euro Survey, 2012-2016 and 2018; FLat World project.

Note: The chart shows the relationship between the gender gap (vertical axis) and overall financial literacy (horizontal axis). The orange dots indicate countries with a communist legacy. For the underlying data, see table 3.

7 Financial literacy and the experience of economic turbulence during transition

During transition from planned to market economies, the CESEE-10 countries experienced hyperinflation and banking crises. Malmendier and Nagel (2011) find that households are less risk-tolerant when they experienced macroeconomic downturns and argue that this implies a willingness to learn from life-time experience. Beckmann and Stix (2015) illustrate that individuals who remember periods of high inflation are more literate regarding exchange rate risk. Beckmann (2013) shows that in Romania interest and inflation literacy is higher among those who remember previous economic crises.

By 2012, the first year of our analysis, at least a decade (and mostly a decade and a half or more) had passed since inflation had been in the 20% range or beyond in any of the CESEE-10 countries (see table 8). We could have combined the information on the final high-inflation year with the information on respondents' age in order to analyze whether older respondents are more literate with regard to inflation than younger respondents. However, the OeNB Euro Survey contains a question whether respondents "remember periods of high inflation during which the value of the local currency dropped sharply," which provides a more specific measure of personal experience. When comparing the financial literacy measures of those who have memories of high inflation with the literacy of those who do not, we find that the percentage of inflation-literate individuals is higher among those who remember high inflation than among those who do not. For interest and risk diversification literacy, there is no such clear pattern. In fact, the percentage of risk diversification-literate individuals is on average higher among those who do not remember previous economic crises.

Table 8

Transition experience and financial literacy

Year	Last period of annual average inflation of 20% or higher	Interest rate		Inflation		Risk diversification	
		Correct	%	Correct	%	Correct	%
Memory of high inflation*		yes	no	yes	no	yes	no
Bulgaria	1998	51	50	75	69	46	42
Croatia	1994	66	66	64	62	37	39
Czechia	1993	67	65	70	67	61	61
Hungary	1996	59	50	64	54	52	50
Poland	1995	56	55	49	40	50	48
Romania	2002	41	42	52	44	27	29
Albania	1998	41	36	33	28	45	46
Bosnia and Herzegovina	1995	47	46	42	41	34	34
North Macedonia	1994	60	64	46	40	30	35
Serbia	2002	63	65	57	54	27	37

Source: OeNB Euro Survey and wiwiw database.

Note: * Memory of high inflation is derived from the survey question "Please tell me on a scale from 1 to 6 whether you agree or disagree with the following statement: "I remember periods of high inflation during which the value of the [LOCAL CURRENCY] dropped sharply." Answers from 1 to 3 are coded as "yes" while answers from 4 to 6 are coded as "no."

8 Conclusion

This paper presents financial literacy insights for ten Central, Eastern and South-eastern European countries (CESEE-10). It uses unique evidence from the OeNB Euro Survey covering six years up to 2018 and a total of 60,000 observations on people's grasp of interest rates, inflation and risk diversification – the concepts measured by the so-called "big three" financial literacy questions.

At least one of the "big three" questions is answered correctly by 80% of adults in CESEE-10, but correct answers to all three questions are provided by barely one in five adults, and the share of correct answers is generally lowest for risk diversification. These figures vary substantially across and within countries. Our results show that financial literacy varies within countries across sociodemographic groups: In line with previous research, financial literacy is highest among well-educated and employed individuals, and it is lowest among older and female individuals. Those who experienced economic turbulence during transition from planned to market economies have a higher level of inflation literacy, but overall literacy does not differ.

While previous research has found that higher GDP levels are correlated with higher financial literacy, we show that – within countries – lower economic development is not necessarily associated with lower financial literacy levels. We also find that the development of local financial markets is associated with higher financial literacy levels.

Our findings are relevant both for policymakers and for future research. In this context, it is important to note that explicit mandates to conduct financial education policies are lacking in many countries; and if a mandate has been established, different institutions are in charge in different countries. Therefore, this article does not in any way aim to assess the success of various policy measures that have been carried out in different countries to address – and perhaps already successfully narrow – the financial literacy gaps we describe. Furthermore, we cannot contribute to the discussion to what extent any gaps in financial literacy could perhaps be addressed by financial education efforts in the private sector. Nevertheless, the OECD has shown that in order for financial education to be effective it should target specific segments of the population (OECD, 2019b). Our paper provides some evidence to identify the segments of the population that would benefit most from financial education programs; or put differently, that currently have lower levels of financial literacy. We show that such segments can be identified both in sociodemographic terms and regionally.

The OECD argues that financial literacy can be enhanced by financial education, and that financial education and literacy make a difference with regard to financial and economic inclusion (OECD, 2013). With both financial literacy and financial development being low in some regions, our results imply a possible potential for financial education programs to enhance not only literacy but financial inclusion as well. However, more research is needed to investigate these indicative results in more depth.

Thus, our paper points out several lines for future research that are relevant for policymakers: Some of the countries we investigate still have a significant share of individuals who do not have a bank account. *Do these arguably financially excluded individuals benefit from a developed financial market in terms of improved literacy? Are financially literate individuals more likely to be financially included?* More generally,

how does financial literacy affect economic outcomes? Finally, there are potential research questions that are particularly relevant for the countries covered by the OeNB Euro Survey, which includes a number of countries that will adopt the euro at some point in the future. *How does financial literacy affect expectations regarding the development of inflation and the exchange rate? How does financial literacy affect expectations regarding adoption of the euro as legal tender?* While some of these questions can only be analyzed based on microdata, for other questions our detailed online annex of descriptive statistics for individual countries will provide a useful reference.

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Annex

A1 Definitions of financial literacy

Huston (2010), who analyzed more than seventy studies, concluded that the existing definitions of financial literacy can be categorized roughly into four categories:

1. Definitions that focus on knowledge;
2. Definitions that focus on ability;
3. Definitions that focus both on knowledge and ability, and
4. Definitions that focus both on knowledge and ability and, in addition, specify an outcome to which financial literacy should finally lead.

With new and even more comprehensive definitions of financial literacy having come up more recently, we add an additional category:

5. Definitions that cover additional dimensions, including people's actual financial behavior.

Based on these five categories, table A1 provides a list of different definitions of financial literacy.²⁰

²⁰ Table A1 also stresses that researchers have a different understanding of the terms financial knowledge, financial literacy and financial capability. While in many studies, the terms financial knowledge and financial literacy are used synonymously (see, for instance, Zottel et al., 2013; World Bank, 2014), others make a clear distinction, claiming that financial literacy goes beyond financial knowledge (see, for instance, Atkinson and Messy, 2012).

Table A1

Definitions of financial literacy

	Source
Focus on knowledge	
1 "Financial literacy is a basic knowledge that people need in order to survive in a modern society."	Kim (2001) (as cited in Huston, 2010: p. 311)
Focus on ability	
2 "Financial literacy is the ability to make informed judgements and to take effective decisions regarding the use and management of money."	Noctor et al. (1992) (as cited in Huston, 2010: p. 311) Mandell (2008): pp. 163f
3 Financial literacy is the "ability to evaluate the new and complex financial instruments and make informed judgements in both choice of instruments and extent of use that would be in their own best long-run interests."	Vitt et al. (2000): p. 2
4 "Personal financial literacy is the ability to read, analyze, manage and communicate about the personal financial conditions that affect material well-being. It includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future and respond competently to life events that affect everyday financial decisions, including events in the general economy."	
Focus on knowledge and ability to apply knowledge	
5 "Financial literacy could be defined as measuring how well an individual can understand and use personal finance-related information."	Huston (2010): p. 144
6 "Financial literacy refers to a person's ability to understand and make use of financial concepts."	Servon and Kaestner (2008): p. 273
7 "Individuals are considered financially literate if they are competent and can demonstrate they have used knowledge they have learned. Financial literacy cannot be measured directly so proxies must be used. Literacy is obtained through practical experience and active integration of knowledge."	Moore (2003): p. 29
Focus on knowledge, ability to apply knowledge, and outcome	
8 "Financial literacy is the ability to use knowledge and skills to manage one's financial resources effectively for a lifetime of financial security."	Jump\$tart Coalition for Personal Financial Literacy (2015): p. 1 Hung et al. (2009)
9 Financial literacy is the "knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being."	World Bank (2014): p. 1
10 "Financial literacy represents the level of aptitude in understanding personal finance. It often refers to awareness and knowledge of key financial concepts required for managing personal finances and is generally used as a narrower term than financial capability."	
Definitions that cover additional dimensions, including people's actual financial behavior	
11 Financial literacy is "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing."	Atkinson and Messy (2012): p. 3
12 "Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life"	OECD (2013): p. 144

Source: Authors' compilation.

Note: The table should not be seen as an exhaustive list of all the existing financial literacy definitions. The definitions selected are grouped according to the findings of Huston (2010).

A2 Overview of financial literacy surveys in CESEE-10

Table A2

Overview of financial literacy surveys in CESEE-10

Country	Survey	Year
Bulgaria	Financial Literacy Suvey, prepared for the World Bank§ Standard and Poor's Global Financial Literacy Survey*	2010 2014
Croatia	Standard and Poor's Global Financial Literacy Survey* OECD/INFE Survey of Financial Literacy Competencies**	2014 2016
Czechia	OECD/INFE Pilot Study*** Standard and Poor's Global Financial Literacy Survey* OECD/INFE Survey of Financial Literacy Competencies**	2012 2014 2016
Hungary	OECD/INFE Pilot Study*** Standard and Poor's Global Financial Literacy Survey* OECD/INFE Survey of Financial Literacy Competencies**	2012 2014 2016
Poland	OECD/INFE Pilot Study*** Standard and Poor's Global Financial Literacy Survey* OECD/INFE Survey of Financial Literacy Competencies**	2012 2014 2016
Romania	OECD/INFE Survey of Financial Literacy Competencies** Financial Literacy and Financial Services Survey± Standard and Poor's Global Financial Literacy Survey*	2010 2014
Albania	OECD/INFE Pilot Study*** Standard and Poor's Global Financial Literacy Survey* OECD/INFE Survey of Financial Literacy Competencies**	2012 2014 2016
Bosnia and Herzegovina	OECD/INFE Survey of Financial Literacy Competencies** Financial Literacy Survey, prepared for World Bank~ Standard and Poor's Global Financial Literacy Survey*	2011 2014
North Macedonia	Standard and Poor's Global Financial Literacy Survey* Adult Financial Literacy Competencies in Macedonia^	2014 2018
Serbia	Standard and Poor's Global Financial Literacy Survey*	2014

Source: * https://gflec.org/wp-content/uploads/2015/11/3313-Finlit_Report_FINAL-5.11.16.pdf?x66755

** <https://www.oecd.org/finance/oecd-infe-survey-adult-financial-literacy-competencies.htm>

*** https://www.oecd-ilibrary.org/finance-and-investment/measuring-financial-literacy_5k9csf90fr4-en

§ <https://microdata.worldbank.org/index.php/catalog/1026/study-description>

± <https://datacatalog.worldbank.org/dataset/romania-financial-literacy-and-financial-services-survey-2010>

~ <http://documents.worldbank.org/curated/en/116701483501101366/Financial-literacy-in-Bosnia-and-Herzegovina>

^ https://www.efse.lu/fileadmin/user_upload/user_upload/Financial_Literacy_Report_Final.pdf