I Z A Institute of Labor Economics

Initiated by Deutsche Post Foundation

Culture and Adult Financial Literacy: Evidence from the United States

Maddalena Davoli
Núria Rodríguez-Planas

Culture and Adult Financial Literacy: Evidence from the United States

Maddalena Davoli
Goethe University Frankfurt

Núria Rodríguez-Planas
City University of New York, Queens College and IZA

ABSTRACT

Culture and Adult Financial Literacy: Evidence from the United States*

Using a US nationally representative sample of over 6,000 adults from 26 countries of ancestry, we find a strong association between their financial literacy in the US and the financial literacy level in their self-reported country of ancestry. More specifically, if an individual from a country of ancestry with "average" financial literacy had instead come from a country with financial literacy one-standard deviation above the mean, his or her likelihood of answering correctly basic financial literacy questions regarding inflation, risk diversification, and interest rate in the US would have increased by 4 percentage points, a 9% increase relative to the average financial literacy in our sample of 43%. The cultural components behind this observed association include a strong emphasis on patience, long-term orientation and risk-aversion in the country of ancestry. We also find that the association is driven by financial literacy on risk diversification and interest compounding.

Corresponding author:
Núria Rodríguez-Planas
Queens College - CUNY
Economics Department
65-30 Kissena Blvd.
Queens, New York 11367
USA

E-mail: nuria.rodriguezplanas@qc.cuny.edu

1 Introduction

There has been a small but growing interest in understanding the role of culture on households' financial decisions, such as saving (Carroll, Rhee & Rhee 1994 and 1999; Costa-i-Font, Ozcan & Giuliano 2018; Fuchs-Schündeln, Masella & Paule-Paludkievwicz forthcoming), stock ownership (Guiso, Sapienza & Zingales 2004; Osili & Paulson 2008; Seto & Bogan 2013, Haliassos, Jansson & Karabulut 2017), mortgage borrowing (Rodríguez-Planas 2018), home ownership (Bogaard & Pirinsky 2011, Marcén & Morales 2019), and debt (Bogaard & Pirinsky 2011)[1]. Most of these studies find that individuals whose culture puts a stronger emphasis on wealth accumulation, stock ownership, or debt acquisition tend to save more, invest more in stocks, or have more debt, respectively[2]. Nonetheless, little is known on whether individuals' cultural influences help them make more informed financially sound decisions. To put it differently, finding an association between culture and individuals' financial behavior delivers no information on whether culture is linked to their financial literacy defined as their "ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions" (Lusardi & Mitchell 2014)[3]. This is the objective of the current paper.

More specifically, we investigate whether culture affects individuals' financial literacy. Culture may affect individuals' financial knowledge because they have internalized certain beliefs and values related to the: (1) relevance of gathering economic information to make informed financial decisions; (2) need to have precautionary savings and their optimal amount; (3) amount of risk that is reasonable to handle; (4) optimal portfolio diversification; (5) reliance and type of debt that is acceptable; or (6) risk of high inflation or deflation, among others. To explore the effect of culture on financial literacy, we use an epidemiological approach (Fernández 2008) and compare the financial literacy of a nationally representative sample of individuals who live in the United States, and hence, share the same institutional (including educational and financial) settings, but who identify with different countries of ancestry, and hence, are influenced by "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation" (Guiso, Sapienza & Zingales 2006).

Using the National Longitudinal Survey of Youth (NLSY), we rely on a sample of over 6,000 adults born (mostly) in the US between 1957-1961 for NLSY79 and 1980-1984 for NLSY97 and who identify with 26 different countries of ancestry. Both cohorts responded to three financial literacy questions on inflation, risk diversification, and interest rate in 2007 (for the NLSY97 cohort) or in 2012 (for the NLSY79 cohort). Using individuals' country or region of ancestry, we merge the NLSY data with the 2014 national-level Standard & Poor's Ratings Services Global Financial Literacy Survey (Klapper, Lusardi & Van Oudheusden 2015). This novel cross-country dataset offers an objective and representative measure of the average financial literacy in a given country

---

[1]A closely related literature analyzes the effects of culture on non-financial socio-economic outcomes, including preferences for redistribution (Luttmer & Singhal 2011); fertility and female labor force participation (Antecol 2000; Fernández & Fogli 2006 and 2009; Fernández 2008); living arrangements (Giuliano 2007); preferences for a child's sex (Almond, Edlund & Milligan 2013); divorce (Furtado, Marcén & Sevilla 2013); reading, science and math gender gaps (Nollenberger, Rodr'iguez-Planas & Sevilla 2016; Rodríguez-Planas & Nollenberger 2018); smoking gender gap (Rodríguez-Planas & Sanz-de-Galdeano 2019); and domestic violence (Gonzĺez & Rodríguez-Planas 2018).

[2]Two exceptions are Carroll et al. (1994 and 1999), which do not find a positive association between the saving behavior of respondents and those of their country of ancestry.

[3]A related literature has analyzed the relationship between financial literacy and financial behavior finding a positive association between financial literacy and day-to-day financial management skills (Hilgert, Hogarth & Beverly 2003), participation in financial markets and stock ownership (Kimball & Shumway 2006; Christellis, Jappelli & Padula 2010; van Rooij, Lusardi & Alessie 2011; Arrondel, Debbich & Savignac 2012), or holding of precautionary savings (de Bassa Scheresberg 2013). A more recent trend of quasi-experimental studies looks at the effect of exogenous changes in financial education on youth debt behavior (Brown, Grigsby, van der Klaauw, Wen & Zafar 2016), or of bank information policies on financial literacy (Fort, Manaresi & Trucchi 2016). While these findings are indicative of the relevance of financial literacy on economic outcomes, they provide no information on whether having a cultural background with a strong emphasis on financial literacy improves individuals' economic decisions.

that is comparable across countries. The S&P Global Financial Literacy Index measures the share of adults in a country responding correctly at least three questions among four financial concepts regarding risk diversification, inflation, numeracy, and interest compounding.

In this paper, we first identify a robust and positive association between individuals' financial knowledge in the US and country-of-ancestry S&P Global Financial Literacy Index. We then explore which cultural components drive this strong association. Identifying the cultural factors behind consumers' incentives to acquire financial knowledge sheds light on how financial literacy is acquired, a highly policy-relevant issue given the rising complexity of today's financial decisions.

Individuals in today's society face increasingly complex financial choices at every stage of adult life from having to deal with student loans and credit card debt to complicated mortgage products and pension plans. Being able to make sound financial choices and to avoid, possibly costly, financial mistakes is an important skill for individuals' daily-life decisions. Nonetheless, existing research on financial literacy shows worryingly high levels of financial illiteracy with large shares of the population unable to understand the simplest concepts on financial matters (Lusardi & Mitchell 2014). Based on a review of findings from different US surveys conducted in different years, Lusardi & Mitchell (2014) conclude that "most U.S. respondents are not financially literate". For instance, Lusardi & Mitchell (2011a) estimate that, in 2009, only 30 percent of individuals in the US could correctly respond three basic financial literacy questions on interest rate, inflation, and risk diversification. Similarly, low levels of financial literacy exist in many European countries, Australia and Japan (Organization for Economic Cooperation and Development 2005) and in countries at different stages of development across four continents (Atkinson & Messy 2011). Despite being widespread across the world, financial literacy varies substantially across countries, spanning from 13 percent in Yemen to 71 percent in Denmark (Klapper et al. 2015)[4].

If previous studies have mostly focused on the link between financial literacy and financial behavior[5], evidence on the determinants of financial literacy is consolidating. Studies analyzing disaggregated assessments of the financial literacy data within countries find that financial illiteracy is more severe among specific subgroups of the population, including women (Lusardi & Mitchell 2008; Lusardi, Mitchell & Curto 2010), African American and Hispanics in the US (Lusardi & Mitchell, 2007), those without a college degree (Christelis et al. 2010; and Lusardi 2012), low-paid workers and the unemployed (Lusardi & Tufano 2015), and those living in rural areas (Klapper & Panos 2011)[6]. Others have underscored the role of family background including parental education or whether the parents held stocks or retirement accounts when the respondents were teenagers (Lusardi et al. 2010; Mahdavi & Horton 2012; Hira, Sabri & Loibl 2013).

Moving to studies that use aggregate data, Jappelli (2010) analyzes which macroeconomic and institutional variables are related to country-level economic literacy across 55 countries[7]. He finds a positive association between the country's economic literacy and its human capital indicators, as well as its generosity of resources available for financial investment (proxied with social security contributions rate). We add to the above literature by analyzing the effect of culture (as opposed to institutions) on financial literacy. As our analysis focuses on individuals who live and were (mostly) born in the US, we are holding constant the educational system, economic institutions and conditions, banking system, financial markets and resources available, pension and individual-retirement-account regulations, housing laws, legal rights for borrowers and lenders, and

---

[4]See Klapper et al. (2015) for a thorough report on the findings from the S&P Global FinLit Survey on world-wide understanding of basic financial concepts.

[5]See references in footnote 3 above.

[6]See Lusardi & Mitchell (2014) for an extensive review of the population groups which most lack financial knowledge.

[7]Jappelli's indicator of financial literacy is "computed from a survey of business leaders who represent a cross-section of the business community in the countries examined."

the amount and quality of credit information available to lenders. If adults' financial knowledge is mainly a factor of the country's institutional constraints (after controlling for socio-demographic characteristics known to be associated with financial sophistication), the financial literacy index from the country of ancestry should be irrelevant. Evidence that country-of-ancestry financial literacy is associated with the financial knowledge of Americans would provide strong evidence that culture, transmitted across generations and/or through social networks, matters. This would be particularly revealing in our study because, in contrast with most epidemiological studies that tend to focus on second-generation immigrants[8] (Fernández 2008), we use a self-reported measure of ethnic identification that collects information on the country or region of ancestry the respondent identifies the most, regardless of which generation of ancestors immigrated to the US. To the extent that the persistence of country-of-ancestry culture is likely to decline with the respondent's number of generations since migration to the US[9], our estimates of culture will represent a lower bound of the relevance of culture.

We find that individuals whose country of ancestry puts a stronger emphasis on financial literacy are more likely to respond correctly the financial questions regarding inflation, risk diversification, and interest rate. Our main finding, summarized in Figure 1, is confirmed in the regression analyses, which include a large and rich set of economic and demographic characteristics known to affect financial knowledge, such as individual's education, family composition, employment, and parental educational and employment status while the respondent was a teenager, among others. Our results are robust to different specification strategies, omitted variable bias, and changes in sample criteria.

According to our estimates, if an individual from a country/region of ancestry with "average" financial literacy had instead come from a country with financial literacy one-standard deviation above the mean, the likelihood of answering correctly the three financial questions from the NLSY would have increased by 3.96 percentage points, a 9.2 percent increase relative to the average financial literacy in our sample of 43 percent. To put this estimate into context, having a college degree is associated with a 68 percent (or 29.3 percentage point) increase in the likelihood of answering the three financial literacy questions in the NLSY (relative to being a high-school graduate). Hence, the association of culture and financial knowledge is about 13.5 percent of the one between financial literacy and having a college degree.

We also explore which mechanisms may be driving our results. We find that respondents from countries of ancestry that value more patience, long-term orientation and risk aversion exhibit significantly higher financial literacy in the US. In addition, we also find that financial literacy on risk diversification and on interest compounding are the most relevant ancestry-level components of financial literacy.

To the best of our knowledge, Brown, Henchoz & Spycher (2018) is the only study to analyze the cultural dimension of financial literacy by comparing secondary-school students in French-versus German-speaking schools along the German-French language border within the Swiss canton of Fribourg. While profiting of a clean identification strategy, exploiting a unique self-collected data set with a wealth of information, and finding that cultural differences across the two language groups are driven by differences in financial socialization, their study is limited in sample size[10], located in a narrow geographic region within Switzerland, and identified by two cultures (the French and German ones). Using a different identification strategy, our paper shifts the attention to adult financial literacy, exploits cultural variation across a wider set of countries of ancestry,

---

[8]Second-generation immigrants are individuals who were born in the host country their parents immigrated to.
[9]Haliassos et al. (2017) find that the effect of culture diminishes with the time of exposure to host-country institutions.
[10]Their analysis relies on 649 students across four grade levels.

and focuses on a nationally representative sample of two cohorts of 25- and 50-year olds in the US. Importantly, our study complements Brown and coauthors' findings, and presents evidence that the association between culture and financial literacy persists among both the younger and older cohorts of adults in the US. The rest of the paper is structured in the following way. Sections 2 and 3 describe our data and identification strategy. Section 4 presents our baseline results and Section 5 tests the robustness of our results. Section 6 explores the mechanisms behind our findings and Section 7 concludes.

2 Data

The National Longitudinal Survey of Youth

Information on individuals' financial literacy, socio-demographic characteristics, employment, and parental background when the respondent was a teenager comes from the National Longitudinal Survey of Youth (NLSY hereafter). The NLSY follows two nationally representative samples of individuals in the United States over time: the first sample is formed by individuals who were first interviewed when they were between 14 and 22 years old in 1979 (NLSY79), whereas the second sample includes respondents who were between 12 and 17 years old in 1997 (NLSY97). Both cohorts responded to a one-time module on financial literacy: the NLSY97 cohort in 2007 and the NLSY79 cohort in 2012[11]. The younger cohort was, on average, 25 years old when they were asked about their financial knowledge, and the older cohort was 51 years old. We follow Gorbachev & Luengo-Prado (2019) and focus on the random sample of the NLSY as it is more broadly representative of the US population. Hence, we exclude from our analysis the NLSY oversamples of poor and members of the military. However, our results are robust to including them as shown in the sensitivity analysis in Section 4.

To measure individual's financial literacy, our main left-hand-side variable, we construct an objective measure of financial literacy, namely a dummy variable equal to one if the respondent answered correctly three questions regarding inflation, risk diversification, and interest rate (see Table 1 for the wording of the three questions). In addition, the NLSY collects individual's socio-demographic characteristics (including parental education, employment, and wealth and financial sophistication while the respondent was a teenager), as well as information on her household composition, marital status, employment status, citizenship status, region of residence and whether she lives in an urban or rural area. We use this additional information to control for observable characteristics that are known to be associated with financial literacy, and to conduct subgroup analysis. Finally, we also use several individual-level measures of cognitive and non-cognitive skills to explore the robustness of our results. Appendix Table A.1 presents basic descriptive statistics of all the NLSY variables that we use in the study.

Country-Level Variables

We merge individual-level data from the NLSY with country-level data from a variety of sources using the individuals' self-reported country or region of ancestry (defined below). Our main explanatory variable, a proxy for country-level social norms regarding financial knowledge, is the Standard & Poor's financial literacy index (S&P FL Index hereafter). This index measures the

---

[11]The few NLSY79 individuals who did not participate in the financial literacy module in 2012 were interviewed on their financial knowledge again in 2014 or 2016. To maximize our sample size, we also included them in our dataset. This represents 25 individuals in 2014 and one individual in 2016. The NLSY97 cohort was only asked the questions on financial literacy in 2007.

share of a country's adult population that is financially literate and is calculated using data from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey, designed by the World Bank, Gallup, and the George Washington University. This survey, first collected in 2014, generates nationally representative estimates of the share of a country's population that is financially literate by asking five questions on four basic financial concepts to more than 150,000 adults living in over 140 countries. The four financial concepts are risk diversification, inflation, interest and interest compounding and they measure concepts similar to the ones captured by the NLSY variable we constructed to measure individual's financial knowledge in the US. The questions related to each of the four concepts are listed in Appendix Table A.2. To construct the S&P FL Index, a person is defined as financially literate when she demonstrates understanding at least three out of the four financial concepts. Most importantly, the S&P FL Index is the most comprehensive measurement of financial literacy around the globe, an objective and representative measure of the average financial literacy in a given country and time that is comparable across countries.

Data limitations preclude us from using a measure of country-of-ancestry financial literacy from the past. The use of contemporaneous measures is not uncommon in the epidemiological literature (Giuliano 2007; Fernńdez & Fogli 2009; Nollenberger et al. 2016; Rodríguez-Planas 2018; among others). To the extent that culture evolves slowly over time (Roland 2004) using a contemporaneous measure is less problematic. Moreover, to the extent that individuals identify with a specific country of ancestry, the contemporaneous social norms of that country may matter as much as the ones from the past. To conduct sensitivity analysis and test alternative hypotheses, we also collected a battery of additional country-of-ancestry variables. As we explore the cultural components driving our main finding, we follow Haliassos et al. (2017), Falk, Becker, Dohmen, Enke, Huffman & Sunde (2016 and 2018), and Fuchs-Schündeln et al. (forthcoming) on which factors may well be determining consumers' incentives to acquire financial knowledge. Definitions, data sources and basic descriptive statistics for these country-of-ancestry variables are shown in Appendix Table A.3 and discussed in detail in Section 4.

Sample Restriction and Descriptive Statistics

The epidemiological approach focuses on second-generation immigrants (as opposed to first-generation) both to attenuate the possible effects of country-of-origin institutions and to mitigate the self-selection of specific individuals in the country of destination[12]. On one hand, first-generation immigrants may have been exposed to different institutional factors in the country of origin (such as the quality of the home-country educational system), which also affect the outcome of interest. On the other hand, individuals who decide to emigrate are clearly a selected sample, which may or may not be representative of the entire population in the destination country.

In this paper, we go one step further and use information collected by the NLSY on which country/region of ancestry the respondent self-identifies the most with. More specifically, we use the NLSY question: "What ethnic group do you identify with most?"[13]. This question was asked to all respondents and allowed them to give up to three possible answers in their order of preference. When available, we used the first and most preferred ethnic group to identify the respondent's country of ancestry. For those not responding to this first choice or responding that they were American, we used the second and, if need be, the third possible answers. This classification gave us country-of-ancestry information for a sample of 6,238 individuals, 3,455 of which from the NLSY79.

---

[12]Because of data limitations or reduced sample sizes, some studies focus on first-generation immigrants (Carroll et al. 1994; Furtado et al. 2013), or both first- and second-generation immigrants (Osili & Paulson 2008; Luttmer & Singhal 2011, Rodríguez-Planas 2018).

[13]This question was asked in 1979 for NLSY79 respondents and revised in 2002. For NLSY97 respondents, it was asked in 1999. In the public-use NLSY, there is no information on the country of birth of the parents.

Relative to studies focusing on second-generation immigrants, our approach has the advantage that it gives information on country of ancestry for a relatively large sample of individuals. Indeed, we only lost about 10 percent of the sample due to invalid answer to the ethnicity question, and an additional 7 percent because they self-identified as American or did not specify their ethnicity[14].

If the 17 percent of the NLSY sample we lose were less attached to the cultural heritage of their country of ancestry than individuals in our sample of analysis, our findings would lack external validity as they would not be representative of the effect of ancestry culture in the US population. However, because our identification strategy exploits variation in financial literacy across countries of ancestry, for such type of selection to jeopardize the internal validity of our estimates, we would need it to differentially affect individuals coming from high- versus low-levels of country-of-ancestry financial literacy. Unfortunately, we do not have access to the geo-coded information from NLSY, and hence we are unable to map immigrants' self-identified ancestry with the county of birth of their parents or grand-parents. However, we do observe whether the respondent and his or her parents were foreign born. Using this information, we compare the distribution of individuals in our sample who are first-generation immigrants, second-generation immigrants, and third- or higher-generation immigrants to that of individuals who were dropped from our analysis because they self-reported American or their ancestry information was missing. Our results are twofold. First, most individuals in the NLSY are second- or higher-generation immigrants. Indeed, only 2.8 percent of our sample and 2.2 percent of the sample we dropped were born abroad. Second, as much as 92 percent of those for whom we cannot assign ancestry outside of the US report being immigrants from third-generation or higher (relative to 87 percent of our sample) suggesting that their families have indeed been in the US for several generations and perhaps, they genuinely feel American or do not know their country of ancestry.

A different concern for the internal validity of our estimates may rise from the likely presence of recall bias in the NLSY ethnicity measure as individuals are more likely to report as preferred ethnicity the one that influences them the most or they like the most. While this may over-state our effects of culture on financial literacy, it is a minor concern in so far we are interested in capturing the set of norms and beliefs that people conform and associate with.

Importantly, our findings of the effects of culture on financial literacy are estimated for a nationally representative sample of the US population, which is unusual in the epidemiological studies that focus on first- or second-generation immigrants. Indeed, our sample is highly representative of the US population when compared to the ethnic distribution of the 1990 U.S. Census. Based on the Census (Pew Research Center), 8 percent of the population is Hispanic, 2.6 percent is Asian and 11,7 percent is Black relative to 8.3 percent of Hispanics, 2.1 percent of Asians, and 12.7 percent of African Americans in our sample.

Moreover, focusing on individuals whose families have been living in the US for multiple generations[15] partially offsets the concerns that first- and second-generation immigrants may be a self-selected immigrant population. Hence, to the extent that an effect of culture is found, our findings would underscore the long-lasting dimension of intergenerational transmission of culture (beyond one or two generations) on the US population.

Because the epidemiological approach proxies culture with outcome variables measured at the country of ancestry, underestimating the "true" effect of culture is common in this methodological approach because the culture of the country of residence is not accounted for. In as much as our objective is to identify whether ancestry culture determines financial literacy, what is relevant for our analysis is whether the association between ancestry culture and financial literacy is statistically

---

[14]In addition, we excluded from the analysis Native Americans, which are less than 3 percent of the sample.

[15]The NLSY does not collect information on the ancestor's time of arrival to the US.

significant, understanding that the economic interpretation of the coefficient represents a lower bound of the "true" effect of culture.

Individuals in our sample come from 26 different countries/regions of ancestry. Appendix Table A.4 displays the exact list of countries/regions of ancestry included in the analysis, the number of individuals in the NLSY identifying with each country/region and the information on financial literacy both in our sample and in the S&P survey. We restricted our sample to those countries/regions of ancestry with at least 5 cases of individuals identifying with them, a standard restriction in this literature (Fernández & Fogli 2006; Nollenberger et al. 2016). This restriction implied losing 3 individuals of Taiwanese ancestry and 4 of Vietnamese ancestry. We also excluded from our analysis those who identify with Hawaiian descent as no financial literacy is available for Hawaii in the S&P Survey[16]. In addition, for those ethnic groups that are not directly relatable to a specific country from the S&P Global FinLit Survey, we computed averages across countries. For instance, respondents declaring Arab descent were assigned as country-of-ancestry S&P FL Index the average score across the 15 Arab countries[17] in the S&P Survey. Similarly, individuals stating Latin or Hispanic descent were assigned a value corresponding to the average financial literacy score across 16 Latin American countries[18]; and those who reported being African American were assigned the average financial score across 31 countries in the African continent available in the S&P Survey[19].

The countries of ancestry in our sample cover four continents and different levels of development. The most common countries/regions of ancestry are Germany, the United Kingdom, Africa, Ireland, and Mexico. The last column in Appendix Table A.4 shows that there is considerable variation in the country-of-ancestry S&P FL Index with Haiti, India, the Philippines and Portugal showing levels of illiteracy as low as 18 to 25 percent of the population, and Denmark, Norway, and Sweden exhibiting levels of literacy as high as 71 percent.

Moving to the measure of financial literacy estimated using NLSY data (shown in column 4 in Appendix Table A.4), we observe that financial literacy is relatively low, in line with Lusardi & Mitchell (2014), with 43 percent of our sample responding correctly the three questions on financial knowledge. Interestingly, there is quite some variation in the level of financial literacy in the US by country/region of ancestry as it emerges clearly from column 4 in Appendix Table A.4. Less than one fifth of individuals of Haitian and Arab descent answer correctly the three financial literacy questions, while as many as 47 percent (or more) of those with Danish, Russian, Polish, Korean, English or German descent are financially knowledgeable.

Figure 1 plots the NLSY measure of financial literacy among our sample versus the S&P FL Index in the country/region of ancestry. We observe a positive correlation between the two indicators revealing that the greater financial literacy in the country ancestry, the higher the financial literacy observed in the US. Based on the raw data in Figure 1, the regression line has slope of 0.412 with a standard error of 0.12. The adjusted R^2 is 0.301.

---

[16]Those of Hawaiian descent represent less than 1 percent of the full sample.

[17]The 15 Arab countries in the S&P survey are: Jordan, Palestine, Lebanon, Mauritania, Algeria, Tunisia, Sudan, Somalia, Egypt, Saudi Arabia, Yemen, Bahrain, Kuwait, Iraq, and the United Arab Emirates.

[18]The 16 Latin American countries in the S&P survey are: Brasil, Argentina, Colombia, Peru, Venezuela, Chile, Guatemala, Ecuador, Bolivia, Dominican Republic, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, and Uruguay. The NLSY identifies those of Cuban descent, however, because no information is available in the S&P survey for Cuba, we assigned to them the average financial literacy score of Latin American countries.

[19]The 31 African countries in the S&P survey are: Algeria, Angola, Benin, Burundi, Burkina Faso, Botswana, Cameroon, Chad, Democratic Republic of Congo, Republic of Congo, Cote d'Ivoire, Gabon, Ghana, Kenya, Madagascar, Malawi, Mali, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

3 Empirical Strategy

To study the influence of culture on financial literacy, we estimate the following multivariate fixed-effects linear regression:

$$FL_{irjt} = \beta_0 + \beta_1 S\&PFLI_j + X'_{irjt}\beta_2 + Z'_j\beta_3 + \gamma_r + \gamma_t + \epsilon_{irjt}$$

, where FL_{irjt} is a dummy indicating whether individual i, living in US region r, from country/region of ancestry j, and interviewed in year t is financially literate. $S\&PFLI_j$ is the $S\&P$ FL Index, which is our proxy of social norms regarding financial knowledge, measured at the country/region of ancestry j. The vectors X_{irjt} and Z_j include a rich set of individual and country-of-ancestry covariates that will vary with the estimated specification. X_{irjt} controls for covariates known to be associated with financial literacy for reasons unrelated to culture. While our main analysis does not have the vector Z_j, we include it in the robustness checks. γ_r and γ_t are US region-of-residence and year fixed effects. As each cohort is interviewed in a different year, γ_t controls for both year of interview and differences across cohorts. γ_r controls for region characteristics that may be related to regional institutional differences associated with financial literacy. Standard errors are robust and clustered at the country/region-of-ancestry level, which is the source of identification. Because our outcome variable is a dummy variable, we conduct robustness checks with non-linear models (probit and logit). Results are robust to these alternative specifications as shown in Section 4.

Our coefficient of interest is β_1. It measures the association between the country-of-ancestry S&P FL Index and individual's financial knowledge in the US. If financial literacy in the US is influenced by ancestry culture, we expect β_1 to be positive and statistically significant, indicating that those individuals whose country/region of ancestry has a higher financial literacy rate are also more likely to be financially knowledgeable.

In Section 5, we explore which cultural components are behind this positive association by replacing the S&P FL Index with other ancestry-level measures used by the literature—Falk et al. (2016 and 2018), Haliassos et al. (2017) and Fuchs-Schündeln et al. (forthcoming)—to capture consumers' traits and preferences associated with financial behavior or knowledge.

While our β_1 estimates capture associations between culture regarding financial literacy and individual's financial knowledge and economic decisions in the US, because the respondents were (mostly) born in the US and have been American for several generations, it is unlikely that they have any impact on the financial literacy in the country of ancestry, minimizing potential reverse causality concerns. Moreover, the wealth of information in the NLSY and the large amount of country-of-ancestry controls we include in the analysis enables us to address concerns of potential omitted variable bias.

4 Does Culture Affect the Financial Literacy?

Table 2 shows results from estimating the empirical model presented in Section 3 by sequentially adding additional individual socio-demographic characteristics. The first row in Table 2 shows the coefficient of interest, β_1, in each estimated specification. It is noteworthy that in all specifications β_1 is positive and statistically significant at the 1 percent level, revealing a robust positive association between country/region-of-ancestry financial literacy and the individual's likelihood to respond correctly the three financial literacy questions in the NLSY. Below we discuss how the size of β_1 evolves as we sequentially add individual socio-demographic characteristics known to be

associated with individual's financial literacy in the US.

The specification in the first column only controls for the cohort dummy. We observe that, on average, the older cohort (NLSY79) is 10 percentage points more financially literate than the younger one. As 43 percent of the individuals in the NLYS are financially literate, the older cohort is 23 percent more likely to respond correctly the three financially literacy questions than the younger one.

Column 2 adds to the specification in column 1 regional dummies and whether the individual lives in a rural or urban area. Including regional dummies controls for economic and institutional regional differences that are correlated with financial literacy (such as differences across educational systems or lenders). Including a rural dummy takes into account the fact that individuals living in cities tend to be more financially literate than those living in rural areas (Klapper & Panos 2011). As there may be systematic differences in the ancestry of individuals living in different regions or urban density, we need to control for that in our specification. Specification in column 2 does so, and hence compares the financial knowledge of individuals with different countries/regions of ancestry who live in the same region and urban density. Controlling for these covariates has little effect on the size or precision of β_1. It also reveals that individuals living in the Northeast of the US (or in urban areas) are more likely to respond correctly the three financial literacy questions than those who live in other areas (or in rural areas).

As evidence shows that younger individuals and women are less financially knowledgeable (Lusardi et al. 2010; Lusardi & Mitchell 2014) and as there may be systematic cohort or gender differences across countries or regions of ancestry, column 3 presents estimates of a specification that includes age, age squared and a female dummy as controls. It reveals a well-established fact in the financial literacy literature: the large gender difference with women being less likely to answer financial literacy questions correctly than men. In our analysis, the gender difference is 14.7 percentage points or 34 percent of the average level of literacy. Importantly, adding age or gender leaves our coefficient of interest, $beta_1$, practically unchanged.

Much evidence has shown that more educated individuals are more likely to respond correctly the financial literacy questions (Christelis et al. 2010; Lusardi & Mitchell 2007, 2011b; Lusardi 2012; Mahdavi & Horton 2014). Because there may be systematic differences in the education level across ancestries, the specification in column 4 adds to the specification in column 3 controls for the individual's highest education level completed. Adding educational controls reduces the size of the coefficient β_1 from +0.374 to +0.248, implying that about one third of the relationship between culture and financial literacy is mediated through differences in educational attainment among individuals from different countries/regions-of-ancestry. To the extent that educational attainment is also affected by culture (Kahn & Ginther 2017), by including it as control we are limiting the avenues through which culture is allowed to operate. To put it differently, we may be over controlling. Nonetheless, to be in the conservative side, we prefer to keep education in our specifications from now on. Column 4 also shows that those whose highest educational achievement is an associate degree are more likely to respond correctly the three financial literacy questions than high-school graduates, but less than those who have at least a bachelors' degree.

Concerns that family structure differs systematically across countries/regions of ancestry and at the same time affects individuals' financial knowledge, and if not controlled for, may bias β_1 are addressed in the specification shown in column 5. Column 5 adds to the specification in column 4 marital status, number of children living in the household, and whether the individual is foreign born. While we find that divorced individuals and those born abroad are more financially knowledgeable[20], the association between country/region-of-ancestry financial literacy and

---

[20]The coefficient on foreign born is only statistically significantly different from zero at the 10 percent level.

financial knowledge in the US remains practically unchanged.

Columns 6 and 7 address concerns that our coefficient of interest β_1 may be picking up systematic differences across ancestries and the employment status of respondents or their mother's education or employment status when the respondents were teenagers. In either case, we find that including a dummy for whether the individual is working (column 6) or for maternal employment and highest educational level when the respondent was a teenager (column 7) has little effect on the size and precision of β_1. Consistent with others, we find that those employed are more likely to respond correctly the three financial literacy questions than those not working (Lusardi & Tufano 2015; Lusardi & Mitchell 2011b), and that having a mother with a college degree is positively correlated with financial literacy (Lusardi et al. 2010; Hira et al. 2013). Column 7 also reveals that maternal employment is negatively associated with financial literacy—although the latter link is only statistically significant at the 10 percent level.

Concerns that we may be picking up differences in wealth or parental financial sophistication when the respondent was a teenager are addressed in column 8. In this specification, we add to our preferred specification (showed in column 7) different controls that measure parents' wealth or financial sophistication when the respondent was a teenager. More specifically, we control for whether parents were homeowners, invested in stock, had debt or had savings when the respondent was 14 years old. Such detailed information on parents' wealth and financial sophistication when respondent was a teenager is only available for the NLSY97, hence, the sample is reduced considerably. Despite a smaller sample size, the association between culture and financial literacy remains pretty robust, suggesting that our coefficient of interest is not capturing differences in parental wealth or financial sophistication when the respondent was growing up. To put it differently, our estimate of culture remains even when we control for parental wealth and financial sophistication when respondent was growing up suggesting that what we are capturing are intergenerational transmission of beliefs as opposed to role models.

Economic Interpretation

Based on estimates from column 7, if an individual from a country/region of ancestry with "average" financial literacy had instead come from a country with financial literacy one-standard deviation above the mean, the likelihood of answering correctly to the three financial literacy questions from the NLSY would have increased by 3.96 percentage points, a 9.2 percent increase relative to the average financial literacy in the NLSY of 43 percent. This is calculated as ($\beta_1 = +0.233) * (S\&PFLIndex_{StDev} = 0.17) = +0.0396$ and $\frac{(+0.0396)}{(NLSYFinancialLiteracy_{mean}(0.43))} = +0.092$. To put this estimate into context, having a college degree is associated with a 68 percent (or 29.3 percentage point) increase in the likelihood of answering the three financial literacy questions in the NLSY (relative to a high-school graduate). Hence, the association between culture and financial knowledge is about 13.5 percent of the one between financial literacy and having a college degree.

Appendix Table A.5 conducts sensitivity analysis. The first column shows the coefficient of interest, β_1, for our preferred specification for comparison purposes. Columns 2 and 3 re-estimate the same specification using probit and logit, respectively. Using non-linear functional models does not affect the main finding: a positive and statistically significant association between financial literacy in the US and country/region-of-ancestry financial literacy. Column 4 re-estimates our preferred OLS specification without the population weights. This change increases slightly the size of β_1 from +0.233 to +0.291. Because Mahdavi & Horton (2014) find that financial literacy and father's education are positively associated, column 5 replaces mother's highest educational attainment and employment status when respondent was a teenager in our preferred specification

with father's highest educational attainment and employment status. Even though the sample is smaller because of item non-response on paternal education and employment status, the estimate of interest, β_1, remains practically unchanged. Similarly, the association of culture and financial literacy is robust to control for both mother and father's education and employment when respondent was a teenager (shown in column 6).

5   Robustness of the Results and Alternative Explanations

Unmeasured Human Capital

One concern is that the level of financial literacy in a given country reflects a more general attitude towards human capital accumulation, and that individuals coming from countries with high financial literacy are simply more informed about various aspects of life, including financial issues. This explanation would be quite distinct from the one proposed here as it would not rely on any cultural transmission of attitudes towards financial information, but on a more general (and more widely documented in previous work) intergenerational transmission of human capital. To address this concern, we have already shown above that our results hold even when we control for respondent's education as well as their parents' education, employment, wealth and financial sophistication when the respondent was a teenager. Nonetheless, to further explore the extent to which our results may be driven by unmeasured human capital, we conduct four additional checks in this sub-section of the paper.

First, we conduct several falsification checks, shown in Appendix Table A.6. To do so, we estimated our preferred specification replacing the left-hand-side variable with different dimensions of the respondent's human capital not directly related with financial literacy such as respondent's life satisfaction, educational attainment or employment status, and added to the specification controls for other ancestry-level general measures of human capital, namely GDP per capita, and numeracy and literacy rates. Evidence of a relationship between any of these alternative left-hand-side variables and country-of-ancestry financial literacy would suggest that country-of-ancestry financial literacy has a general explanatory power for respondents' outcomes related to human capital accumulation but not to financial literacy per se. None of the coefficients, β_1, in our falsification tests in Appendix Table A.6 are statistically significant suggesting that our main finding is not capturing other confounding factors such as unmeasured human capital.

Columns (2) and (3) in Appendix Table A.7 conduct a similar exercise as they show that there is no statistically significant relationship between the ancestry-level S&P financial literacy index and the respondent's financial behavior in the US once we control for both the respondent's financial literacy and other ancestry-level general measures of human capital. As beliefs on financial knowledge should only affect individuals' financial decisions through their own financial knowledge, not through other channels, we should not find a statistical significant relationship between ancestry-level financial literacy and individual's financial decisions, unless there are confounding factors that we are unable to control for.

Second, Appendix Table A.8 estimates our preferred specification with additional controls for respondent's cognitive and non-cognitive skills. We measure cognitive ability with the respondent's position in the IQ distribution, and non-cognitive measures with the respondent's interest in politics and contemporary issues, risk-taking preferences and personality traits when available (for instance, the locus of control and self-esteem measures are only available for the NLSY79 sample, whereas the adherence to rules and hard-working attitudes are reported only for the NLSY97 sample). Appendix Table A.8 shows that our coefficient of interest, β_1, remains practically unchanged (and

statistically significant at the 1 percent level) when controlling for non-cognitive skills (columns 3 to 6) suggesting that attitudes towards risk and non-cognitive skills (such as working hard, following the rules, locus of control or self-esteem) are not driving our findings. In contrast, we do observe a significant drop in β_1 when we control for IQ (shown in column 2). In this specification, β_1 drops from 0.233 in the baseline specification to 0.06 suggesting that about three-quarters of our association may be driven by intergenerational transmission of cognitive ability.

Third, we show that our results are robust to adding to our preferred specification controls for country-of-ancestry measures of quality and quantity of education. Table 3 shows that the association between country-of-ancestry financial literacy and respondents' financial literacy in the US remains positive and statistically significant at the 5 percent level or lower when we include different measures of ancestry-level quality or quantity of education, added one at a time. Specifications in columns 1 to 5 in Table 3 also show that country-of-ancestry literacy, numeracy and the PISA test score are positively associated with respondents' level of financial literacy in the US. Interestingly, once all ancestry-level human capital measures are added as controls (column 6), only the S&P FL index remains statistically significant—albeit measured with less precision as the sample size is reduced due to data limitations. In Table 3, our coefficient of interest, β_1, ranges between 0.074 and 0.230, implying that adding ancestry-level controls reduces our estimate by as much as two thirds (given that $\beta_1 = 0.233$ in our preferred specification). It is plausible that some of these ancestry-level human capital measures are also picking up complex social and educational processes that frequently accompany transformations in a society's degree of financial literacy. Indeed, Panel A in Appendix Table A.9 shows that these variables are correlated with each other. To the extent that human-capital differences across countries of ancestry also affect the cultural attitude towards financial choices in these societies, we may be over-controlling.

Finally, we adopt the approach in Oster (2019), which builds on Altonji, Elder & Taber (2005, 2008), to examine the robustness of our results to unobserved dimensions. Overall, this exercise, reported in Appendix Section B.1, suggests that concerns on unobservables biasing our findings are small.

Country-of-Ancestry Legal, Economic and Financial Development measures

It may be that our estimate, β_1, is capturing other country/region-of-ancestry characteristics that may be correlated with both country/region-of-ancestry financial literacy and individuals' own financial knowledge. For instance, it may well be that individuals from more economically developed countries of ancestries are more financially literate for reasons unrelated with the average financial literacy in the country of ancestry. To address such concerns, Table 4 re-estimates our preferred specification adding different country/region-of-ancestry legal, economic and financial development measures following Jappelli (2010) and Grohmann et al. (2018).

Our coefficient of interest, β_1, in Table 4 ranges between 0.169 and 0.356, implying that adding ancestry-level legal, economic and financial controls either reduces our estimate by at most one fourth or increases it by half depending on the specification (given that $\beta_1 = 0.233$ in our preferred specification). When only one ancestry-level control is added at a time (columns 1 through 9 in Table 4), we observe that country-of-ancestry GDP per capita, social contributions, and investment freedom are directly related to individuals' literacy level in the US, while capitalization is inversely related to individuals' literacy level. Because some of these measures are negatively correlated (shown in Panel B in Appendix Table A.9), once we include all of them in the specification in column 10 in Table 4, the size, sign and significance of some of these ancestry-level legal, economic

and financial measures changes. Importantly, our coefficient of interest, β_1, remains positive and statistically significant at the 1 percent level. The fact that β_1 is now higher in size than in our preferred specification is explained by the negative cross-correlations among the different ancestry-level controls. Because it is likely that some (or all) of these ancestry-level legal, economic and financial variables are affected by financial literacy, including them as additional controls may well introduce mediation bias unless one controls for all the variables that are correlated with both these mediators and the outcome or unless we assume sequential ignorability (which is untestable)[21]. Thus, while conducting such type of exercises are useful to check on the robustness of our estimate of interest (β_1), it probably makes more sense to focus on our preferred specification.

Further robustness checks are reported in Appendix Section B.2. They broadly confirm the size and significance of our culture estimate in different subsamples of the population. Moreover, Appendix Section B.3 explores to what extent the observed differences in respondents' financial literacy across countries of ancestry can be explained by systematic differences in their parents' financial behavior when youths were growing up. Our findings suggest that the mediation effect of parents' financial behavior when youths were growing up on financial literacy is negligible and that most of the relationship between ancestry-level financial literacy and respondent's financial literacy in the US is driven by the direct effect of our proxy for culture.

6   Cultural Components

This section explores which cultural factors in the country of ancestry may be driving our findings. To do so, we have taken two different approaches. First, we explore which component of the financial literacy index in the country of ancestry plays a bigger role in shaping the transmission of attitudes towards financial knowledge. As described in Appendix Table A.2, the S&P FL index is composed of four different questions on basic financial concepts: risk diversification, inflation, numeracy, and interest compounding. Each of this indices reflects the percentage of the adult population in a given country who answered correctly the corresponding financial literacy question. For example, in our sample, we observe that the shares of the population in the countries of ancestry responding correctly to the risk diversification and interest compounding questions are, on average, close to 10 percentage points lower than those answering correctly the questions on numeracy and inflation—0.469 and 0.478 versus 0.5674 and 0.549. Albeit being correlated with each other[22], these different measures capture different aspects of culture, and hence may have independent power to explain individuals' financial literacy. For instance, the risk diversification index captures beliefs and values related to the amount of risk that is reasonable to handle and the optimal portfolio diversification; the inflation index captures beliefs associated with risk of high inflation or deflation; the numeracy index captures beliefs associated with numeracy skills needed to estimate debt payments; and the interest compound index captures beliefs on returns on savings.

Table 5 in the paper estimates our preferred specification replacing the S&P FL index with the four different sub-components of the S&P FL index—one at a time in columns 1 to 4 and all together in column 5. Focusing on columns 1 to 4, we observe that, individually, each of the four country-of-ancestry sub-components is directly related to respondents' financial literacy in the United States (all four β_1 are positive and statistically significant at the 1 percent level). However, when we control for the four components in the same specification (shown in column 5), we observe that the components that matter the most are the share of adults in the country-of-ancestry who

---

[21]Sequential ignorability implies that we have fully accounted for any confounders that might have effects on both the respondent's financial knowledge and his or her ancestry-level of financial literacy (Imai et al. 2011).

[22]Correlations between the different measures of financial literacy range between 0.61 and 0.97 and are displayed in Appendix Table A.10.

answer correctly the questions on knowledge on risk diversification and interest compounding, underscoring the relevance of beliefs on the amount of risk that is reasonable to handle and the optimal portfolio diversification, as well as beliefs on returns on savings. Based on estimates from column 5, if an individual from a country/region of ancestry with "average" financial literacy on risk diversification (or interest compounding) had instead come from a country with financial literacy one-standard deviation above the mean, the likelihood of answering correctly the three financial literacy questions from the NLSY would have increased by 4.7 (or 4.5) percentage points, an 11 (or 10) percent increase relative to the average financial literacy in the NLSY of 43 percent.

Our second approach is to link respondents' financial literacy knowledge to attitudes in the country of ancestry (as in Luttmer and Singhal 2011 and Fuchs-Schündeln et al. forthcoming) instead of behaviors (as in Fernández and Fogli 2009 or Rodríguez-Planas 2018)[23]. Using several world-wide surveys containing rich arrays of attitudinal variables, we follow Fuchs-Schündeln and co-authors' strategy to more precisely isolate what cultural components explain variation across individuals' literacy rates. This implies re-estimating our preferred specification replacing the S&P financial literacy index with different attitudinal factors known to be related to financial behavior in the economic-psychologic literature.

From wave 5 of the World Value Survey (covering the year 2005-2009), we obtain the share of adults who are risk loving, and the share of adult population which declares having savings. From Hofstede's cultural dimensions (Hofstede, Hofstede & Minkov 2010), we use measures of indulgence, uncertainty avoidance, and long-term (versus short-term) orientation[24]. All three Hofstede's variables range between 0 and 100, with larger variables indicating more gratification coming from the desire to enjoy life, a higher need of predictability and security, and greater effort towards thriftiness and long-term goals, respectively. From the Global Preferences Survey (Falk et al. 2016 and 2018), we obtain measures of patience and risk taking. The patience measure is derived from the combination of responses on a series of five interdependent hypothetical binary choices between immediate and delayed financial rewards and the respondents' self-assessment regarding their willingness to wait. The measure of risk taking is derived from a series of binary choices between a fixed lottery, in which the individual could wins x or zero, and varying sure payments, y.

Table 6 shows the association between country-of-ancestry attitudes known to be related to household financial behavior and respondents' financial literacy in the US. Panel A shows a specification without covariates and panel B shows our preferred specification, which controls for individual and parental socio-demographic characteristics. We observe that a higher share of risk-loving adults in the country of ancestry is negatively related to respondents' financial literacy. In addition, we find that higher ancestry-level long-term orientation and patience is positively related with respondents' financial literacy. All three estimates are statistically significant at the 1 percent level, regardless of whether we control for observables or not. A one standard deviation increase in the long-term orientation motive corresponds to an increase in the financial literacy rate of 2.56 percentage points. Increasing the patience by one standard deviation is associated with an increase in the financial literacy rate of 4.4 percentage points and decreasing the share of risk-loving adults by one standard deviation increases financial literacy in the US by 3.5 percentage points. Given an average individual financial literacy of 43 percent, this corresponds to increases of 6 percent, 10

---

[23]Fuchs-Schündeln et al. (forthcoming) main focus on attitudinal factors is due to data limitations in their behavioral explanatory variable: households' saving rates.

[24]Social psychologist Geert Hofstede proposed several measures of cultural dimension that he derived from a survey on attitudes on a sample of IBM employees collected between 1967 and 1973 (Hofstede 2001). Since then, these measures have been replicated and widely used, and are considered to be related to household financial behavior (e.g. Fuchs-Schündeln et al. (forthcoming); Haliassos et al. 2017; Grohmann et al. 2018).

percent and 8 percent, respectively.

7 Conclusion

Investigating the factors that contribute to individuals' differences in the understanding of financial issues is important to reduce inequalities and to plan interventions targeting the right population groups, both across and within countries. A sizeable body of evidence in the economic literature shows how financially literate individuals are better equipped to deal with daily decisions on a wide array of areas, such as savings, assets and wealth accumulation, portfolio diversification and retirement planning—see Lusardi & Mitchell (2014) for a review of the main results.

Using a nationally representative sample of individuals in the US, this paper explores the role of social norms regarding the relevance to gather information to make informed financial decisions on the likelihood to respond correctly to questions regarding inflation, risk diversification, and interest rate. We find a positive association between ancestry-level financial knowledge and respondent's financial literacy in the US even after we control for a large and rich set of economic and demographic characteristics known to affect financial knowledge, such as individual's education, family composition, employment, and parental education, employment status, wealth and financial sophistication while the respondent was a teenager, among others. Our results underscore the relevance of intergenerational transmission of beliefs on individual's financial knowledge. In particular, we find that respondents from countries of ancestry that value more patience, long-term orientation and risk aversion exhibit significantly higher financial literacy in the US. In addition, we also find that financial literacy on risk diversification and interest compounding are the most relevant ancestry-level components of financial literacy. Our findings shed light on how financial literacy is acquired, underscoring the need to account for individual's cultural background when designing policies aiming at teaching individuals how to make financially sound decisions.

Figure 1: Home-Country Financial Literacy
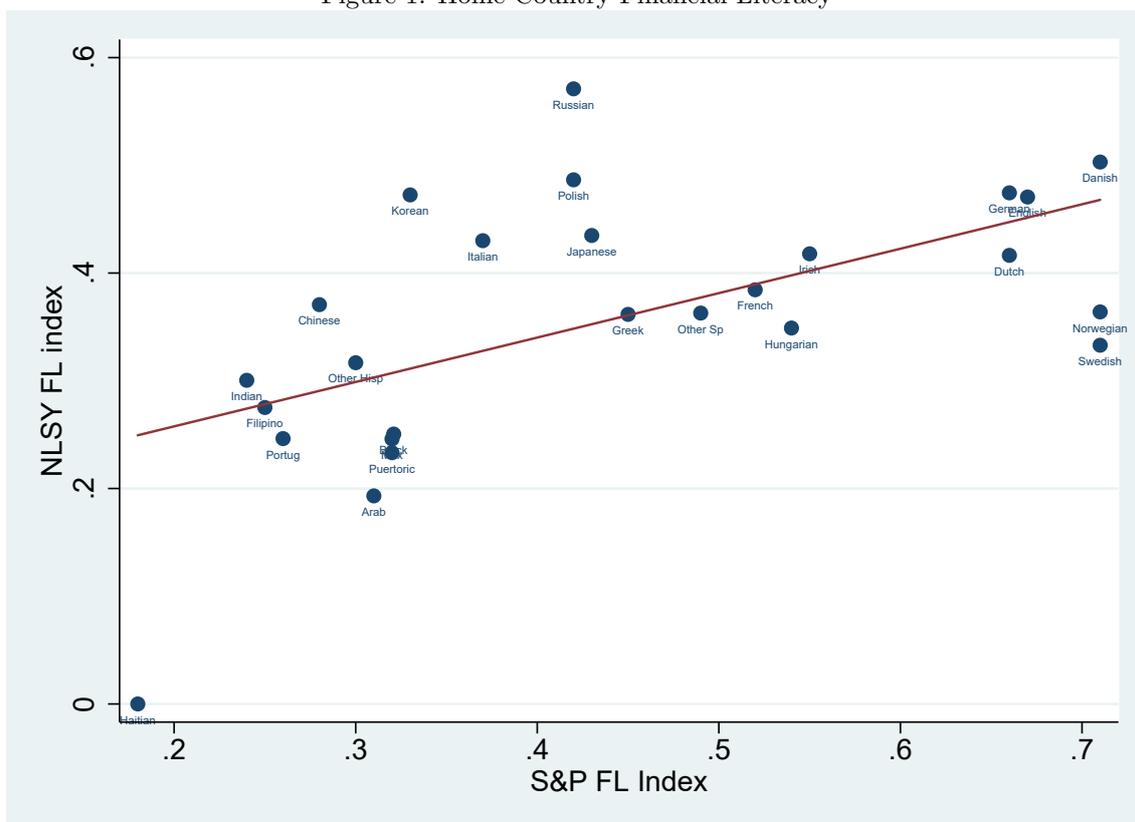
Notes: On the x-axis, we plot the percentage of adult population classified as financial literate in each country, according to the S&P financial literacy index. The NLSY financial literacy index refers to the percentage of NLSY respondents answering correctly the three interest-inflation-risk diversification questions, collapsed at the ethnic group level. Results are weighted.

Table 1: NLSY Financial Literacy Questions

Question	Possible answers
Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. 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?	more, the same, less, don't know; refused to answer
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, don't know; refused to answer
Suppose you had 100 dollars in a savings account and the interest rate was 2% per year. After 5 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, don't know; refused to answer

Source: NLSY79 and NLSY97.

Table 2: Effect of Country-of-Ancestry Financial Literacy

	Full Sample:							NLSY97:
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S&P FL Index	0.344***	0.367***	0.374***	0.248***	0.255***	0.247***	0.233***	0.247***
	(0.104)	(0.095)	(0.088)	(0.063)	(0.056)	(0.053)	(0.053)	(0.054)
NLSY79	0.099***	0.100***	0.007	0.050	0.002	0.005	-0.003	
	(0.010)	(0.011)	(0.101)	(0.087)	(0.080)	(0.082)	(0.082)	
Northeast		0.050***	0.047**	0.030*	0.032*	0.028*	0.028*	-0.10
		(0.017)	(0.018)	(0.016)	(0.015)	(0.015)	(0.014)	(0.020)
Northcentral		0.027	0.021	0.027	0.028	0.026	0.027	0.023
		(0.031)	(0.031)	(0.028)	(0.029)	(0.028)	(0.027)	(0.019)
West		0.017	0.015	0.018	0.018	0.018	0.014	-0.010
		(0.014)	(0.015)	(0.015)	(0.014)	(0.014)	(0.015)	(0.027)
Rural		-0.073***	-0.074***	-0.038***	-0.039***	-0.038***	-0.035**	-0.036
		(0.013)	(0.014)	(0.012)	(0.013)	(0.013)	(0.013)	(0.023)
Age			0.017	0.014	0.012	0.012	0.014*	-0.269
			(0.011)	(0.008)	(0.008)	(0.008)	(0.008)	(0.263)
Age × age			-0.000*	-0.000*	-0.000*	-0.000*	-0.000**	0.005
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.005)
Female			-0.147***	-0.160***	-0.163***	-0.159***	-0.158***	-0.210***
			(0.013)	(0.015)	(0.016)	(0.017)	(0.016)	(0.025)
Education:								
Junior College				0.096***	0.096***	0.091***	0.086***	0.044
				(0.024)	(0.025)	(0.025)	(0.024)	(0.032)
College				0.311***	0.312***	0.306***	0.293***	0.276***
				(0.009)	(0.010)	(0.010)	(0.010)	(0.020)
College+				0.344***	0.343***	0.334***	0.316***	0.307***
				(0.030)	(0.029)	(0.030)	(0.031)	(0.052)
Married					0.003	0.006	0.007	0.032*
					(0.016)	(0.016)	(0.016)	(0.017)
Divorced					0.070**	0.068**	0.071**	0.053
					(0.033)	(0.033)	(0.033)	(0.045)
Family size					0.002	0.001	0.001	-0.014
					(0.004)	(0.004)	(0.004)	(0.009)
Born abroad					0.096*	0.093*	0.092*	0.102*
					(0.047)	(0.048)	(0.046)	(0.055))
Employed						0.053***	0.055***	0.020
						(0.018)	(0.018)	(0.022)
Mother education:								
Some college							0.039	0.038
							(0.034)	(0.033)
College+							0.071***	0.074**
							(0.016)	(0.030)
Mother employed							-0.023*	-0.030
							(0.013)	(0.024)
Parents own a house								0.009
								(0.018)
Parents own stocks								0.061***
								(0.014)
Parents have debts								0.014
								(0.018)
Parents have savings								0.027*
								(0.015)
N	6,238	6,238	6,238	6,238	6,238	6,238	6,238	2,561
r2	0.020	0.026	0.048	0.135	0.138	0.139	0.142	0.158

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Column (8) performs the analysis only on the young cohort sample because of data availability and control for characteristics of the parents when respondent was 14 years old. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Effect of Country-of-Ancestry Financial Literacy After Controlling for Country-of-Ancestry Characteristics: Human Capital Variables

	(1) Literacy	(2) Numeracy	(3) PISA 2012	(4) Secondary Enrollment (%)	(5) Per Student Expenditures	(6) All
S&P FL Index	0.134**	0.101**	0.113**	0.186***	0.230***	0.074*
	(0.055)	(0.048)	(0.050)	(0.064)	(0.059)	(0.040)
Literacy Rate	0.279***					-0.156
	(0.074)					(0.234)
Numeracy Rate		0.001***				0.000
		(0.000)				(0.001)
PISA 2012			0.001***			0.001
			(0.000)			(0.001)
Enrollment Secondary Education (%)				0.001		-0.000
				(0.000)		(0.001)
Per Student Government Expenditure					0.000	0.000
					(0.001)	(0.000)
N	6139	6116	6074	6219	5715	5584
r2	0.144	0.143	0.142	0.143	0.142	0.144
Age, age squared	X	X	X	X	X	X
Gender	X	X	X	X	X	X
Regions	X	X	X	X	X	X
Family variables	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X	X
Survey year	X	X	X	X	X	X
Weights	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Effect of Country-of-Ancestry Financial Literacy After Controlling for Country-of-Ancestry Characteristics: Economic and Financial Development Variables

	(1) GDP	(2) Social Contributions	(3) Credit to GDP ratio	(4) Capitalization	(5) Ease of Business index	(6) Investment Freedom	(7) Business Freedom	(8) Legal Rights	(9) Credit Info	(10) All
S&P FL Index	0.169***	0.195***	0.311***	0.278***	0.185**	0.169***	0.247***	0.342***	0.226***	0.356***
	(0.058)	(0.049)	(0.072)	(0.055)	(0.084)	(0.056)	(0.058)	(0.071)	(0.071)	(0.117)
log(GDP/capita)	0.029**									-0.134**
	(0.014)									(0.054)
Social Contributions		0.001***								0.001**
		(0.000)								(0.000)
Credit to GDP ratio			-0.032							0.040
			(0.022)							(0.030)
Capitalization				-0.028***						0.008
				(0.009)						(0.021)
Ease of Business Index					0.001					0.002
					(0.001)					(0.002)
Investment Freedom						0.001*				0.002**
						(0.000)				(0.001)
Business Freedom							-0.000			0.004**
							(0.001)			(0.002)
Legal Rights								-0.006		-0.028***
								(0.004)		(0.009)
Credit Info									0.001	0.012*
									(0.008)	(0.006)
Constant	-0.223	-0.137	-0.177	-0.136	-0.162	-0.160	-0.110	-0.152	-0.128	-0.184
	(0.161)	(0.167)	(0.169)	(0.171)	(0.174)	(0.169)	(0.172)	(0.161)	(0.169)	(0.169)
N	6,238	6,238	6,182	6,161	6,238	6,166	6,166	6,161	6,161	6,105
r2	0.142	0.142	0.141	0.142	0.142	0.142	0.142	0.142	0.142	0.143
Age, age squared	X	X	X	X	X	X	X	X	X	X
Gender	X	X	X	X	X	X	X	X	X	X
Regions	X	X	X	X	X	X	X	X	X	X
Family variables	X	X	X	X	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X	X	X	X	X	X
Survey year	X	X	X	X	X	X	X	X	X	X
Weights	X	X	X	X	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

20

Table 5: Effect of Country-of-Ancestry Financial Literacy: S&P Index Sub-components

	(1)	(2)	(3)	(4)	(5)
S&P Risk Diversification	0.195***				0.262***
	(0.046)				(0.084)
S&P Inflation		0.318***			0.09
		(0.032)			(0.028)
S&P Numeracy			0.315***		0.284
			(0.036)		(0.282)
S&P Interest Compounding				0.230***	-0.344***
				(0.064)	(0.121)
N	6,238	6,238	6,238	6,238	6,238
r2	0.142	0.141	0.142	0.141	0.143
Age, age squared	X	X	X	X	X
Gender	X	X	X	X	X
Regions	X	X	X	X	X
Family variables	X	X	X	X	X
Foreign born	X	X	X	X	X
Educational levels	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X
Survey Year	X	X	X	X	X
Weights	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. The independent variables of interest are the country-level percentage of adult population who answered correctly the corresponding financial literacy question in the *S&P* survey. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Individual Financial Literacy and Country-of-Ancestry Attitudes

Panel A: without controls

	(1) Propensity to Save	(2) Risk Propensity	(3) Uncertainty Avoidance	(4) Long-term Orientation	(5) Indulgence	(6) Patience	(7) Risk-taking
Cultural Variable							
Source	WVS	WVS	Hofstede	Hofstede	Hofstede	GVS	GVS
Marginal effect of Cultural Variable	0.320 (0.279)	−0.379** (0.168)	−0.001 (0.001)	0.002*** (0.001)	−0.001 (0.001)	0.191*** (0.051)	−0.172 (0.217)
N	3741	5039	6161	6233	6233	5442	5442
r2	0.004	0.007	0.001	0.008	0.002	0.012	0.002
Age, age squared							
Gender							
Regions							
Family variables							
Foreign born							
Educational levels							
Mothers' characteristics							
Weights	X	X	X	X	X	X	X

Panel B: with all baseline controls

	(1) Propensity to Save	(2) Risk Propensity	(3) Uncertainty Avoidance	(4) Long-term Orientation	(5) Indulgence	(6) Patience	(7) Risk-taking
Cultural Variable							
Source	WVS	WVS	Hofstede	Hofstede	Hofstede	GVS	GVS
Marginal effect of Cultural Variable	0.229 (0.138)	−0.223*** (0.070)	−0.000 (0.000)	0.001*** (0.000)	−0.001 (0.001)	0.105*** (0.022)	−0.090 (0.096)
N	3741	5039	6161	6233	6233	5442	5442
r2	0.148	0.140	0.139	0.140	0.139	0.142	0.140
Age, age squared	X	X	X	X	X	X	X
Gender	X	X	X	X	X	X	X
Regions	X	X	X	X	X	X	X
Family variables	X	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X	X	X
Weights	X	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered correctly the three NLSY financial literacy questions. Each column controls for a different country-level cultural variable, indicated on top of the column. Panel A reports estimation result without covariates, Panel B adds all covariates as in column (7) of Table 2. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

References

Almond, D., L. Edlund, and K. Milligan (2013). Son preference and the persistence of culture: evidence from south and east asian immigrants to canada. *Population and Development Review 39*(1), 75–95.

Altonji, J. G., T. E. Elder, and C. R. Taber (2005). Selection on observed and unobserved variables: Assessing the effectiveness of catholic schools. *Journal of political economy 113*(1), 151–184.

Altonji, J. G., T. E. Elder, and C. R. Taber (2008). Using selection on observed variables to assess bias from unobservables when evaluating swan-ganz catheterization. *American Economic Review 98*(2), 345–50.

Antecol, H. (2000). An examination of cross-country differences in the gender gap in labor force participation rates. *Labour Economics 7*(4), 409–426.

Arrondel, L., M. Debbich, and F. Savignac (2012). Stockholding and financial literacy in the french population. *International Journal of Social Sciences and Humanity Studies 4*(2), 285–294.

Atkinson, A. and F.-A. Messy (2011). Assessing financial literacy in 12 countries: an oecd/infe international pilot exercise. *Journal of Pension Economics & Finance 10*(4), 657–665.

Bogaard, H. and C. Pirinsky (2011). Cultural heritage and financial development. Technical report, Working paper.

Brown, M., J. Grigsby, W. Van Der Klaauw, J. Wen, and B. Zafar (2016). Financial education and the debt behavior of the young. *The Review of Financial Studies 29*(9), 2490–2522.

Brown, M., C. Henchoz, and T. Spycher (2018). Culture and financial literacy. *Journal of Economic Behavior and Organization 150*, 62–85.

Bureau of Labor Statistics, U.S. Department of Labor. (2019a). *National Longitudinal Survey of Youth 1979 cohort, 1979-2016 (rounds 1-27)*. Bureau of Labor Statistics, U.S. Department of Labor. Center for Human Resource Research (CHRR), The Ohio State University.

Bureau of Labor Statistics, U.S. Department of Labor. (2019b). *National Longitudinal Survey of Youth 1997 cohort, 1997-2017 (rounds 1-18)*. Bureau of Labor Statistics, U.S. Department of Labor. Center for Human Resource Research (CHRR), The Ohio State University.

Carroll, C. D., B.-K. Rhee, and C. Rhee (1994). Are there cultural effects on saving? some cross-sectional evidence. *The Quarterly Journal of Economics 109*(3), 685–699.

Carroll, C. D., B.-K. Rhee, and C. Rhee (1999). Does cultural origin affect saving behavior? evidence from immigrants. *Economic Development and Cultural Change 48*(1), 33–50.

Christelis, D., T. Jappelli, and M. Padula (2010). Cognitive abilities and portfolio choice. *European Economic Review 54*(1), 18–38.

Costa-Font, J., P. Giuliano, and B. Ozcan (2018). The cultural origin of saving behavior. *PloS one 13*(9).

de Bassa Scheresberg, C. (2013). Financial literacy and financial behavior among young adults: Evidence and implications. *Numeracy 6*(2), 5.

Falk, A., A. Becker, T. Dohmen, B. Enke, D. Huffman, and U. Sunde (2018). Global evidence on economic preferences. *The Quarterly Journal of Economics 133*(4), 1645–1692.

Falk, A., A. Becker, T. J. Dohmen, D. Huffman, and U. Sunde (2016). The preference survey module: A validated instrument for measuring risk, time, and social preferences.

Fernández, R. (2008). Culture and economics. *The New Palgrave Dictionary of Economics: Volume 1–8*, 1229–1236.

Fernández, R. and A. Fogli (2006). Fertility: The role of culture and family experience. *Journal of the European economic association 4*(2-3), 552–561.

Fernandez, R. and A. Fogli (2009). Culture: An empirical investigation of beliefs, work, and fertility. *American economic journal: Macroeconomics 1*(1), 146–77.

Fort, M., F. Manaresi, and S. Trucchi (2016). Adult financial literacy and households' financial assets: the role of bank information policies. *Economic Policy 31*(88), 743–782.

Fuchs-Schündeln, N., P. Masella, and H. Paule-Paludkiewicz (2017). Cultural determinants of household saving behavior. *Journal of Money, Credit and Banking*.

Furtado, D., M. Marcén, and A. Sevilla (2013). Does culture affect divorce? evidence from european immigrants in the united states. *Demography 50*(3), 1013–1038.

Giuliano, P. (2007). Living arrangements in western europe: Does cultural origin matter? *Journal of the European Economic Association 5*(5), 927–952.

González, L., N. Rodríguez-Planas, et al. (2018). Gender norms and intimate partner violence. *Economics Working Paper Series, Department of Economics and Business, Universitat Pompeu Fabra 1620*.

Gorbachev, O. and M. J. Luengo-Prado (2019). The credit card debt puzzle: The role of preferences, credit access risk, and financial literacy. *Review of Economics and Statistics 101*(2), 294–309.

Grohmann, A., T. Klühs, and L. Menkhoff (2018). Does financial literacy improve financial inclusion? cross country evidence. *World Development 111*, 84–96.

Guiso, L., P. Sapienza, and L. Zingales (2004). The role of social capital in financial development. *American economic review 94*(3), 526–556.

Guiso, L., P. Sapienza, and L. Zingales (2006). Does culture affect economic outcomes? *Journal of Economic perspectives 20*(2), 23–48.

Haliassos, M., T. Jansson, and Y. Karabulut (2017). Incompatible european partners? cultural predispositions and household financial behavior. *Management Science 63*(11), 3780–3808.

Hicks, R. and D. Tingley (2011). Causal mediation analysis. *The Stata Journal 11*(4), 605–619.

Hilgert, M. A., J. M. Hogarth, and S. G. Beverly (2003). Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull. 89*, 309.

Hira, T. K., M. F. Sabri, and C. Loibl (2013). Financial socialization's impact on investment orientation and household net worth. *International Journal of Consumer Studies 37*(1), 29–35.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.

Hofstede, G., G. J. Hofstede, and M. Minkov (2010). Cultures and organizations: Software of the mind. revised and expanded 3rd edition. *N.-Y.: McGraw-Hill*.

Imai, K., L. Keele, D. Tingley, and T. Yamamoto (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review 105*(4), 765–789.

Jappelli, T. (2010). Economic literacy: An international comparison. *The Economic Journal 120*(548), F429–F451.

Jappelli, T. and M. Padula (2013). Investment in financial literacy and saving decisions. *Journal of Banking & Finance 37*(8), 2779–2792.

Kahn, S. and D. Ginther (2017). Women and science, technology, engineering, and mathematics (stem): Are differences in education and careers due to stereotypes, interests, or family. In *The Oxford Handbook of Women and the Economy*, pp. 1–39. New York: Oxford University Press.

Kimball, M. and T. Shumway (2006). Investor sophistication, and the participation, home bias, diversification, and employer stock puzzles. *Unpublished Manuscript, University of Michigan*.

Klapper, L., A. Lusardi, and P. Van Oudheusden (2015). Financial literacy around the world. *World Bank. Washington DC: World Bank*.

Klapper, L. and G. A. Panos (2011). Financial literacy and retirement planning: the russian case. *Journal of Pension Economics & Finance 10*(4), 599–618.

Lusardi, A. (2012). Numeracy, financial literacy, and financial decision-making. *Numeracy: Advancing Education in Quantitative Literacy 5*(1).

Lusardi, A. and O. S. Mitchell (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of monetary Economics 54*(1), 205–224.

Lusardi, A. and O. S. Mitchell (2008). Planning and financial literacy: How do women fare? *American Economic Review 98*(2), 413–17.

Lusardi, A. and O. S. Mitchell (2011a). Financial literacy and planning: Implications for retirement well-being. In *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, pp. 17–39. Oxford and New York: Oxford University Press.

Lusardi, A. and O. S. Mitchell (2011b). Financial literacy around the world: An overview. In *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, pp. 1–15. Oxford and New York: Oxford University Press.

Lusardi, A. and O. S. Mitchell (2014). The economic importance of financial literacy: Theory and evidence. *Journal of economic literature 52*(1), 5–44.

Lusardi, A., O. S. Mitchell, and V. Curto (2010). Financial literacy among the young. *Journal of consumer affairs 44*(2), 358–380.

Lusardi, A. and P. Tufano (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics & Finance 14*(4), 332–368.

Luttmer, E. F. and M. Singhal (2011). Culture, context, and the taste for redistribution. *American Economic Journal: Economic Policy 3*(1), 157–79.

Mahdavi, M. and N. J. Horton (2014). Financial knowledge among educated women: Room for improvement. *Journal of Consumer Affairs 48*(2), 403–417.

Marcén, M. and M. Morales (2018). The effect of culture on home-ownership. *Journal of Regional Science*.

Nollenberger, N., N. Rodríguez-Planas, and A. Sevilla (2016). The math gender gap: The role of culture. *American Economic Review 106*(5), 257–61.

OECD. (2005). *Improving financial literacy: analysis of issues and policies*. Paris and Washington, D.C.: Organisation for Economic Co-operation and Development.

Osili, U. O. and A. L. Paulson (2008). Institutions and financial development: Evidence from international migrants in the united states. *The Review of Economics and Statistics 90*(3), 498–517.

Oster, E. (2019). Unobservable selection and coefficient stability: Theory and evidence. *Journal of Business & Economic Statistics 37*(2), 187–204.

Pew (2019, June). Statistical portrait of the foreign-born population in the united states, 1960-2017.

Rodríguez-Planas, N. (2018). Mortgage finance and culture. *Journal of Regional Science 58*(4), 786–821.

Rodríguez-Planas, N. and N. Nollenberger (2018). Let the girls learn! it is not only about math... it's about gender social norms. *Economics of Education Review 62*, 230–253.

Rodríguez-Planas, N. and A. Sanz-de Galdeano (2019). Intergenerational transmission of gender social norms and teenage smoking. *Social Science & Medicine 222*, 122–132.

Roland, G. (2004). Understanding institutional change: Fast-moving and slow-moving institutions. *Studies in comparative international development 38*(4), 109–131.

Seto, S. and V. L. Bogan (2013). Immigrant household investment behavior and country of origin: a study of immigrants to the united states. *International Journal of Finance & Economics 18*(2), 128–158.

Van Rooij, M., A. Lusardi, and R. Alessie (2011). Financial literacy and stock market participation. *Journal of Financial Economics 101*(2), 449–472.

Warnock, V. C. and F. E. Warnock (2008). Markets and housing finance. *Journal of Housing economics 17*(3), 239–251.

WVS (2014). World values survey: Round five - country-pooled datafile version v2018-09-12.

Appendices

Appendix A

Table A.1: Summary of Key Variables

	Mean	Std.	Min	Max	N
NLSY FL Index	0.43	0.50	0	1	6,238
Survey 1979 (older cohort)	0.55	0.50	0	1	6,238
Age	43.96	12.14	22	60	6,238
Female	0.50	0.50	0	1	6,238
Family size	2.70	1.33	1	11	6,238
Marital status:					
Single	0.19	0.39	0	1	6,238
Married	0.15	0.36	0	1	6238
Divorced	0.66	0.47	0	1	6,238
Degree:					
at most High School	0.56	0.50	0	1	6,238
Junior College	0.10	0.30	0	1	6,238
College	0.23	0.42	0	1	6,238
College+	0.11	0.31	0	1	6,238
Employed	0.81	0.39	0	1	6,238
Northeast	0.18	0.38	0	1	6,238
Northcentral	0.31	0.46	0	1	6,238
West	0.19	0.39	0	1	6,238
South	0.32	0.46	0	1	6,238
Rural	0.24	0.43	0	1	6,238
Urban	0.76	0.43	0	1	6,238
Born Abroad	0.03	0.16	0	1	6,238
Mother education:					
at most High School	0.76	0.43	0	1	6,238
Some College	0.12	0.33	0	1	6,238
College+	0.12	0.32	0	1	6,238
Mother employed	0.59	0.49	0	1	6,238
Father education:					
at most High School	0.68	0.47	0	1	5,743
some College	0.12	0.32	0	1	5,743
College+	0.95	0.23	0	1	5,743
Father employed	0.95	0.23	0	1	5,132
Probability of bankruptcy	0.14	0.35	0	1	6,201
Owning stocks	0.21	0.40	0	1	5,834
Owning bonds	0.31	0.46	0	1	3,455
Owning a credit card	0.63	0.48	0	1	4,897
Delay in loan payment	0.29	0.45	0	1	3,021
Life Satisfaction	0.64	0.48	0	1	5,892
IQ					
1_{st} quartile	0.25	0.43	0	1	6,118
2_{nd} quartile	0.25	0.43	0	1	6,118
3_{rd} quartile	0.25	0.43	0	1	6,118
4_{th} quartile	0.25	0.43	0	1	6,118
Years of Education	13.97	2.58	4	20	6,217
Risk-Taker(1)	5.04	2.52	0	10	6,041
Risk-Taker(2)	3.51	2.80	0	10	6,184
Interested in News	4.53	1.98	1	7	3,431
Interested in Politics	2.56	1.15	1	5	3,279
Self-esteem	5154.18	3572.14	3	9999	3,242
Locus of Control	8.40	2.39	4	16	3,453
Hard Worker	1.84	1.37	1	7	2,754
Following Rules	4.66	1.74	1	7	2,754
Parental wealth/financial sophistication:					
Owning a house	0.75	0.43	0	1	2,622
Having debt	0.59	0.49	0	1	2,744
Having savings	0.74	0.44	0	1	2,754
Owning stocks	0.21	0.41	0	1	2,742

Notes: The variation in sample size for some of the variables is due to certain items being present only in NLSY79 or NLSY97. Estimates are weighted to represent the US population.

Table A.2: Financially Literacy Questions in the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey

Concept	Question	Possible answers
Risk Diversification	*Suppose you have some money. Is it safer to put your money into one business or investment, or to put your money into multiple businesses or investments?*	one business or investment; multiple businesses or investments; don't know; refused to answer
Inflation	*Suppose over the next 10 years the prices of the things you buy double. If your income also doubles, will you be able to buy less than you can buy today, the same as you can buy today, or more than you can buy today?*	less; the same; more; don't know; refused to answer
Compound Interest	*Suppose you put money in the bank for two years and the bank agrees to add 15 percent per year to your account. Will the bank add more money to your account the second year than it did the first year, or will it add the same amount of money both years?*	more; the same; don't know; refused to answer
	Suppose you had 100 US dollars in a savings account and the bank adds 10 percent per year to the account. How much money would you have in the account after 5 years if you did not remove any money from the account?	more than 150 dollars; exactly 150 dollars; less than 150 dollars; don't know; refused to answer
Numeracy	*Suppose you need to borrow 100 US dollars. Which is the lower amount to pay back: 105 US dollars or 100 US dollars plus three percent?*	105 US dollars; 100 US dollars plus three percent; don't know; refused to answer

Notes: Source: The 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey.

Table A.3: Summary of Country-Level Variables

Variable	Definition and Source	Mean	SD
S&P FL Index	Percentage of adults that answer correctly at least 3 out of 4 questions from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey. Source: Klapper et al. (2015).	0.44	0.17
S&P Risk Diversification	Percentage of adults that answer correctly the risk diversification question from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey. Source: Klapper et al. (2015).	0.47	0.18

Continues on next page

28

Variable	Definition and Source	Mean	SD
S&P Inflation	Percentage of adults that answer correctly the inflation question from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey. Source: Klapper et al. (2015).	0.57	0.12
S&P Compound Interest	Percentage of adults that answer correctly the compound interest question from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey. Source: Klapper et al. (2015).	0.48	0.13
S&P Numeracy	Percentage of adults that answer correctly the numeracy question from the 2014 Standard & Poor's Ratings Services Global Financial Literacy Survey. Source: Klapper et al. (2015).	0.55	0.11
Literacy Rate	Percentage of the population age 15 and above who can read and write a short, simple statement on their everyday life. This indicator is calculated by dividing the number of literates aged 15 years and over by the corresponding age group population and multiplying the result by 100. Averaged over the period 2000-2007 and the result was formatted as a number between 0 and 1. Source: World Bank Development Indicators, CIA factbook and `https://world.bymap.org/LiteracyRates.html`.	0.92	0.13
Numeracy Rate	Average score of 15-year-old students on the PISA mathematics scale. The metric for the overall mathematics scale is based on a mean for OECD countries of 500 points and a standard deviation of 100 points. The test score is the average of the 2012 and 2015 tests. Source: World Bank Development Indicators.	475.96	57.18
PISA 2012	Average score of 15-years-old students on the PISA 2012 reading scale. The metric for the overall mathematics scale is based on a mean for OECD countries of 500 points and a standard deviation of 100 points. Source: OECD.	483.86	55.94
Secondary Enrollment	Ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Source: UNESCO Institute for Statistics.	101.43	19.10

Variable	Definition and Source	Mean	SD
Per student expenditures	General government expenditure on education (current, capital, and transfers) expressed as a percentage of total general government expenditure on all sectors (including health, education, social services, etc.). Source: UNESCO Institute for Statistics.	22.24	18.65
log (GDP per capita)	PPP Converted GDP Per Capita (Laspeyres), derived from growth rates of c, g, i, at 2005 constant prices measured in 2005 International $ per person; averaged over the period 2000–2005 and then its log is taken. Source: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.1 Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, November 2012.	3.99	0.81
Social Contribution Rate	Social contributions (% of revenues) include social security contributions by employees, employers, and self-employed individuals, and other contributions whose source cannot be determined. They also include actual or imputed contributions to social insurance schemes operated by governments. The values between 2006 and 2015 were averaged. Source: World Bank Development Indicators	18.39	15.77
Legal Rights	Strength of legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. The index ranges from 0 to 10, with higher scores indicating that these laws are better designed to expand access to credit. We use the 2004–2005 average index. Source: Warnock & Warnok (2008)	4.77	2.14

Table A.3 – *Continues from previous page*

Variable	Definition and Source	Mean	SD
Credit Information Index	Depth of credit information index measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. The index ranges from 0 to 6, with higher values indicating the availability of more credit information, from either a public registry or a private bureau, to facilitate lending decisions. We use the 2003–2005 average index. Source: Warnock & Warnok (2008).	4.14	1.68
Capitalization	Stock Market Capitalization of listed domestic companies as % of GDP. Market capitalization (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic companies. We use the 1996-2010 average. Source: World Bank Development Indicators.	0.54	0.28
Credit to GDP ratio	Domestic credit to private sector (as a % of GDP) refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. Values averaged between 2000 and 2007, then expressed as a value between 0 and 1. Source: World Bank Development Indicators.	0.83	0.47
Ease of Doing Business Index	Lower values indicate better regulations for businesses and stronger protections of property rights. Source: World Bank's Doing Business Reports.	69.59	11.82
Investment Freedom	The Index evaluates a variety of regulatory restrictions imposed on investment. Points are deducted from an the ideal score of 100 for each of the restrictions found in a country's investment regime. The values between 2000-2005 were averaged. Source: Index of Economic Freedom.	60.87	16.12

Variable	Definition and Source	Mean	SD
Business Freedom	The index measures the extent to which the regulatory and infra-structure environments constrain the efficient operation of businesses. It is a number between 0 and 100, with 100 indicating the freest business environment. The values between 2000-2005 were averaged. Source: Index of Economic Freedom.	67.30	11.05
Propensity to Save	Share of population for a given country who declared having saved some money. Source: WVS (2014).	67.30	11.05
Risk Propensity	Share of population for a given country which declares that adventures and taking risk is important in life. Source: WVS (2014).	67.30	11.05
Patience	Combination of quantitative and qualitative answers on the willingness to wait. Source: Global Preferences Survey (Falk et al. 2016, Falk et al. 2018).	0.12	0.42
Risk-taking	Quantitative and qualitative questions aiming to measure the individual's certainty equivalent. Source: Global Preferences Survey (Falk et al. 2016, Falk et al. 2018).	-0.09	0.25
Indulgence	It stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Restraint stands for a society that suppresses gratification of needs and regulates it by means of strict social norms. Source: Hofstede (2001).	49.66	21.36
Uncertainty Avoidance	It expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Countries exhibiting strong UAI maintain rigid codes of belief and behaviour, and are intolerant of unorthodox behaviour and ideas. Source: Hofstede (2001).	66.78	26.47

Variable	Definition and Source	Mean	SD
Long Term Orientation	Societies who score low on this dimension prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion. Those with a culture which scores high, on the other hand, take a more pragmatic approach: they encourage thrift and efforts in modern education as a way to prepare for the future. Source: Hofstede (2001).	48.62	25.66

Table A.4: Financial Literacy Index by Ethnic Group

Ethnic group:	Financial Literacy Dummy			% of Financial Literate in the population	
	3 answers correct	at least 1 of 3 wrong	N	In our Sample (NLSY)	In Country of Ancestry
African American	207	669	876	0.25	0.32
Arab	6	27	33	0.19	0.31
Chinese	9	19	28	0.37	0.28
Danish	9	10	19	0.50	0.71
Dutch	38	53	91	0.42	0.66
Filipino	11	31	42	0.28	0.25
French	138	241	379	0.38	0.52
German	628	758	1,386	0.47	0.66
Greek	8	14	22	0.36	0.45
Haitian	0	5	5	0.0	0.18
Hispanic	18	56	74	0.32	0.30
Hungarian	7	12	19	0.34	0.54
Indian	10	35	45	0.30	0.24
Irish	257	381	638	0.42	0.55
Italian	121	179	300	0.43	0.37
Japanese	6	8	14	0.43	0.43
Korean	5	8	13	0.47	0.33
Mexican	99	321	420	0.24	0.32
Norwegian	25	42	67	0.36	0.71
Polish	79	90	169	0.49	0.42
Portuguese	6	17	23	0.25	0.26
Puerto Rican	16	56	72	0.23	0.32
Russian	32	24	56	0.57	0.42
Spanish	17	32	49	0.36	0.49
Swedish	18	36	54	0.33	0.71
UK	622	722	1,344	0.47	0.67
Total	2,392	3,846	6,238		
Mean				0.36	0.44
SD				0.12	0.17

Notes: Financial literacy in our sample is a 0-1 dummy for the three interest-inflation-risk diversification questions, all answered correctly. Financial literacy in the country of ancestry is taken from the S&P cross-country survey (% of adult population who answered correctly 3 out of 4 financial literacy questions). Means for the sample are weighted and computed at the country-level.

Table A.5: Sensitivity Analysis of the Effect of Country-of-Ancestry Financial Literacy

	(1) OLS	(2) Probit	(3) Logit	(4) Unweighted	(5) With Father Characteristics	(6) Both Parents' Characteristics
S&P FL Index	0.233***	0.240***	0.242***	0.291***	0.242***	0.233***
	(0.053)	(0.055)	(0.057)	(0.048)	(0.059)	(0.058)
N	6,238	6,238	6,238	6,118	4,845	4,845
r2	0.142			0.202	0.139	0.141
Age, age squared	X	X	X	X	X	X
Gender	X	X	X	X	X	X
Regions	X	X	X	X	X	X
Family variables	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X		X
Fathers' characteristics					X	X
Survey year	X	X	X		X	X
Weights	X	X	X		X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Columns (2) and (3) report average marginal effect from Probit and Logistic model, respectively. Columns (4), (5) and (6) report OLS estimate. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Falsification Test: Effect of Country-of-Ancestry Financial Literacy on Other Variables

	(1) Life Satisfaction	(2) Years of Education	(3) Employed
S&P FL Index	0.179	0.792	0.072
	(0.116)	(0.716)	(0.061)
N	5,762	6,081	6,102
r2	0.045	0.171	0.070
Age, age squared	X	X	X
Gender	X	X	X
Regions	X	X	X
Family variables	X	X	X
Foreign born	X	X	X
Educational levels	X		X
Mothers' characteristics	X	X	X
Survey year	X	X	X
Weights	X	X	X
Country-of-Ancestry Literacy, Numeracy and log(GDP)	X	X	X

Notes: The dependent variable are, respectively, a dummy for life satisfaction (equal to one when the individual satisfaction is above the sample mean for life satisfaction), years of education and whether the individual is employed. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Effect of Country-of-Ancestry Financial Literacy on Behaviors

Dependent variable: **Probability of having a credit card**			
	(1)	(2)	(3)
NLSY FL Index	0.123***	0.114***	0.050**
	(0.019)	(0.019)	(0.019)
S&P FL Index		0.047	0.024
		(0.092)	(0.075)
N	4897	4805	4805
r2	0.029	0.042	0.105

Dependent variable: **Probability of owning bonds**			
	(1)	(2)	(3)
NLSY FL Index	0.065***	0.061***	0.037***
	(0.005)	(0.006)	(0.006)
S&P FL Index		0.015	0.020
		(0.065)	(0.055)
N	5854	5735	5735
r2	0.015	0.019	0.042

Dependent variable: **Probability of owning stocks**			
	(1)	(2)	(3)
NLSY FL Index	0.154***	0.146***	0.094***
	(0.011)	(0.011)	(0.013)
S&P FL Index		0.089	0.065
		(0.079)	(0.066)
N	5834	5717	5717
r2	0.045	0.053	0.097

Dependent variable: **Delayed loans payment**			
	(1)	(2)	(3)
NLSY FL Index	0.006	0.006	-0.008
	(0.009)	(0.009)	(0.005)
S&P FL Index		-0.015	-0.011
		(0.039)	(0.038)
N	4990	4879	4879
r2	0.604	0.603	0.608

Dependent variable: **Probability of bankruptcy**			
	(1)	(2)	(3)
NLSY FL Index	-0.047***	-0.014	-0.015
	(0.010)	(0.010)	(0.011)
S&P FL Index		-0.047	-0.051
		(0.040)	(0.055)
N	6201	6065	6065
r2	0.030	0.031	0.065

Age, age squared			X
Gender			X
Regions			X
Family variables			X
Foreign born			X
Educational levels			X
Mothers' characteristics			X
Survey year	X	X	X
Weights	X	X	X
Country-of-Ancestry Literacy,			
Numeracy and log(GDP)		X	X

Notes: The dependent variables are defined on top of each panel. NLSY FL Index is a dummy for answering correctly the three interest-inflation-risk diversification questions in the NLSY survey. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Column (3) analyzes the relationship between individual's financial knowledge and economic decisions after controlling for all variables as in column (7) in Table 2 and several ancestry-level general measures of human capital (namely GDP per capita, and numeracy and literacy rates). We observe a positive statistical correlation between the individual's financial knowledge and her likelihood of having a credit card and owning stocks and bonds, however because of endogeneity concerns, we claim no causal link in this analysis.

Table A.8: Effect of Country-of-Ancestry Financial Literacy: Cognitive and Non-Cognitive Skills

	(1)	(2)	(3)	(4)	(5)	(6)
		Full Sample		**NLSY79**		**NLSY97**
S&P FL Index	0.233***	0.068**	0.242***	0.240***	0.221***	0.255***
	(0.053)	(0.032)	(0.057)	(0.068)	(0.071)	(0.055)
IQ (2nd quantile)		0.086***				
		(0.009)				
IQ (3rd quantile)		0.207***				
		(0.022)				
IQ (4th quantile)		0.386***				
		(0.026)				
Risk Taker (1)			-0.005			
			(0.003)			
Risk Taker (2)			0.019***			
			(0.004)			
Interested in news				0.015**		
				(0.006)		
Interested in politics				-0.031***		
				(0.006)		
Self-esteem					0.000***	
					(0.000)	
Locus of Control					-0.014***	
					(0.004)	
Hard worker						-0.008
						(0.007)
Following rules						0.011**
						(0.004)
N	6,238	6,118	5,994	3,258	3,240	2,754
r2	0.139	0.202	0.150	0.141	0.139	0.160
Age, age squared	X	X	X	X	X	X
Gender	X	X	X	X	X	X
Regions	X	X	X	X	X	X
Family variables	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X	X
Weights	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Risk-taker(1) refers to a general attitude towards risk in life, Risk-taker(2) refers to a specific risk attitude in financial matters. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: Correlations between Country-Level Variables

Panel A: Human Capital Variables

	S&P FL Index	Literacy	Numeracy	PISA 2012	Secondary Enrollment (%)	Per Student Expenditures
S&P FL Index	1.0000					
Literacy	0.6655	1.0000				
Numeracy	0.7245	0.9431	1.0000			
PISA 2012	0.7257	0.9349	0.9981	1.0000		
Secondary enrollment (%)	0.5940	0.9186	0.8083	0.7865	1.0000	
Per Student Expenditures	0.2473	0.3699	0.2531	0.2431	0.3867	1.0000

Panel B: Economic and Financial Development Variables

	S&P FL Index	GDP	Social Contributions	Credit to GDP ratio	Capitalization	Ease of Business index	Investment Freedom	Business Freedom	Legal Rights	Credit Info
S&P FL Index	1.0000									
log(GDP/capita)	0.7284	1.0000								
Social Contributions	0.4112	0.4405	1.0000							
Credit to GDP ratio	0.8329	0.6338	0.0533	1.0000						
Capitalization	0.5669	0.4020	-0.3133	0.7734	1.0000					
Ease of busines index	0.8457	0.8448	0.1624	0.8107	0.6272	1.0000				
Investment Freedom	0.6927	0.6750	0.5242	0.5482	0.0439	0.6538	1.0000			
Business Freedom	0.6058	0.6379	-0.2555	0.7914	0.7854	0.8426	0.4032	1.0000		
Legal Rights Index	0.8384	0.4781	0.0184	0.8980	0.6735	0.7993	0.6273	0.7472	1.0000	
Credit Info	0.5920	0.5507	0.2785	0.5586	0.2970	0.6578	0.6607	0.4455	0.6452	1.0000

Notes: Pearson correlations between variables: Results are weighted.

Table A.10: Correlations between Financial Literacy Measures in the S&P Survey

	(1) S&P FL Index	(2) Risk Diversification	(3) Inflation	(4) Numeracy	(5) Compound Interest
S&P FL Index	1.0000				
Risk Diversification	0.9729	1.0000			
Inflation	0.7053	0.6149	1.0000		
Numeracy	0.8915	0.8312	0.9005	1.0000	
Compound Interest	0.9746	0.9319	0.7510	0.9035	1.0000

Notes: Pearson correlations between variables. Results are weighted.

Appendix B

B.1 *Selection on Unobservables*

We adopt the approach in Oster (2019), which builds on Altonji, Elder & Taber (2005, 2008), to examine the robustness of our results to unobserved dimensions, based on the coefficient's movements when observable measures are included. Using Oster's test for selection on unobservable characteristics, we estimate upper and lower bounds of the coefficient of interest, β_1, under the assumption that the selection on unobservable characteristics relates to that on observable characteristics. The formula proposed by Oster (2019) to calculate a bias-adjusted coefficient is approximated[25] by:

$$\beta^* \approx \tilde{\beta} - \delta(\dot{\beta} - \tilde{\beta})\frac{R^2_{max} - \tilde{R}^2}{\tilde{R}^2 - \dot{R}^2}$$

, where $\dot{\beta}$ is the country-of-ancestry financial literacy coefficient in an uncontrolled regression which includes only covariates uninformative of selection on unobservable (as our specification in column 1, Table 2); $\tilde{\beta}$ is the country-of-ancestry financial literacy coefficient of our preferred model (specification in column 7, Table 2); $\dot{R}^2$ and $\tilde{R}^2$ are the corresponding R^2 of the two models; δ is the degree of selection on unobserved relative to observed characteristics; and the R^2_{max} is the highest possible value of the R^2. Intuitively, movements in the coefficient due to the inclusion of additional variables are re-scaled by movements in the corresponding R^2. Both δ and R^2_{max} are unknown parameters, which can vary in different settings.

In Panel A of Appendix Table B.1, we present lower and upper bounds for β_1 under different assumptions for δ and R^2_{max}. In particular, we assume that the selection on unobservables is equal to that on observables ($\delta = 1$) or about 20 percent lower ($\delta = 0.8$). Our choice of R^2_{max} is threefold. Following Oster (2019), we assume R^2_{max} equals twice $\tilde{R}^2$ or 1.3 times $\tilde{R}^2$. In addition, as Oster suggests to use an R^2 from a randomly-designed experiment applied to our context, we draw $R^2_{max} = 0.35$ from Brown et al. (2018), which make use of a quite different setting and cultural variable and have 0.35 as the highest R-squared obtained in their analysis. Under the six alternative scenarios, our upper and lower bounds indicate that β_1 would be positive in all but one case, and even then, the bias-adjusted estimate would range between -0.021 and 0.233.

Alternatively, Panel B of Appendix Table B.1 shows the different values δ would need to take for β^* to be equal to zero under the three different alternative assumptions for R^2_{max}. As δ ranges between 0.931 and 4.229, for selection on unobservables to cancel out our estimate of culture, the effect of unobservables would need to be quite high, roughly equal to 4 times stronger than the one from observables. Overall, this exercise suggests that concerns on unobservables biasing our results are small.

B.2 *Additional Robustness Checks and Subgroup Analyses*

To further explore whether our results are driven by individuals from a particular country/region of ancestry, Appendix Table B.2 re-estimates our preferred specification after dropping a particular country/region of ancestry, one at a time. Columns 1 to 5 reveal that our finding is robust to excluding African Americans, Germans, English, Irish and Mexicans, the largest cultures of ancestry in our sample. Column 6 in Appendix Table B.2 re-estimates our preferred specification including the NLSY over-samples of poor and members of the military. Results are robust to including the NLSY over-samples.

---

[25]The actual formula is more involved than this one, and is calculated using the *psacalc* package in Stata provided by Emily Oster.

Table B.1: Sensitivity to Omitted Variable Bias

	(1)	(2)	(3)	(4)	(5)
Panel A: Identified Set for given δ and R^2_{max}					
	Restricted model	Baseline model	$R^2_{max} = 1.3 * \tilde{R}^2$	$R^2_{max} = 1.3 * \tilde{R}^2$	$R^2_{max} = 3.5$
	$(\dot{\beta})$	$(\tilde{\beta})$		$[\beta^*; \tilde{\beta}]$	
$\delta = 1$	0.344	0.233	[0.189; 0.233]	[0.070; 0.233]	[−0.021; 0.233]
$\delta = 0.8$			[0.203; 0.233]	[0.124; 0.233]	[0.039; 0.233]
Age, age squared		X			
Gender		X			
Regions		X			
Family variables		X			
Foreign born		X			
Educational levels		X			
Mothers' characteristics		X			
Survey year	X	X			
Weights	X	X			
Panel B: δ for $\beta = 0$					
δ			4.229	1.349	0.931

Notes: The reported beta is the one associated with country-of-ancestry financial literacy (i.e. the S&P FL Index, the % of adult population who answered correctly 3 out of 4 financial literacy questions in a given country). The restricted model in column (1) only controls for survey year, whereas column (2) corresponds to our baseline specification, as given in column (7) of Table 2. Columns (3), (4) and (5) state the bounds for unobserved selection (Panel A) given different values for delta, and the δ which would invalidate our result (Panle B). The analysis performed follows Oster (2019).

Only 1 percent of our sample reported having difficulties understanding English. Hence, it is unlikely that this concern is an issue in our study. Nonetheless, we have re-estimated our preferred specification adding a control for whether the respondent lacks English proficiency. Doing so has no effect on our coefficient of interest, β_1, which is now 0.234 (standard deviation: 0.053). The coefficient on the lack of English proficiency is 0.059 (standard deviation: 0.11).

Appendix Table B.3 presents subgroup analysis. We estimate our preferred specification by: (1) NLSY cohort, (2) native versus immigrant, and (3) whether the highest educational attainment is at most a high-school degree versus those who have more than a high school degree. In each subgroup, we find that there is a positive association between culture and the likelihood that the individual responds correctly the three financial literacy questions. The magnitude of the culture coefficient is similar across NLSY cohorts and levels of education. Not surprisingly, we find that it is twice as large among immigrants than natives. The fact that our finding holds among natives underscores that culture persist across generations and contrasts with Osili & Paulson (2008) who did not find evidence that country-of-ancestry quality of the institutions affected second-generation immigrants' decision to invest in stocks in the US.

B.3 *Parental Financial Behavior When Youths Were Growing Up*

Below, we explore to what extent the observed differences in respondents' financial literacy across countries of ancestry can be explained by systematic differences in their parents' financial behavior when youths were growing up. To do so, we estimate how much of the relationship between ancestry-level financial literacy and the respondent's financial literacy in the US is a direct or an indirect effect, driven by parent's financial behavior. To estimate the Average Causal Mediation Effect (ACME), we need to assume that variation in parental financial behavior is exogenous for a given country of ancestry and that we have fully accounted for any confounders that might have effects on both the respondent's financial literacy and ancestry-level financial literacy (Imai et al. 2011). As both assumptions are highly demanding, the analysis below is meant to be exploratory.

Table B.2: Effect of Country-of-Ancestry Financial Literacy: different Samples

| | The following group is excluded: | | | | | |
	(1) African American	(2) Germans	(3) UK	(4) Irish	(5) Mexicans	(6) with Oversamples
S&P FLI	0.191***	0.219***	0.272***	0.233***	0.232***	0.262***
	(0.052)	(0.057)	(0.058)	(0.052)	(0.059)	(0.042)
N	5,362	4,852	4,894	5,600	5,818	9,623
r2	0.139	0.146	0.146	0.142	0.140	0.140
Age, age squared	X	X	X	X	X	X
Gender	X	X	X	X	X	X
Regions	X	X	X	X	X	X
Family variables	X	X	X	X	X	X
Foreign born	X	X	X	X	X	X
Educational levels	X	X	X	X	X	X
Mothers' characteristics	X	X	X	X	X	X
Survey year	X	X	X	X	X	X
Weights	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Results are weighted and errors are clustered at the country of ancestry level. Columns (1) to (5) excludes the specified country of ancestry; Column (6) includes the over-samples. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table B.3: Effect of Country-of-Ancestry Financial Literacy, by Subgroups

	(1) NLSY79	(2) NLSY97	(3) Native	(4) Immigrant Background	(5) High School	(6) High School+
S&P FL Index	0.209***	0.259***	0.201***	0.539***	0.251***	0.221**
	(0.064)	(0.053)	(0.058)	(0.096)	(0.033)	(0.097)
N	3,455	2,783	6,022	545	3,725	2,513
r2	0.128	0.156	0.140	0.225	0.054	0.109
Age, age squared	X	X	X	X	X	X
Gender	X	X	X	X	X	X
Regions	X	X	X	X	X	X
Family variables	X	X	X	X	X	X
Foreign born	X	X			X	X
Educational levels	X	X	X	X		
Mothers' characteristics	X	X	X	X	X	X
Survey year			X	X	X	X
Weights	X	X	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. S&P FL Index refers to the country-level S&P survey on financial literacy (% of adult population who answered correctly 3 out of 4 financial literacy questions). Each column perform the analysis on a different group: (1) and (2) are the two NLSY samples; (3) and (4) are the group of born in the US vs. immigrants (here immigrants are defined as individuals either born abroad or whose mother is born abroad); (5) and (6) are those who achieved at most high school education vs. the ones with higher degrees. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

We estimate the following two linear regressions:

$$M_{irjt} = \delta_0 + \delta_1 S\&PFLI_j + X'_{irjt}\delta_2 + \gamma_r + \gamma_t + \epsilon_{irjt}$$

$$FL_{irjt} = \beta_0 + \beta_1 S\&PFLI_j + X'_{irjt}\beta_2 + \beta_3 M_{irjt} + \gamma_r + \gamma_t + \epsilon_{irjt}$$

, where M_{irjt} represent parents' financial behavior while the respondent was growing up. The mediation effect is defined as $ACME = \beta_3 * \delta_1$[26]. Appendix Table B.4 shows that individuals from a country of ancestry with above-the-mean financial literacy are significantly more likely to have parents who were homeowners, and had debt or savings when the respondents were 14 years old. However, Appendix Table B.5 reveals that most of the relationship between ancestry-level financial literacy and respondent's financial literacy in the US is driven by the direct effect of our proxy for culture. Indeed, the ACME effects for the different parental financial behavior are small and close to zero in size, and (with the exception of having savings) not statistically significant.

Table B.4: Parents' Financial Sophistication and Country-of-Ancestry Financial Literacy

Dependent Variable:	(1) Homeowner	(2) Owning Stocks	(3) Having Debt	(4) Having Savings
$S\&P$ FL Index	0.081*	0.015	0.059**	.075**
	(0.045)	(0.029)	(0.025)	(0.035)
N	2,622	2,742	2,744	2,754
Age, age squared	X	X	X	X
Gender	X	X	X	X
Regions	X	X	X	X
Family variables	X	X	X	X
Foreign born	X	X	X	X
Educational levels	X	X	X	X
Mothers' characteristics	X	X	X	X
Weights	X	X	X	X

Notes: This table reports results of the OLS regressions of the country-of-ancestry financial literacy variable on different potential mediating variables. The dependent variable is indicated on top of each column. $S\&P$ FL Index is the country-of-ancestry financial literacy, measured as a dummy equal to one if the financial literacy of a specific country is above the mean of financial literacy in our sample. Analysis is performed only on NLSY97 sample because of data availability. Results are weighted and errors are clustered at the country of ancestry level. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

---

[26]We used the Stata command medeff (Hicks & Tingley 2011).

Table B.5: Mediation Analysis: Parents' Financial Sophistication

	(1) Homeowner	(2) Owning Stocks	(3) Having Debt	(4) Having Savings
ACME	0.002	0.001	0.000	0.003
	[-0.000; 0.007]	[-0.004; 0.006]	[-0.002;0.003]	[0.000;0.009]
Direct Effect	0.058	0.059	0.064	0.056
	[0.017;0.099]	[0.020; 0.109]	[0.026;0.102]	[0.022;0.091]
Total Effect	0.060	0.060	0.064	0.060
	[0.019;0.104]	[0.020;0.111]	[0.027;0.104]	[0.025;0.098]
Prop. Mediated	0.037	0.016	0.006	0.064
	[0.021;0.117]	[0.009;0.048]	[0.004;0.013]	[0.039;0.151]
N	2,622	2,742	2,744	2,754
Age, age squared	X	X	X	X
Gender	X	X	X	X
Regions	X	X	X	X
Family variables	X	X	X	X
Foreign born	X	X	X	X
Educational levels	X	X	X	X
Mothers' characteristics	X	X	X	X
Weights	X	X	X	X

Notes: The dependent variable is a dummy equal to one if the respondent has answered all three financial literacy questions correctly. Each column investigate a specific mediation channel, specified on top of the column. ACME is the average causal mediation effect capturing the mediation effect of a particular mediation channel. Direct Effect is the effect of the culture variable ($S\&P$ FL Index, measured as a dummy equal to one if the financial literacy of a specific country is above the mean of financial literacy in our sample); Total effect is the combined effect of culture and mediating variable; Prop. mediated is defined as ACME/Total effect. Analysis is performed only on NLSY97 sample because of data availability. Results are weighted and errors are clustered at the country of ancestry level. 95% confidence interval in brackets.