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Research Report

Financial literacy and inclusive growth in the European Union

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Financial literacy and inclusive growth in the European Union

Uuriintuya Batsaikhan and Maria Demertzis

Executive summary

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GROWING FINANCIALIZATION AND complexity demands financial literacy to be an integral part of the research agenda and policy design globally. It applies particularly to developed countries, since research findings suggest that financial literacy becomes more important with higher levels of economic development.

FINANCIAL LITERACY IS financial education, such as basic economics, statistics and numeracy skills combined with the ability to employ these skills in making financial decisions. Research has shown that as people become more financially literate, they make better saving and borrowing decisions, are more likely to plan for retirement and hold more diverse assets in their balance sheet. As more and more households are asked to make their own decisions about such issues, financial illiteracy can become a serious threat to their life-time welfare.

EUROPEAN UNION CONTAINS in itself world's best performers (Sweden, Denmark) as well as those that score below global average (Romania, Portugal) in financial literacy rankings. The findings for the EU echo those that are also applicable to other developed economies, namely that low-income individuals, women, young people and less educated people tend to consistently underperform in literacy tests.

FINANCIAL LITERACY MATTERS for the EU for three reasons: 1) in the face of rapidly ageing population, the pressure on the pension system could be mitigated through shifting towards more occupational and personal insurance systems. This shifts more and more responsibilities to the individual who can greatly enhance their decision-making with higher levels of financial literacy. 2) mortgage-debt makes up an overwhelming share of total debt of euro-area households. Understanding the implications of indebtedness and how financial literacy can help is especially important for young households, first-time homeowners and those at the lower end of the income distribution. 3) financial literacy is negatively associated with the main elements of inclusive growth in the EU, namely poverty, inequality, social exclusion and social immobility. Financial literacy can therefore help access the benefits of economic growth and contribute to the inclusive growth agenda in the EU.

IN LIGHT OF these findings, the policy recommendations entail starting financial literacy programs from the young age; promoting programs that are tailored to the specific needs of communities, especially young people, women and low-income groups; providing targeted financial education for people on the verge of major financial decisions, such as the first mortgage, student loan, retirement investment. However, at the same time it is important to resist information overload, support more research into financial literacy, especially behavioural aspects of financial decision-making and increase private sector involvement since they are at the forefront of financial education and service provision.

1 Financial literacy around the world

A sample United States survey question on financial literacy asks “Suppose you had \$100 in a savings account and the interest rate was 2 percent per year. After five years, how much do you think you would have in the account if you left the money to grow: more than \$102, exactly \$102, less than \$102?”

Seven in 10 US adults answer this correctly with large variations depending on their socio-economic backgrounds. People above the age of 50 score 5 percent higher. There are also gender disparities: 8 in 10 men answer the question correctly compared to 6 in 10 women¹. Education, although not a perfect proxy, is a good determinant of the probability of a correct response – people with college education score almost 8 points above average.

In a Standard & Poor’s global survey of financial literacy, 150,000 adults in 140 countries are asked four standard questions on compound interest (similar to the question above), inflation, risk diversification and numeracy (simple interest)². Those that answered at least three of these four questions correctly are classified as financially literate (Table 1). Globally, Standard & Poor’s has found only one in three adults to be financially literate.

The EU, US and non-EU advanced countries score on average higher than the rest of the world for financial literacy. At the same time, each region has champions and laggards. Almost every second person is financially literate in Uruguay, Botswana, Turkmenistan and Bhutan, but the financial literacy rate is below 20 percent in Haiti, Somalia, Tajikistan and Nepal.

Table 1: Financial literacy around the world

Country/region	Number of countries	Literacy Score
EU	28	50
Non-EU advanced (excl. US)	8	58
US	1	57
China	1	28
Asia (excl. China)	12	32
Africa	35	33
Commonwealth of Independent States (CIS)	12	30
Latin America & Caribbean	19	29

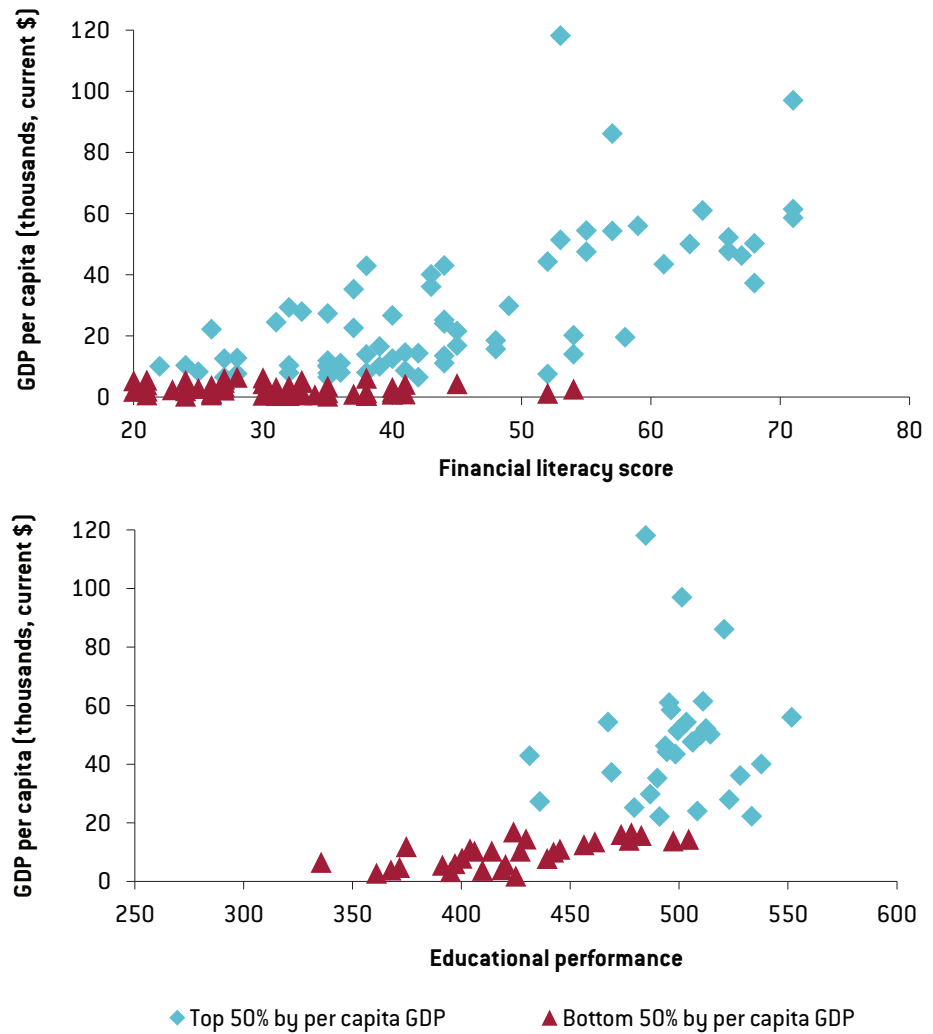
Source: Bruegel based on Standard & Poor’s Global FinLit Survey. Note: Unweighted averages are shown for country groups.

The relationship between economic development, proxied by per capita GDP, and financial literacy is stronger for developed economies than developing economies. Financial literacy, as distinct from numerical literacy is therefore, a ‘rich-country skill’. However, while there is a relatively strong association between GDP per capita and financial literacy scores in developed economies, among the bottom 50 percent of countries in the financial literacy ranking there is a less clear relationship with level of development (Figure 1, Panel A). Financial literacy becomes increasingly important at higher levels of development. This is in contrast to general education, which is relevant (ie has a positive association with GDP per capita) at all stages of economic development (Figure 1, Panel B).

1 American Life Panel nationally representative survey among US population aged 18+, survey data for 2009.

2 For exact wording of the questions, see <http://gflec.org/initiatives/sp-global-finlit-survey/>, last accessed 13 February 2018.

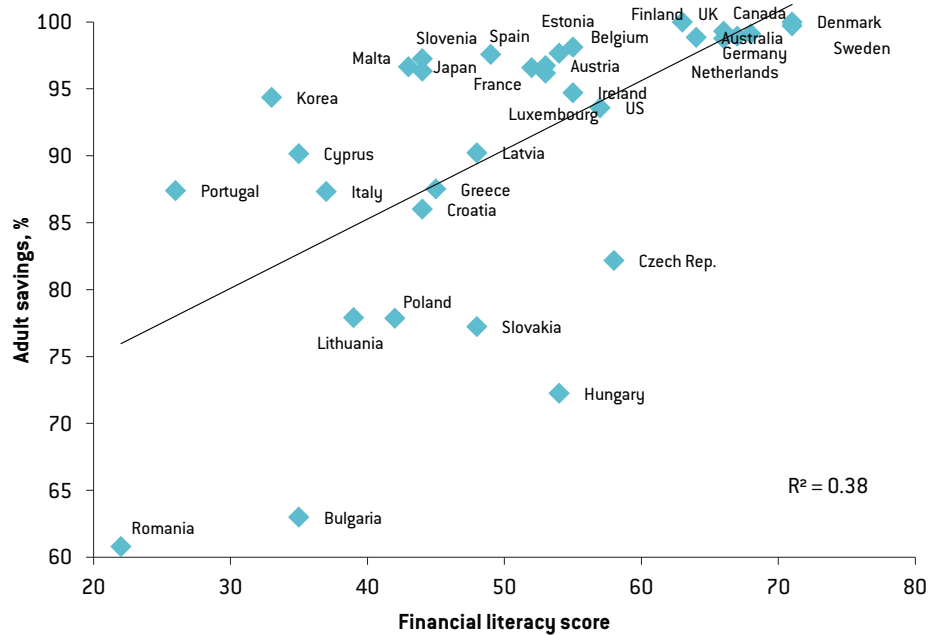
Figure 1: Financial literacy and educational performance by per capita GDP by countries



Source: Bruegel based on World Bank World Development Indicators, Standard & Poor's Global FinLit Survey and OECD PISA. Note: We take the average of PISA maths, science and reading performance scores of 15 year old students in 64 countries as a measure of the educational performance of the country. PISA educational performance is for 60 countries, while financial literacy is for 140 countries.

Furthermore, we find that within the developed economies there is a positive association between adults' saving and borrowing behaviour and the country's financial literacy score (Figure 2). In Denmark and Sweden, the countries with the highest financial literacy scores, almost all adults reported they saved at a financial institution in the past 12 months.

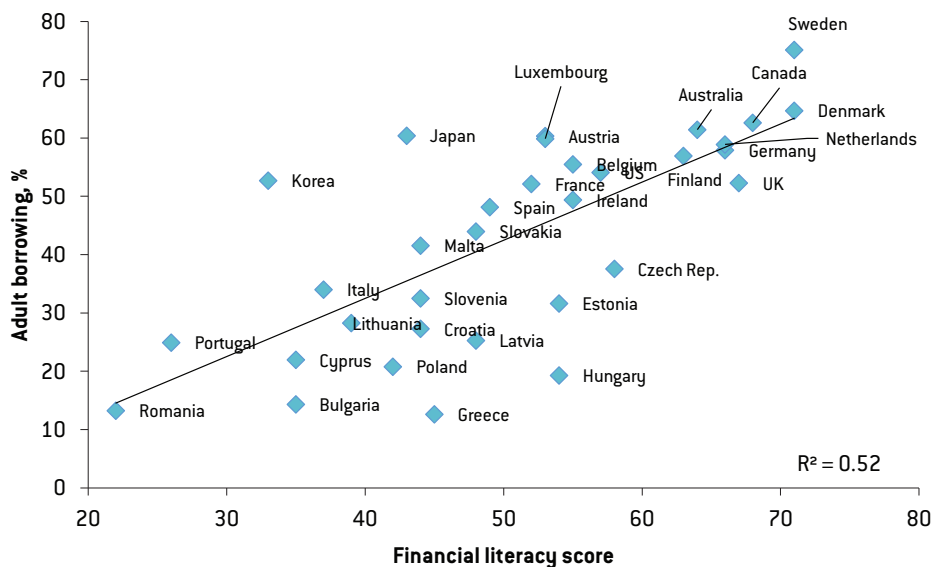
Figure 2: Share of adults saving at a financial institution in the past year (% of total adults) in 2014 and the financial literacy score



Source: Bruegel based on Global Financial Development Database and Standard & Poor's Global FinLit Survey. Note: The adult savings rate is understood as the percentage of respondents aged 15 or over who report saving or setting aside money by using an account at a formal institution such as a bank, credit union, microfinance institution or cooperative in the past 12 months. The adult borrowing rate is understood as the percentage of respondents aged 15 or over who report borrowing any money from a bank, credit union, microfinance institution or another financial institution such as a cooperative in the past 12 months. The interviews were conducted with a national representative sample of 1,000 adults per country, 15 years and older, through the World Gallup Poll survey. For more information on the methodology, see Čihák et al (2012).

It is important to note that the financial literacy score is positively associated with both saving and borrowing behaviours, indicating that in countries with higher literacy scores, adults have a more active relationship with financial institutions (Figure 3). Moreover, it appears that borrowing is more strongly associated with literacy than saving.

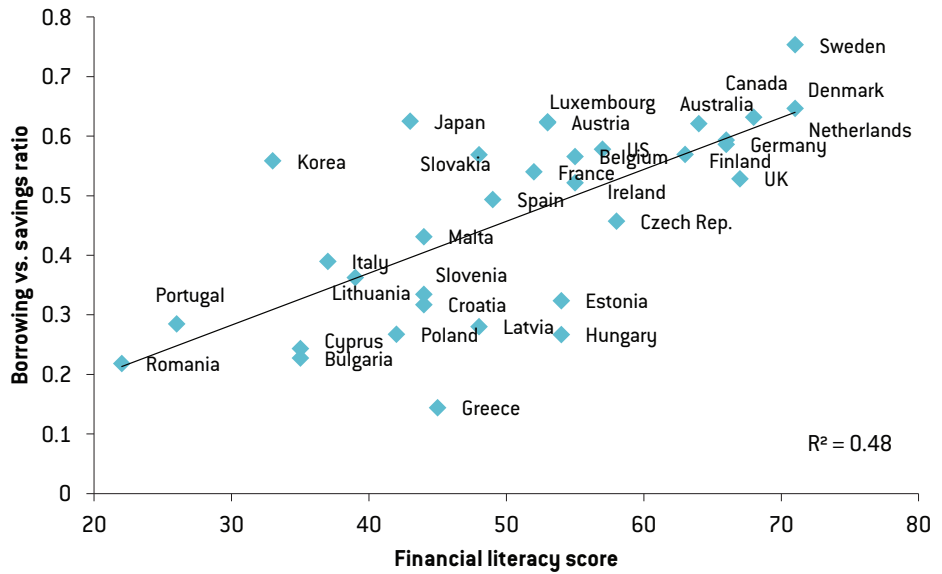
Figure 3: Share of adults borrowing from a financial institution in the past year (% of total adults) in 2014 and the financial literacy score



Source: Bruegel based on Global Financial Development Database and Standard & Poor's Global FinLit Survey.

The ratio between borrowing and saving has a positive association with the financial literacy score. That is, in more financially literate countries the ratio is closer to one (Figure 4), a fact that can be thought of as financial prudence.

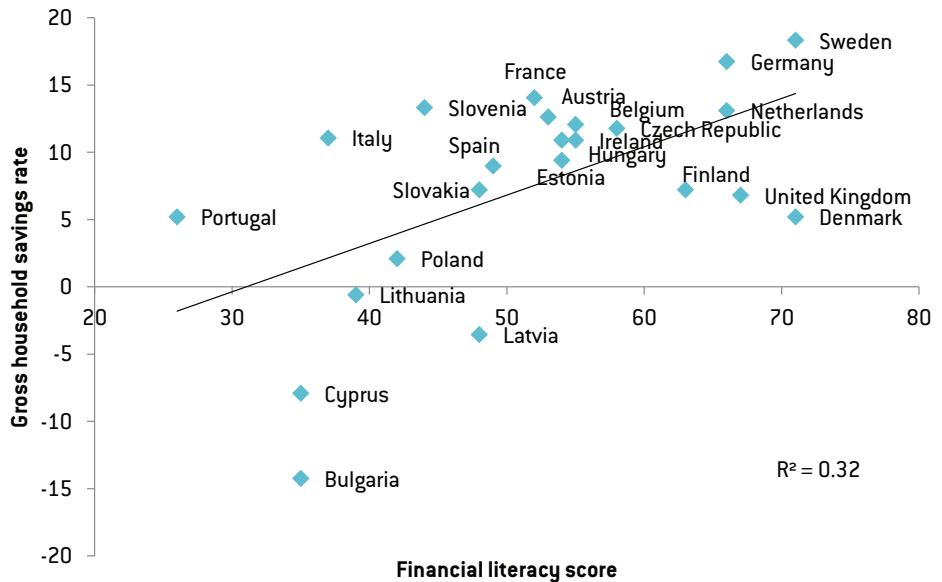
Figure 4: Ratio between borrowing and saving vs. financial literacy score



Source: Bruegel based on Global Financial Development Database and Standard & Poor's Global FinLit Survey.

Household saving behaviour is also positively associated with financial literacy in European economies (Figure 5).

Figure 5: Financial literacy and gross household saving rates



Source: Bruegel based on Eurostat, code-nasa_10_ki and Standard & Poor's Global FinLit Survey. Note: Gross household saving rate is defined as gross saving divided by gross disposable income. Gross saving is part of the gross disposable income which is not spent on consumption.

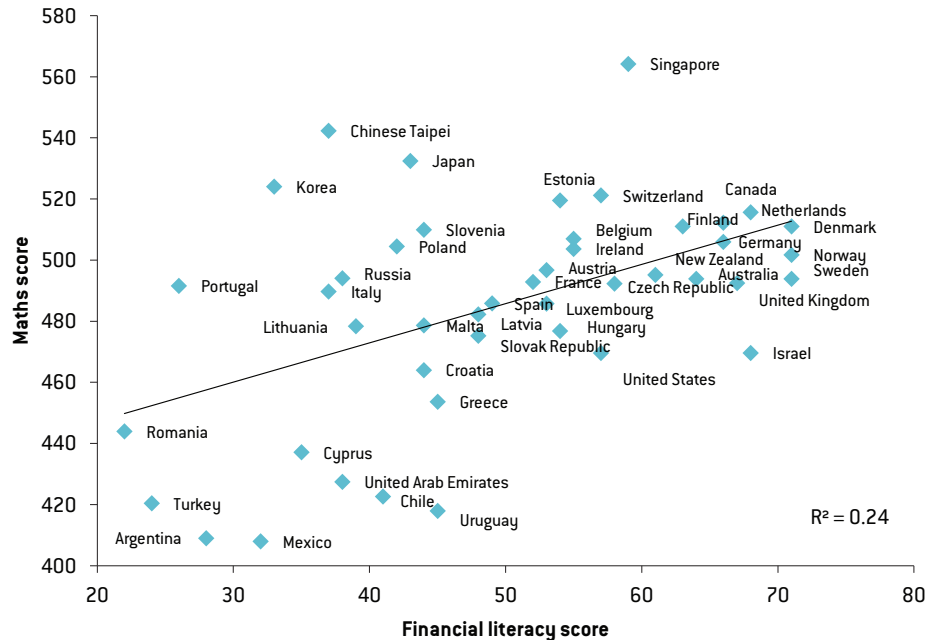
2 Financial literacy and education

Financial literacy is not only financial education. The term can be divided into *financial education* covering the knowledge that can be acquired institutionally, such as basic concepts of economics, finance and numeracy skills, and the *ability to employ* this knowledge in making financial decisions (Huston, 2010).

Education, particularly numeracy skills, is an important component of financial literacy, but it is not a perfect proxy.

There is a positive, but weak relationship between financial literacy and students' PISA (Programme for International Student Assessment) performances in maths. The relationship is somewhat similar for reading scores and weaker for science scores (Figure 6). Numeracy skills and simple calculations are integral parts of financial literacy surveys. For instance, the first efforts to measure financial literacy through surveys asked three questions ("big three") on interest rates, inflation and risk diversification (Lusardi and Mitchell, 2006, 2008, 2010)³. The interest compounding question asks respondents to make a simple calculation, which is covered by the general education curriculum. But even then, around one in five in Germany, which is one of the top performers, get it wrong (Allianz, 2017). In the same sample of highly developed countries, Italy's correct response rate is 66 percent, while for the US it is 69 percent and for the Netherlands 76 percent. The inflation question demands both numeracy and general comprehension of what inflation is. Interestingly, respondents in countries that experienced inflation recently tend to have higher rates of correct answers, such as Italy; conversely respondents without recent experience, such as in Japan, tended to answer incorrectly (Lusardi and Mitchell, 2011). And finally, the risk diversification question does not require calculations, but a specific financial knowledge of the difference between a 'stock' and a 'mutual fund'.

Figure 6: Financial literacy score vs. PISA maths score



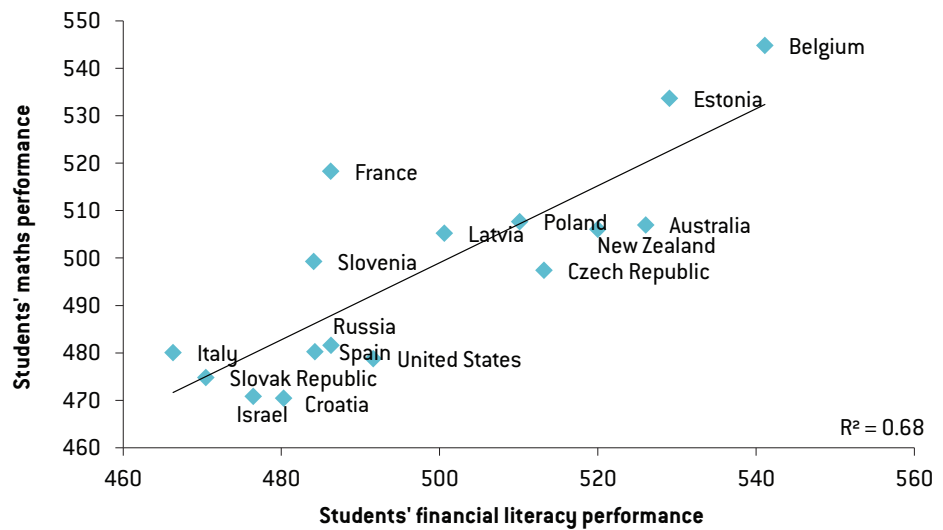
Source: Bruegel based on OECD Pisa 2015 and Standard & Poor's Global FinLit Survey.

3 The three questions are: 1. Suppose you had \$100 in a savings account and the interest rate was 2 percent per year. After five years, how much do you think you would have in the account if you left the money to grow: more than \$102, exactly \$102, or less than \$102? 2. Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After one year, would you be able to buy more than, exactly the same as, or less than today with the money in this account? 3. 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.'

The association between students' maths performance and students' financial literacy scores is much stronger than the link between the math performances and the financial literacy scores of the general population (Figure 7). In 2012, the OECD ran a special module of PISA comparing financial literacy among 15 year olds against their socio-economic background and general school performance. The highest scorers in financial literacy were 15-year olds in Shanghai-China, followed by the Flemish Community in Belgium; while Italy and Colombia had the lowest scores. Unsurprisingly, socio-economically advantaged students and those from non-immigrant backgrounds tended to score better than their peers.

These results highlight the fact that financial literacy education can be most beneficial when integrated into the general education curriculum, since the link between maths performance and financial literacy seems to weaken at a later stage.

Figure 7: PISA special module on financial literacy and students' math scores, 2014



Source: Bruegel based on OECD Financial Literacy Pisa 2012 and Standard & Poor's Global FinLit Survey.

3 Why do we care about financial literacy?

The literature identifies several major areas that see an impact from financial literacy programmes and where results were measured:

- 1. Greater likelihood to plan for retirement and more retirement accumulation.** Low financially literate individuals are less likely to plan for retirement (Lusardi and Mitchell, 2007, 2009, 2011; Van Rooij *et al*, 2009, 2011). Answering one additional financial question correctly is associated with a 3.4 percentage point higher likelihood of planning for retirement in Germany, the US, Japan and Sweden, and a 10 percentage points increase in the Netherlands (Lusardi and Mitchell, 2011). Company-offered financial education seminars tended to increase participation in 401(k) (defined contribution) pension plans in the US (Clark and Shieber, 1998; Madrian and Shea, 2011) and participants tended to have greater diversification in their retirement plan portfolios (Madrian and Shea, 2011). More financially literate individuals paid lower fees for mutual funds (Hastings *et al*, 2011). More financially knowledgeable employees could expect to earn higher returns on their investment savings (Clark *et al*, 2015).
- 2. Diverse asset portfolios.** Literate households not only are more likely to plan for retirement, but also hold different types of assets on their balance sheets. Evidence from Dutch households suggests that more financially literate households tend to hold stocks and

that financial literacy goes together with more diversified portfolios and better control over expenses (Van Rooij *et al*, 2009, 2011). In the US, Yoong (2011) finds that lack of stock market participation knowledge significantly reduces the likelihood of holding stocks.

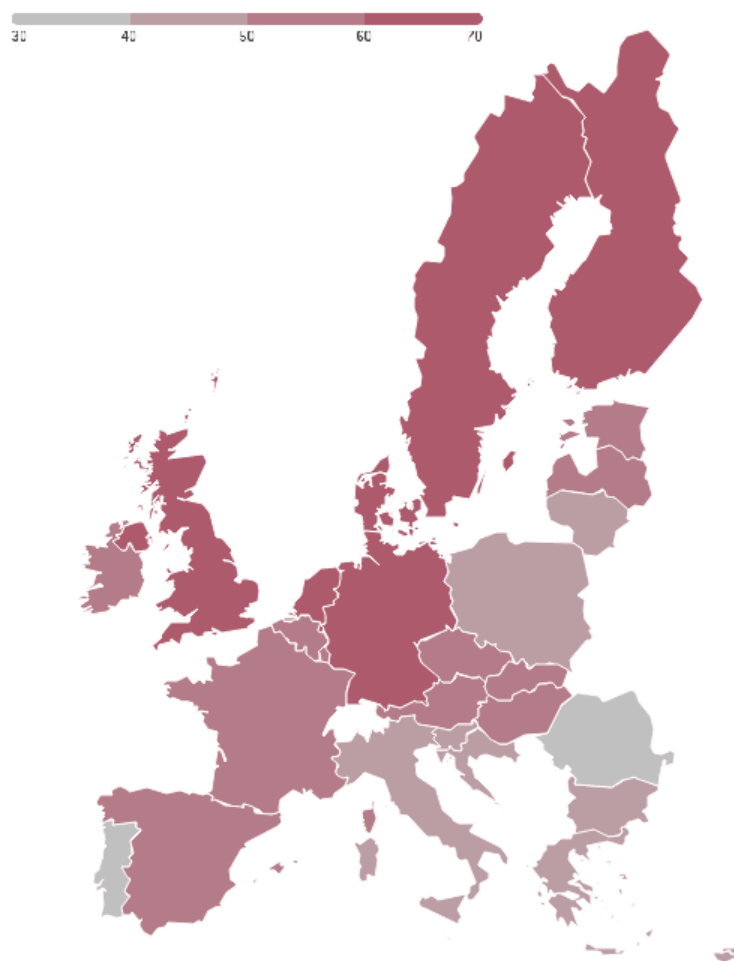
3. **Higher awareness in terms of borrowing decisions.** Individuals with lower financial literacy tend to borrow at higher rates (Lusardi and Tufano, 2009; OECD, 2005), particularly young people engaged in credit card borrowing (Lusardi and Tufano, 2009). British young people engage in high credit card borrowing, which damages their borrowing opportunities later in life because of bad credit scores (OECD, 2005).
4. **Better allocation of lifetime resources.** A study of German households that were badly affected during the financial crisis showed that those with low financial literacy were more likely to sell their assets at a loss. This indicates that short-term decisions impact long-term possibilities for wealth accumulation (Bucher-Koenen and Ziegelmeier, 2011). Some 30-40 percent of retirement wealth inequality is accounted for by variation in financial knowledge, ie financial knowledge enables individuals to better allocate lifetime resources (Lusardi *et al*, 2017).
5. **Increased planning and savings by women and low-income individuals.** Women have lower retirement age goals and retirement income goals. However, it has been shown that after attending financial education seminars provided by their employers, they are more likely than men to increase their retirement ages and increase contributions to their existing plans, start new tax deferred saving accounts and change/diversify their investment allocations (Clark *et al*, 2006)⁴. Lusardi *et al* (2009) found that financial education programmes specifically targeted at low-income individuals and women are effective and also inexpensive, resulting in participants being more likely to take immediate action to save in supplementary saving accounts. The study also highlighted that saving difficulty is particularly high for young female employees and older male employees with lower incomes.
6. **Increased saving and planning behaviour among children and young adults.** Financial sophistication, encouraged by economics education when young, has a strong positive impact on financial literacy, ie economics education is a strong predictor of sophisticated financial literacy (the more financially sophisticated individuals are, the more they think about retirement) (Van Rooij *et al*, 2009). After conducting financial education at school for 20,000 students in Brazil for 17 months, using a randomised control trial, Bruhn *et al* (2013) found that those who were exposed to financial education displayed significant improvement in terms of budgeting, negotiating prices and payment methods. This also had 'trickle-up' effects. Take-home exercises involving calculating household budgets and comparing interest rates had an effect on parental savings rates, which saw a 0.67 percentage point increase, and the likelihood to sticking to household budgets. Those who followed the seminar performed better at financial knowledge tests, but there is no study on the subsequent behaviour change (Bruhn *et al*, 2013).

4 Financial literacy in the European Union

Some European Union countries are among the world's best performers in financial literacy. Denmark and Sweden both have 70 percent literacy rates (Figure 8). However, the EU also includes countries that perform below the global average, such as Romania with a 22 percent rate and Portugal with a 26 percent rate.

4 In the US, employees were provided with a total of 36 seminars, in 24 institutions with 633 respondents in total on financial education, retirement planning and retirement income they desire. These seminars also included special seminars designed for women (Clark *et al*, 2006).

Figure 8: Financial literacy in the European Union, 2014



Source: Bruegel based on Standard & Poor's Global FinLit Survey. Note: Darker shade indicates better performance.

4.1 Financial literacy in the EU

Findings about financial literacy in the EU echo similar findings from the US: that lower-income groups, women and less-educated respondents score lower than the rest of the population. Financial literacy rates across age cohorts form a hump shaped distribution. Individuals below 25 years and above 70 years score lowest and the correct response rate peaks among 55-65 year olds (Lusardi and Mitchell, 2011).

Women tend to score lower than men in all countries and within age groups, and are more likely to answer 'do not know' than men. By contrast, there is no gender gap in financial literacy among schoolchildren, underlining the need for financial education from a young age (OECD, 2012).

Saving, spending and investment decisions are integral parts of our lives, demanding an ever increasing level of knowledge of the risks and opportunities that come with these decisions. If globally one in three adults are not able to answer questions demanding relatively low levels of financial knowledge, let alone carry out simple numeracy calculations, it is alarming to imagine how these individuals respond when faced with complex choices, from signing a mortgage contract to investing in a pension plan. At the same time, the financial world is becoming more and more complex and consumers are increasingly offered a dizzying array of financial products with different levels of risk and reward. In addition to the growing financialisation, the risks related to spending, saving and investment are shifting from institutions to individuals, from providers to contributors.

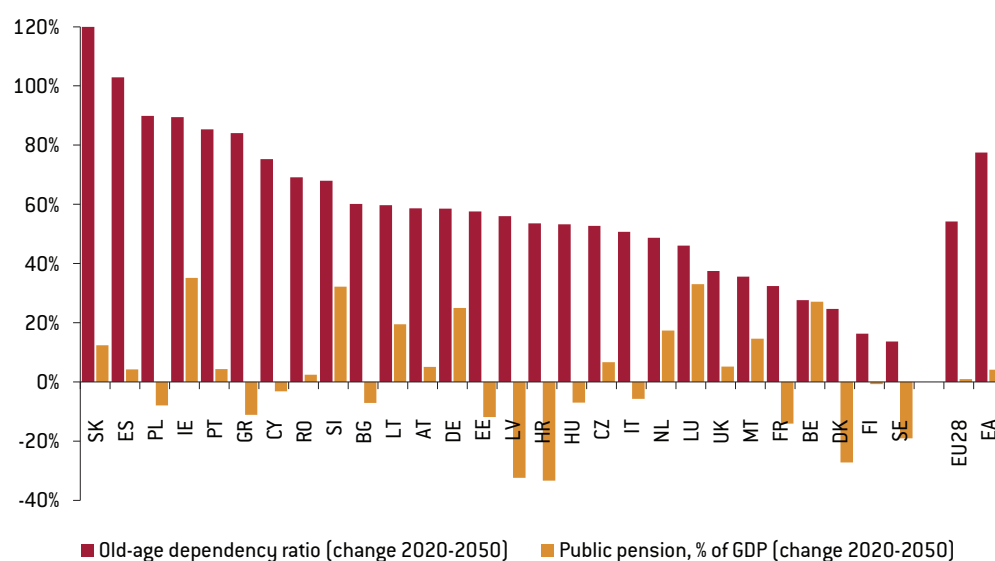
We outline three main interrelated arguments why financial literacy matters throughout an individual's life, and what implications financial literacy, or the lack of it, has for inclusiveness and inclusive growth, particularly in the EU.

4.1.1 Savings, pensions and shifting risk

Fifty year olds respond that what occupies them the most is future savings and retirement. All people facing retirement worry if they have accumulated enough savings to carry them through retirement.

By 2050, one in three people in the EU will be over 65 and the ratio of working people to those aged 65 and over (the old-age dependency ratio) will shift from four to one currently to two to one. However, public pensions ratios are expected to remain broadly stable in the EU in the same period (Figure 9). This will exert an enormous pressure on pay-as-you-go (PAYG) systems. Pressure on the public pension system could be mitigated by shifting towards more occupational and personal insurance systems (European Commission, 2015).

Figure 9: Old-age dependency ratio and public pensions as a % of GDP, change 2020-2050

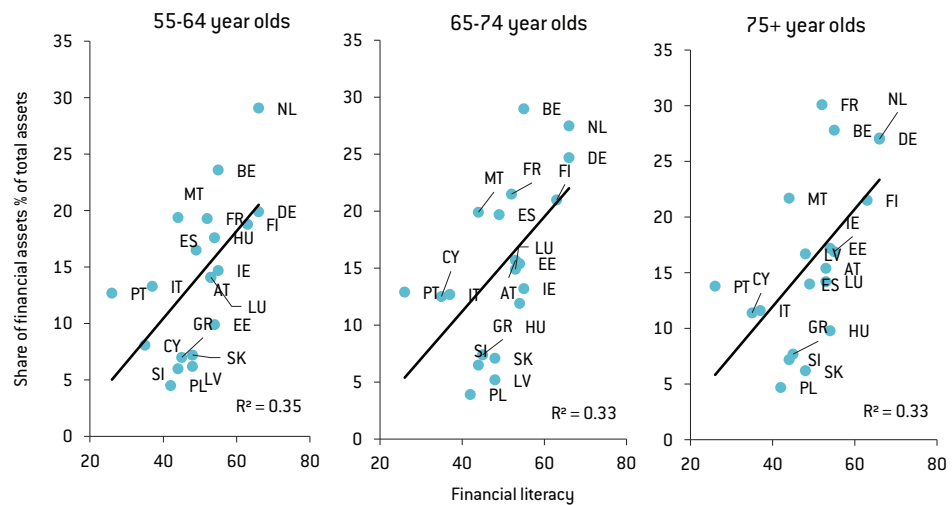


Source: Eurostat, old age dependency ratio code- demo.pjanind; public pensions as a share of GDP is from Eurostat/ESSPROS.

More and more countries are shifting from defined benefits to defined contribution systems, meaning saving, spending and investment decisions are shifting increasingly from institutional set-ups to the individual. In defined contribution systems, the employee is typically responsible for deciding how to invest their life savings. This puts pressure on the individual and demands a certain degree of financial literacy

Financial literacy is important for retirement savings, among others, for two main interrelated reasons. First, people who respond to surveys that they think of retirement planning tend to save more, and the causality runs from planning to wealth and not the other way around (Lusardi *et al*, 2010). Therefore, financial literacy boosts the intention to save; investment in financial literacy is optimal when done ahead of financial decisions. Second, households that score better on financial literacy also accumulate more wealth and are more likely to invest in stocks (van Rooij *et al*, 2007, 2011). This has significant implications for the portfolio diversification of household balance sheets. In the EU, large parts of the balance sheets of the households of older people are made up of financial assets (Figure 10). The share of financial assets on the balance sheets of these households is positively associated with countries' financial literacy scores. Holding of diverse assets by households is preferable not least because it reduces overreliance on retirement income.

Figure 10: The share of financial assets in households' total assets by age group vs. the financial literacy score



Source: European Central Bank's Household Finance and Consumption Survey, wave 2 (2014). Note: Financial assets include deposits, shares, bonds, mutual funds and voluntary pensions/whole life insurance.

Furthermore, the population aged over 65 in the EU has €3 trillion in spending power⁵, which means that their spending and investment decisions will increasingly have significant implications for the rest of the economy, in terms of the distribution of wealth and the inter-generational transmission of wealth.

4.1.2 Borrowing and household debt

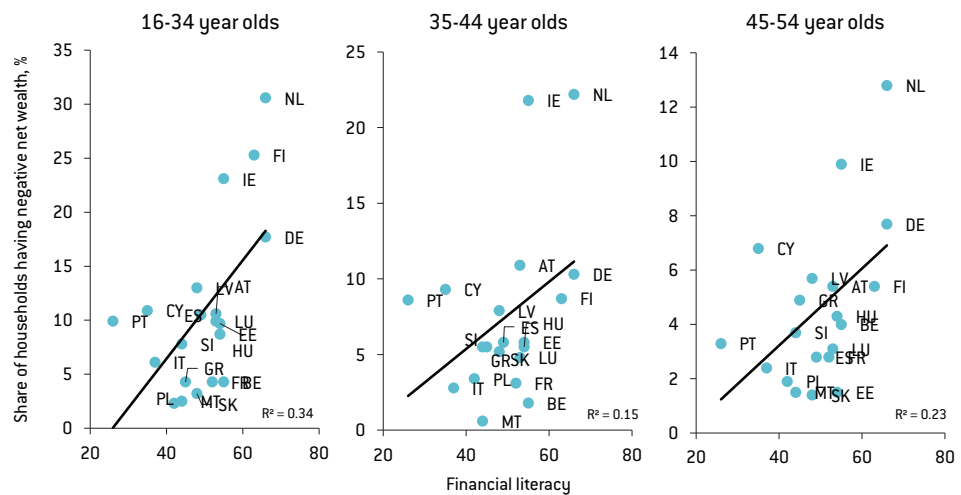
Financial literacy is not only the understanding of concepts and the taking of saving and investment decisions. It also covers attitudes towards, and understanding of, debt and other forms of liabilities. Household balance sheets are composed mainly of two kinds of debt – mortgage debt (including in relation to second houses and other real estate property) and non-mortgage debt (consumption debt, credit card debt/overdraft and debts such as business loans). For euro-area households, mortgage debt makes up 85.5 percent of total household debt; this share of debt is highest for young households aged 16-34, followed by those aged 35-44 (ECB, 2016). There is a positive association between the share of households with negative net wealth and financial literacy scores, indicating the increasing importance of financial literacy with increasing levels of household leverage (Figure 11). This positive association is strongest for young households (16-34 age group).

Young households, particularly low-income households, were hit hardest during the great recession. When house prices collapsed, the low net-worth households experienced the greatest drop in their net wealth because their wealth was exclusively tied to their housing equity (Atif and Mian, 2015). For the euro area, evidence is starting to emerge that the decline in wealth was greater for households with a mortgage (20 percent decline), than households already owning a home (12 percent decline) (ECB, 2016).

There is a growing literature on the positive association between the level of financial literacy and income and net wealth (Behrman *et al*, 2012; Van Rooij *et al*, 2012). Furthermore, financial literacy differs not only between income groups, but also within income groups. Studies show that debt problems are caused by lack of financial understanding rather than by lack of income. That is, households that are poorer, but scoring better on financial literacy are more likely to negotiate and get favourable contracts and pay lower interest (Lusardi and Tufano, 2009; Hasting *et al*, 2011; OECD, 2005).

⁵ Euromonitor (2013) 'The spending power of older consumer', available at <https://blog.euromonitor.com/2013/11/the-spending-power-of-the-older-consumer.html>, last accessed 13 February 2017

Figure 11: Share of households with negative net wealth in selected EU countries by age groups vs. countries' financial literacy scores, 2014



Source: European Central Bank's Household Finance and Consumption Survey, wave 2 (2014). Note: Negative net wealth entails liabilities (mortgage and non-mortgage debt) exceeding total household assets (real estate, financial assets, vehicle and other assets).

Offers of low financing in an environment of rising house prices, attracted in particular large numbers of young first-time homeowners and those at the lower end of the income distribution during the crisis. It needs to be mentioned that low financial literacy increases the likelihood of individuals falling victim to appealing but fraudulent offers.

4.1.3 Inclusive growth

There is a rich literature detailing the link between economic growth and its impact on socio-economic outcomes. Growth is considered inclusive when individuals, regardless of their socio-economic background, have an equal opportunity to progress. Poverty, inequality and social mobility are the main components of inclusive growth. Studies show that children from socio-economically disadvantaged backgrounds tend to underperform at school, which hinders their prospects for better education at a later stage and leads to lower employability. Moreover, people with lower education have worse health and live shorter lives (Darvas and Wolff, 2016). In more unequal societies with higher shares of people living in poor households, social mobility also tends to be lower (Corak, 2013).

Investing in financial education throughout individuals' lives, particularly at an early age, increases financial knowledge overall and influences decision-making later in life (Van Rooij *et al*, 2009). This has major implications for inclusiveness, though the impact varies depending on country, socio-economic level and circumstances related to birth.

4.2. Financial literacy and inclusiveness

Why is financial literacy important for inclusive growth? We argue that giving people the education and tools to better navigate the increasingly complex financial world is one of the pre-conditions to achieving inclusive growth. For the poor and disadvantaged, increased financial literacy means improved opportunities to access the benefits of economic growth.

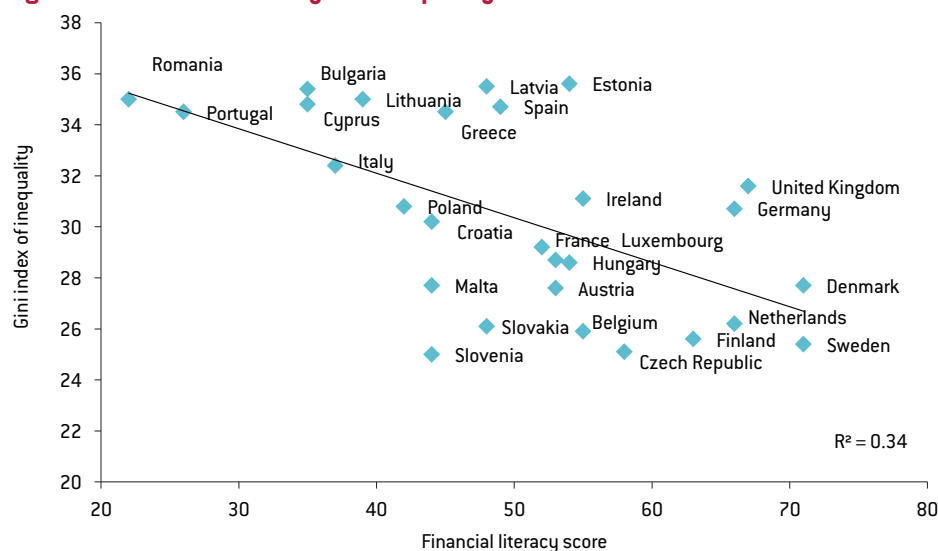
Surveys confirm that less educated and lower-income people tend to score lower on financial literacy than the rest of the population. In addition, adult women score lower than men on average and for all age groups, and are more likely than men to answer 'don't know'. There is a strong age bias – younger respondents do worse than older respondents – and a locale bias, with rural respondents tending to do worse than urban dwellers. In US, there is racial bias, with white and Asian cohorts tending to perform better than blacks and Hispanics. In Europe, school children from migrant backgrounds underperform compared to natives.

In light of these findings, we examine financial literacy in relation to the most important elements of inclusive growth, namely inequality, poverty and social exclusion and social mobility.

4.2.1. Inequality and financial literacy

There is a clear negative relationship between financial literacy scores and inequality in the EU (Figure 12). Countries performing better at financial literacy also tend to have lower inequality.

Figure 12: Financial literacy and inequality



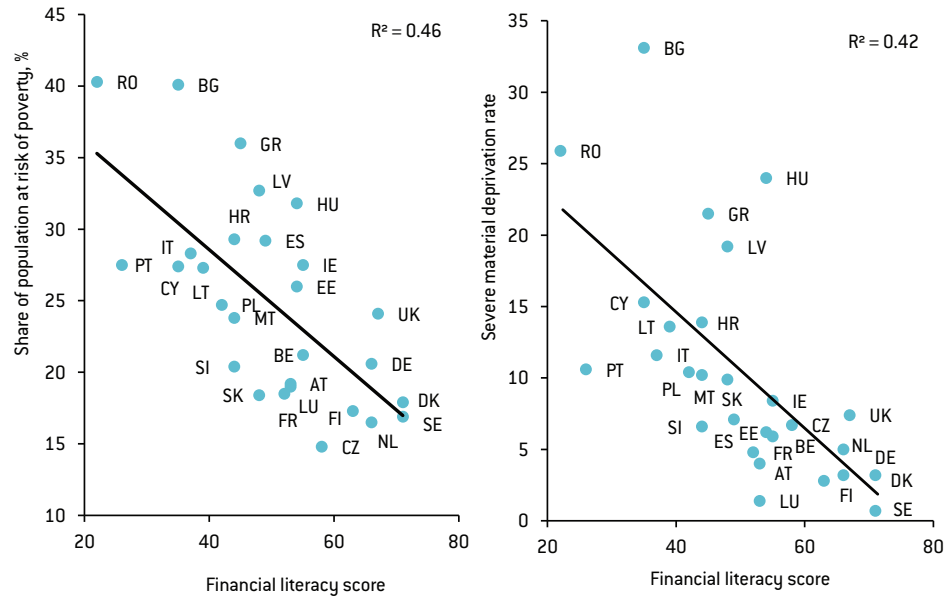
Source: Bruegel based on Standard & Poor's Global FinLit Survey and Eurostat. Note: Gini coefficient of equivalised disposable income, code – ilc_di12.

4.2.2 At risk of poverty rate, social exclusion and financial literacy

Financial literacy scores are also strongly associated with poverty and social exclusion indicators. One of the five Europe 2020 targets is to “lift at least 20 million people out of poverty by 2020”. The headline indicator to measure the progress is the rate of people at risk of poverty (AROP) in each country. The findings suggest that countries performing better at financial literacy have lower shares of population at risk of poverty. Actively investing in financial education and literacy programmes might serve as one of the tools to reach the Europe 2020 targets.

In addition to the AROP indicator, we look at another measure of vulnerability and social exclusion: the severe material deprivation rate. We reach a similar conclusion, that the financial literacy score is negatively associated with the severe material deprivation rate (Figure 13).

Figure 13: Financial literacy and vulnerability and social exclusion

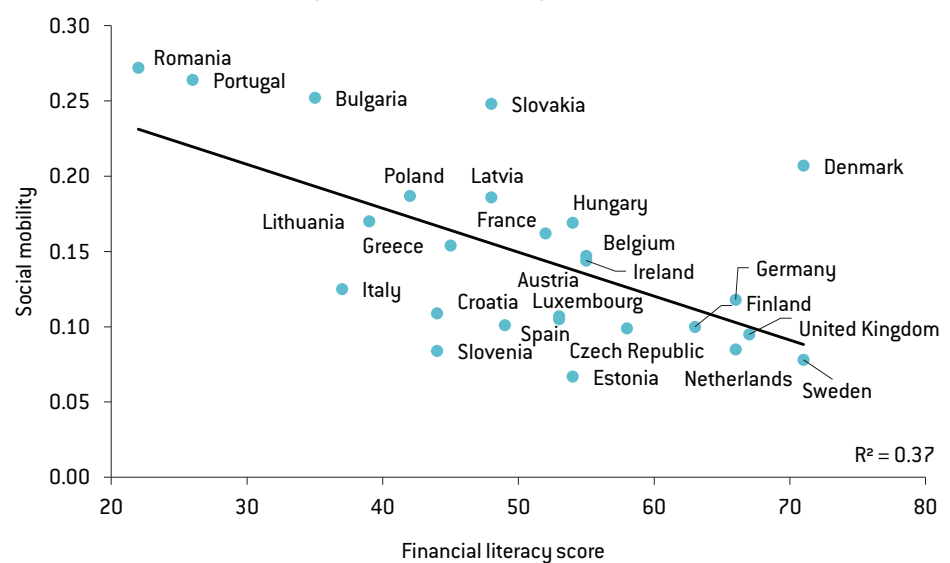


Source: Bruegel based on Standard & Poor's Global FinLit Survey and Eurostat. Note: 'At risk of poverty': people with a disposable income below 60 percent of the national median equivalised disposable income. 'Severely materially deprived': people unable to afford at least four of the following: 1. rent, mortgage or utility bills; 2. adequate home heating; 3. a reserve against unexpected expenses; 4. regular meat or proteins; 5. a holiday; 6. a television set; 7. a washing machine; 8. a car; 9. a telephone.

4.2.3. Mobility and financial literacy

There is a visible negative relationship between individuals' social mobility, proxied by the correlation between students' maths test scores and socio-economic backgrounds, and countries' financial literacy scores (Figure 14). In countries with higher financial literacy scores, the relationship between wealth and maths scores is less pronounced. As such, socio-economic circumstances related to birth have an impact on financial literacy. Unsurprisingly, socio-economically advantaged students and those from non-immigrant background tended to score better than their peers.

Figure 14: Financial literacy and social mobility



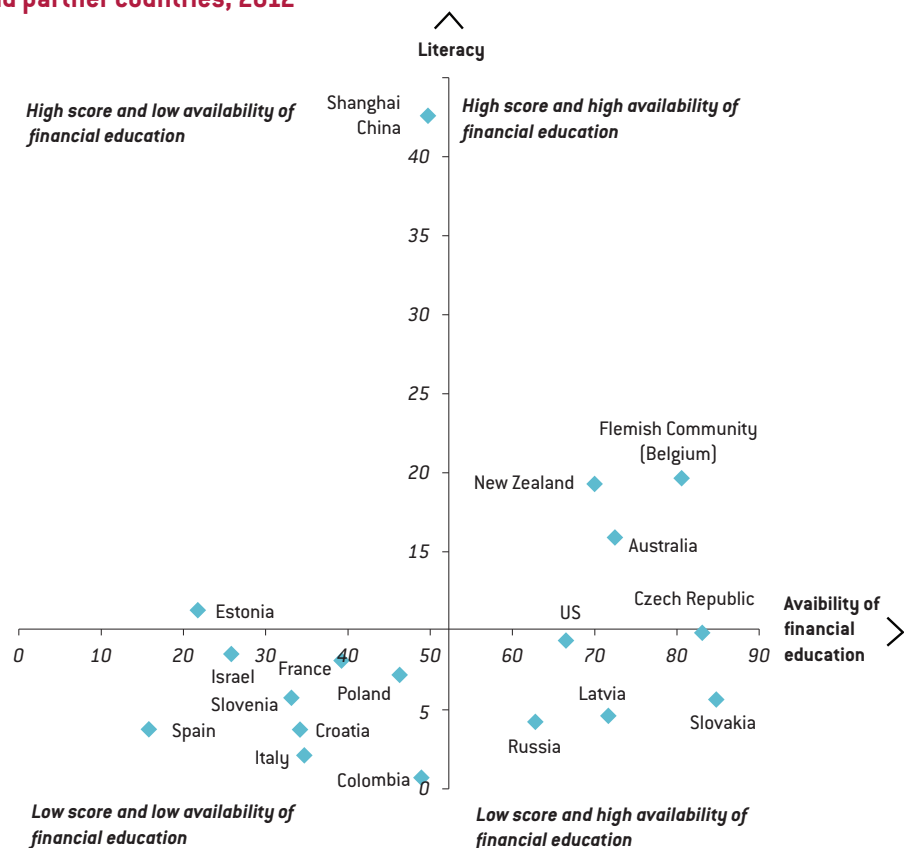
Source: Bruegel based on Standard & Poor's Global FinLit Survey and Sandefur (2015) for social mobility indicator.

5 Policy recommendations

Countries have experimented with different policies to improve the levels of financial literacy. A number of general messages emerge from the experience of applying some of these policies, notwithstanding that tailored policies are needed.

- 1. Start as early as possible.** Providing financial education at school, preferably from a young age, leads to significant improvements in individuals' budgeting behaviour (Bruhn *et al*, 2016). Financial education, therefore, needs to be integrated into school curriculums. In the Flemish Community in Belgium (best European performer in financial literacy) (Figure 15), a financial curriculum was introduced and made mandatory in the secondary school curriculum in 2010-11. But simply introducing financial education is not a panacea. There is a weak relationship between the availability of financial education and countries' financial literacy scores. Quality is important. For instance the Flemish Community in Belgium has the highest share of teachers attending professional development in financial education (OECD, 2012). Equally important is the quality of school education and satisfaction with school. In more financially literate countries, students also outperform in related subjects (maths, reading and science)⁶. Integrating financial education into early schooling builds numeracy skills more effectively and raises financial awareness.

Figure 15: Literacy score and availability of financial education in schools in OECD and partner countries, 2012



Source: OECD PISA (2012).

6 For instance, Belgium has below average low-achieving students in mathematics and an above average share of top performers, especially in Flanders where students outperform others in mathematics, scoring 531 points on average, compared to 511 in German speaking communities and 493 in French speaking communities; the same performance gap is observed in reading and science test scores. In addition, 78 percent percent of the students respond that conditions in their schools are ideal (OECD average of 61 percent), indicating a favourable learning environment overall.

2. **Move away from ‘one-size fits all’ programmes** and tailor programmes to the needs of specific communities. Beck and Neiser (2009) from the San Francisco Fed write that financial education needs to move away from designing programmes for the middle class provided that individuals have reached a stable ground and ready to save. Instead, programmes need to target young people, low-income groups, families and women. Programmes designed for low-income individuals can start by building the skills needed to negotiate better deals on financial contracts, on establishing emergency funds or on ways to better make use of state financial assistance programmes. In the EU, there is a particular need to target and improve the financial literacy of refugees as a crucial step in improving financial inclusion and social integration (Batsaikhan *et al*, 2018). These efforts to measure, understand and improve financial literacy should be made with strong private support from banks and financial institutions in the EU.
3. **Financial education is a life-long learning process.** Provide financial education before individuals engage in costly financial transactions (Lusardi *et al*, 2010). This involves providing financial education to young adults before they start to borrow to finance education, to individuals before they enter into mortgage contracts, to employees before they invest in various types of retirement funds. Programmes, such as provision of financial counselling services to employees nearing retirement, have proved successful in increasing pension savings rates. This implies that financial education needs to be targeted and specific to different financial activities.
4. **Provide tools to better evaluate financial literacy.** It is important to understand the link between financial literacy levels and individuals’ saving, spending and consumption habits in different EU countries. Instruments such as the European Central Bank’s Household Finance and Consumption Survey can help promote monitoring of financial literacy developments in Europe. Incorporating a financial literacy questionnaire into the Survey would help in understanding each country’s needs and the effectiveness of policies.
5. **Increase private-sector involvement.** The private sector is at the forefront of financial education and therefore private-sector involvement is crucial. However, private-sector involvement needs to be monitored to avoid conflicts of interest. Negative experiences with financial institutions makes the task of educators harder in terms of accessing individuals and delivering education (Beck and Neiser, 2009).
6. **More is not necessarily better.** Information and education overload can discourage individuals from making financial decisions. Too many options for retirement savings discourage individuals from saving (Iyengar and Jiang, 2003). Instead, the best practice is to design programmes with a limited number of choices. Those choice should and increase in ways that reflect the individual’s financial capacity and preferences. Accounting therefore for a consumer’s perspective, what they need and how they can process the information is likely to produce better understanding and facilitate better choices.
7. **Need for behavioral research.** Effects of one-off educational programmes dissipate over time (Fernandes *et al*, 2013). Since financial literacy has both educational and behavioural aspects, it is crucial to understand the effect of education programmes on the financial behaviour of individuals. This requires longitudinal surveys and randomised control trials. Only a handful of these – involving large enough samples and over long periods – have been implemented globally, eg Becchetti *et al* (2011) for Italy and Bruhn *et al* (2013) for Brazil. These research efforts will increasingly benefit from an interdisciplinary approach involving behavioural economists, sociologists and psychologists in designing the survey questionnaires.

References

- Batsaikhan, Uuriintuya, Zsolt Darvas and Inês Gonçalves Raposo (2018) *People on the move – impact and integration of migrants in the European Union*, Blueprint Series 28, Bruegel.
- Becchetti, Leonardo, Stefano Caiazza and Decio Coviello (2011) ‘Financial education and investment attitudes in high schools: Evidence from a randomized experiment’, *CEIS Research Paper* No. 210, Tor Vergata University.
- Beck, Ted, and Brent Neiser (2009) ‘Learning and growing: Lessons learned in financial education’, *Community Investments* 21(2): 11-14.
- Behrman, Jere R., Olivia S. Mitchell, Cindy K. Soo and David Bravo (2012) ‘How financial literacy affects household wealth accumulation’, *American Economic Review* 102(3): 300-304.
- Bruhn, Miriam, Luciana de Souza Leao, Arianna Legovini, Rogelio Marchetti and Bilal Zia (2013) ‘The impact of high school financial education: experimental evidence from Brazil’, *World Bank Policy Research Working Paper* 6723, Washington DC: World Bank.
- Bucher-Koenen, Tabea, and Michael Ziegelmeyer (2011) ‘Who lost the most. Financial literacy, cognitive abilities, and the financial crisis’, *European Central Bank Working Paper* 1299, Frankfurt a.M: ECB.
- ihák, Martin, Asli Demirgüç-Kunt, Erik Feyen and Ross Levine (2012) ‘Benchmarking financial systems around the world’, *World Bank Policy Research Working Paper* 6175, Washington DC: World Bank.
- Clark, Robert L., Madeleine B. d’Ambrosio, Ann A. McDermed and Kshama Sawant (2006) ‘Retirement plans and saving decisions: the role of information and education’, *Journal of Pension Economics and Finance* 5(01): 45-67.
- Clark, Robert L., Annamaria Lusardi and Olivia S. Mitchell (2015) ‘Employee financial literacy and retirement behavior: A case study’, *Global Financial Literacy Excellence Center Working Paper* 2015-6, Washington DC: GWU.
- Clark, Robert, and Sylvester Schieber (1998) ‘Factors Affecting Participation Rates and Contribution Levels in 401(k) Plans’, in Olivia Mitchell and Sylvester Schieber (eds) *Living with Defined Contribution Plans*, Philadelphia: University of Pennsylvania Press.
- Hastings, Justine, Olivia S. Mitchell and Eric Chyn (2011) ‘Fees, framing, and financial literacy in the choice of pension manager’, *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, *University of Pennsylvania Business Economics and Public Policy Papers* 63:101-115.
- European Central Bank (2016) *Results of the second wave of Eurosystem’s Household and Consumption Survey*.
- European Commission (2015) ‘The Ageing Report’, *European Economy* 3, May.
- Fernandes, Daniel, John G. Lynch Jr. and Richard G. Netemeyer (2013) ‘Financial Literacy, Financial Education and Downstream Financial Behaviors’, *Management Science* 60 (8): 1861-1883.
- Iyengar, Sheena S., and Wei Jiang (2003) ‘Choosing not to choose: The effect of more choices on retirement savings decisions’, mimeo, Columbia University.
- Lusardi, Annamaria, Punam Keller and Adam Keller (2008) ‘New ways to make people save: a social marketing approach’, in Annamaria Lusardi (ed) *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs*, Chicago: University of Chicago Press.
- Lusardi, Annamaria, and Olivia S. Mitchell (2007) ‘Baby boomers retirement security: the role of planning, financial literacy and housing wealth’, *Journal of Monetary Economics* 54(1): 205-224.

- Lusardi, Annamaria, and Olivia S. Mitchell (2008) 'Planning and financial literacy: How do women fare?' *American Economic Review* 98(2): 413-417.
- Lusardi, Annamaria, and Olivia S. Mitchell (2009) 'How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness,' *NBER Working Paper* no. 15350, National Bureau of Economic Research.
- Lusardi, Annamaria, and Olivia S. Mitchell (2011) 'Financial literacy around the world: an overview,' *NBER Working Paper* no. 17107, National Bureau of Economic Research
- Lusardi, Annamaria, and Olivia S. Mitchell (2013) 'The economic importance of financial literacy: Theory and evidence,' *Journal of Economic Literature* 52(1): 5-44.
- Lusardi, Annamaria, and Peter Tufano (2009) 'Debt literacy, financial experiences, and overindebtedness,' *NBER Working Paper* no. 14808, National Bureau of Economic Research.
- Lusardi, Annamaria, Pierre-Carl Michaud and Olivia S. Mitchell (2017) 'Optimal Financial Knowledge and Wealth Inequality,' *Journal of Political Economy* 125(2): 431-744.
- Lusardi, Annamaria, Olivia S. Mitchell and Vilsa Curto (2010) 'Financial literacy among the young' *Journal of Consumer Affairs* 44(2): 358-380.
- Madrian, Brigitte and Dennis Shea (2001) 'The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior,' *Quarterly Journal of Economics* 116(4): 1149-1187.
- Mian, Atif, and Amir Sufi (2015) *House of debt: How they (and you) caused the Great Recession, and how we can prevent it from happening again*, University of Chicago Press.
- OECD (2005) *Improving Financial Literacy: Analysis of Issues and Policies*, Organisation for Economic Co-operation and Development, Paris.
- OECD (2012) *PISA Financial Literacy Assessment of students*, Organisation for Economic Co-operation and Development, Paris.
- Van Rooij, Maarten, Annamaria Lusardi and Rob Alessie (2009) 'Financial literacy and retirement planning in the Netherlands,' *DNB Working Paper* No.231/November.
- Van Rooij, Maarten, Annamaria Lusardi and Rob Alessie (2011) 'Financial literacy and stock market participation,' *Journal of Financial Economics* 101(2): 449-472.
- Van Rooij, Maarten CJ, Annamaria Lusardi and Rob JM Alessie (2012) 'Financial literacy, retirement planning and household wealth,' *The Economic Journal* 122(560): 449-478.
- Yoong, Joanne (2011) 'Financial illiteracy and stock market participation: Evidence from the RAND American Life Panel,' in Olivia S. Mitchell and Annamaria Lusardi (eds) *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, Oxford: Oxford University Press.