Culture, Preferences, and the Gender Gap in Financial Literacy

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Women's Convergence and the Gender Gap in Financial Knowledge

- **Despite women's and men's convergence in many economic outcomes:**

  - High-school performance (Fortin et al., 2015)
  - High-school graduation (Murnane, 2013),
  - Years of completed schooling (Charles and Luoh, 2003),
  - College enrollment and graduation (Goldin, Katz, and Kuziemko, 2006),
  - Labor force participation (Goldin 2006),
  - Wages (Goldin, 2014; Kleven and Landais, 2017),

- **Women consistently display lower levels of financial knowledge than men** (Bucher-Koenen et al. 2017).

Women's lower financial literacy is:

- **Severe and widespread across many countries** (Lusardi & Mitchell 2014; Madhavi & Horton 2014; Hasler & Lusardi 2017; Klapper & Lusardi 2020).

- **Widespread across different socio-demographic characteristics** (Mahdavi and Horton, 2014).

- **Of great concern given the relevance of financial literacy on day-to-day financial management skills** (Lusardi & Mitchell 2014; Bannier & Schwarz 2018; Bannier & Neubert 2016).

The Perfect Storm

- **Women tend to have lower financial resources than men because women:**

  - Earn less than men
  - Experience more work interruptions due to child rearing
  - Have longer life expectancies than men

- **Lower financial knowledge + reduced financial resources**

Perfect Storm for Women's Financial Insecurity and Poverty, especially after retirement (Lusardi and Mitchell, 2008).

Gender differences in preferences

- **Important gender differences in preferences** concerning time, risk, and social interactions have been documented (Croson and Gneezy 2009; Falk et al. 2018)

- **These gender differences have been shown to systematically shape men's and women's differential economic behavior** such as occupational choice, financial investment, or educational decisions (DeLeire and Levy 2004; Buser, Niederle, Oosterbeek, 2014).

However, differences in financial knowledge between men and women are hard to explain.

Explanation #1: Gender Differences in Socio-Demographic Characteristics

- **Can gender differences in age, marital status, educational levels, labor force participation, or income explain the gender gap in financial knowledge?**

  - Yes, but only partially (in the US, The Netherlands and Germany: Bucher-Koenen et al. 2017).
  - A persistent and sizeable gap remains, ranging between 8 percentage points in Germany to 14 percentage points in the US.

- **The gender gap in financial knowledge is found across a wide variety of groups:**

  - The college educated (Mahdavi and Horton, 2012)
  - Young adults (Lusardi, Mitchell and Curto, 2010)
  - High school students (Mandell, 2008)

Main objective of the paper:

What is the role of culture and cultural preferences as opposed to institutional or economic constraints in explaining the gender gap in financial literacy?

If institutions matter…

Women may choose to invest less in financial literacy than men because:

- They expect **lower returns to their financial knowledge** given the higher legal and regulatory barriers they face relative to men (Brush et al. 2004; Klapper & Parker 2010; Asiedu et al. 2013; Driva & Winter 2016)

- They are **systematically discriminated by financial institutions** (Alesina et al. 2013; Niessen-Ruenzi & Ruenzi 2018; Brock & de Haas 2019; Bhattacharya et al. 2020; Bucher-Koenen et al. 2020).

If culture regarding financial matters is most relevant…

Women's lower financial knowledge may result from internalizing what constitutes being a woman and behaving according to a woman's gender identity (Akerlof and Kranton 2000) regarding financial matters, which may affect:

- **A woman's *beliefs* of her own financial abilities** ("women are not good with money" or "women are not good with financial investments")—Chen & Volpe 2002) or

- **Her (lack of) *preferences* for financial interests** ("as I am a woman, I am not motivated by money" or "as I am a woman, I do not care about money") or

- **Her confidence and willingness to engage in tasks that are outside of a gender-specific domain** (Coffman 2014).

If cultural preferences more generally matter…

- Women's lower (men's higher) financial knowledge may result from a woman's (or man's) beliefs of her higher (his lower) impatience relative to that of men (women) or

- Women's higher (men's lower) altruism relative to that of men (women).

In this paper, we investigate both the role of culture regarding financial matters and that of cultural preferences in explaining the gender gap in financial literacy.

Our contribution

- We show a causal relationship (and the direction of the causality).
- We show that cultural beliefs regarding gender differences in financial knowledge shape differentially men's and women's financial knowledge in the US.
- We identify which gender-differentiated cultural preferences shape men's and women's financial knowledge in the US using a novel dataset on Global Preference Survey (Falk & Hermle 2018): patience and altruism.

Our findings

- **Cultural beliefs regarding gender convergence in financial knowledge beyond those associated with patience and altruism** are associated with women's (relative and absolute) greater financial literacy in the US.

- **More patience and less altruism in the country of ancestry** is associated with greater financial knowledge for men but not for women in the US.

- The relative and absolute female improvement is particularly robust for knowledge related to inflation and risk-diversification.

Literature review

- Studies on the **socio-economic and demographic determinants** of the gender gap in financial literacy (Fonseca et al. 2010; Bucher-Koenen et al. 2017) & on **non-cognitive skills** as determinants of the gender gap in financial literacy (Arellano, Cámara & Tuesta 2018).

- Studies analyzing the **cultural dimension of financially literacy** (Filipiak & Walle 2015; Brown, Henchoz & Spycher 2018; Davoli & Rodríguez-Planas 2020).

- Studies analyzing the cultural dimension of **gender differences** in cognitive skills (Nollenberger, Rodríguez-Planas & Sevilla 2016).

- Bottazi & Lusardi (2021) find evidence that the cultural environment in which girls and boys in Italy live (measured with medieval commercial hubs and the nuclear family structure) plays a crucial role in explaining gender differences in financial literacy.

Our contribution to the literature

- Our work shifts the attention to **adult financial literacy.**

- Exploits cultural variation across a wide set of countries of ancestry, providing **additional external validity** (in terms of both age groups as well as geographical external validity) to Bottazi & Lusardi (2021).

- We **disentangle the role of gender differences in cultural preferences** (namely patience and altruism) **from other beliefs related to financial knowledge.**

- We **underscore the role of beliefs regarding patience and altruism for men**, and **beliefs of their own financial abilities or taste for financial matters for women**.

Why would culture and cultural preferences explaining the gender gap in financial literacy?

Norms

- **Identity:** a person's self-image and his/her sense of belonging to a social category (Akerlof amd Kranton 2000, 2002 and 2005).

- **Norms** as to how individuals should behave depend on their social category, so deviating from such norms decreases utility.

  - **Women** are traditionally thought of as "generally weak, careful, obedient, socially responsible and sensible, well-behaved, and anxious about and responsive to others' opinion".
  - Whereas **men** are thought of as "independent, daring, and fearless, inherently curious, and holders of relaxed attitudes" (Sznitman 2007).

Evidence shows that there are gender differences in preferences

Using Global Preferences Survey (Falk et al. 2016), Falk et al. (2018) find that:

- Women tend to be more prosocial (more altruistic) than men.
- Women tend to be less negatively reciprocal (react to being punished for an unkind action) than men.
- Women tend to be less risk taking than men.
- Women tend to be less patient than men.

Norms & Financial Knowledge

- Traditional norms constrain both men and women to behave as socially stipulated by their social category.

- As societies move from more traditional to less traditional (or vice-versa), the costs from deviating from the prescribed behavior decrease (increase), and we ought to expect men to behave more like women and women like men.

To the extent that some of traditionally male (female) traits may enhance financial knowledge while others may mitigate it, learning about them can help design policies that increase financial literacy for both men and women.

Why Would Culture Affect Individuals' Financial Knowledge?

Culture may affect individuals' financial knowledge because they have internalized certain beliefs and values related to the:

- Relevance of gathering economic information to make informed financial decisions
- Need to have precautionary savings and their optimal amount;
- Amount of risk that is reasonable to handle;
- Optimal portfolio diversification;
- Reliance and type of debt that is acceptable; or
- Risk of high inflation or deflation, among others.

Why Would Culture Affect Differentially Men's and Women's Financial Knowledge?

- **Traditional societies define different prescribed traits, behavior and roles to men and women. There are important gender differences in preferences concerning:**
  - time,
  - risk,
  - patience
  - social interactions

(Bertrand, 2011; Croson et al., 2009; Falk et al., 2018)

- **These gender differences have been shown to systematically shape men's and women's differential economic behavior:**
  - Occupational choice,
  - Financial investment, or
  - Educational decisions

(DeLeire and Levy 2004; Buser, Niederle, Oosterbeek, 2014)

- **Why wouldn't they also shape the gender gap in financial knowledge?**

Methodological approach

Similar to the epidemiological approach (Fernández and Fogli, 2009)

- We compare the financial literacy of a nationally representative sample of men and women who live and were (mostly) born in the US, 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).

- We do not use second-generation immigrants (as Fernández and Fogli, 2009), but instead we use individual's reported ancestry.

Gender gaps & the epidemiological approach (Nollenberger, Rodríguez-Planas, and Sevilla, 2016)

- To prevent picking up confounding factors that impact men and women in the same way, such as economic development or human capital development specific to each country, **we exploit variation across genders within a country-of-ancestry** in addition to variation across countries of ancestry.

- **Evidence that country-of-ancestry gender differences in financial literacy or preferences are associated with the gender gap in financial knowledge in the US** would provide strong evidence that culture, transmitted across generations and/or through social networks, matters.

Data

National Longitudinal Survey of Youth (NLSY)

- **The NLSY follows two nationally representative samples of individuals in the United States over time:**
  - ***The younger cohort*** was 25 years old, on average, when they were asked about their financial knowledge in 2007
  - ***The older cohort*** was 51 years old when they were asked about their financial knowledge in 2012.

- **We code an individual as having financial knowledge** if the respondent answered correctly three questions regarding inflation, risk diversification, and interest rate.

- **Individual's socio-demographic characteristics** (including parental education, employment, and wealth and financial sophistication while the respondent was a teenager) & information on her **household composition, marital status, employment status, citizenship status, region of residence and whether she lives in an urban or rural area** to control for socio-economic and demographic determinants of individuals' financial knowledge.

NLSY financial literacy questions

Table A.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

Note: Financial literacy questions from the NLSY79 and NLSY97.

Standard & Poor's Financial Ratings Services Global Financial Literacy Survey

- Designed in 2014 by a joint effort of World Bank, Gallup, and the George Washington University. It is the most comprehensive measurement of financial literacy around the globe.

- It measures:

  - The share of a country's adult population that is financially literate

  - by asking five questions on four basic financial concepts (risk diversification, inflation, interest and interest compounding)

- We use it to create a **representative measure of the financial knowledge gap for each country of ancestry**

Gender gap in financial literacy in the country-of-ancestry

- Following Hasler & Lusardi (2017):

Proportion of women who are financially literate in each country – proportion of men who are financially literate

- This measure is our **proxy for country-level social norms regarding the financial knowledge gender gap**.

- We cannot use a past measure of country-of-ancestry financial literacy gender gap. However, following (Fernández & Fogli 2006, 2009), **the use of contemporaneous measures** is not uncommon in the epidemiological literature and to the extent that culture evolves slowly over time (Roland 2004), using a contemporaneous measure is less problematic.

The Global Preference Survey

- Collected as part of the Gallup World Poll 2012, provides validated individual-level measures of economic preferences at a global scale (Falk & Hermle 2018).

It measures preferences in the following domains:

- Intertemporal timing of rewards
  - **Patience**
  - **Risk-taking**

- **Positive reciprocity**, which capture the costly willingness to reward kind actions

- **Altruism**

Gender differences in preferences at the country-of-ancestry level

- All domains were individually measured through 12 qualitative and quantitative questions items, **ex-ante experimentally validated and pre-tested to cultural heterogeneities** to provide **comparable cross-countries measures** of preferences.

- **We collapsed each preference at the country-by-gender level**, using the sampling weights provided by Gallup and following the same procedure as in (Falk & Hermle 2018) to create **representative measures of preferences for each country of ancestry by gender**.

- We define the **gender difference in preferences** as the country-of-ancestry difference between average female and average male measure of a given preference.

"What ethnic group do you identify with most?"

The advantages of using self-identified ancestry rather than parents' country of origin, as is usually done in this literature, are multiple.

- We collect information for a relatively large sample of individuals, highly **representative of the US population.**

- We mitigate issues related to the possible self-selection of specific individuals in the country of destination (Davoli & Rodríguez-Planas 2020), a concern that often affects analyses focused on first-generation immigrants.

- As individuals are asked about their preferred ethnicity, they are likely to report the one that truly influences them the most, reflecting the set of norms and beliefs that they conform and associate with.

- Parents' country of birth is not in the public-use NLSY.

9,623 individuals from **27 different countries/regions of ancestry** covering four continents and different levels of development.

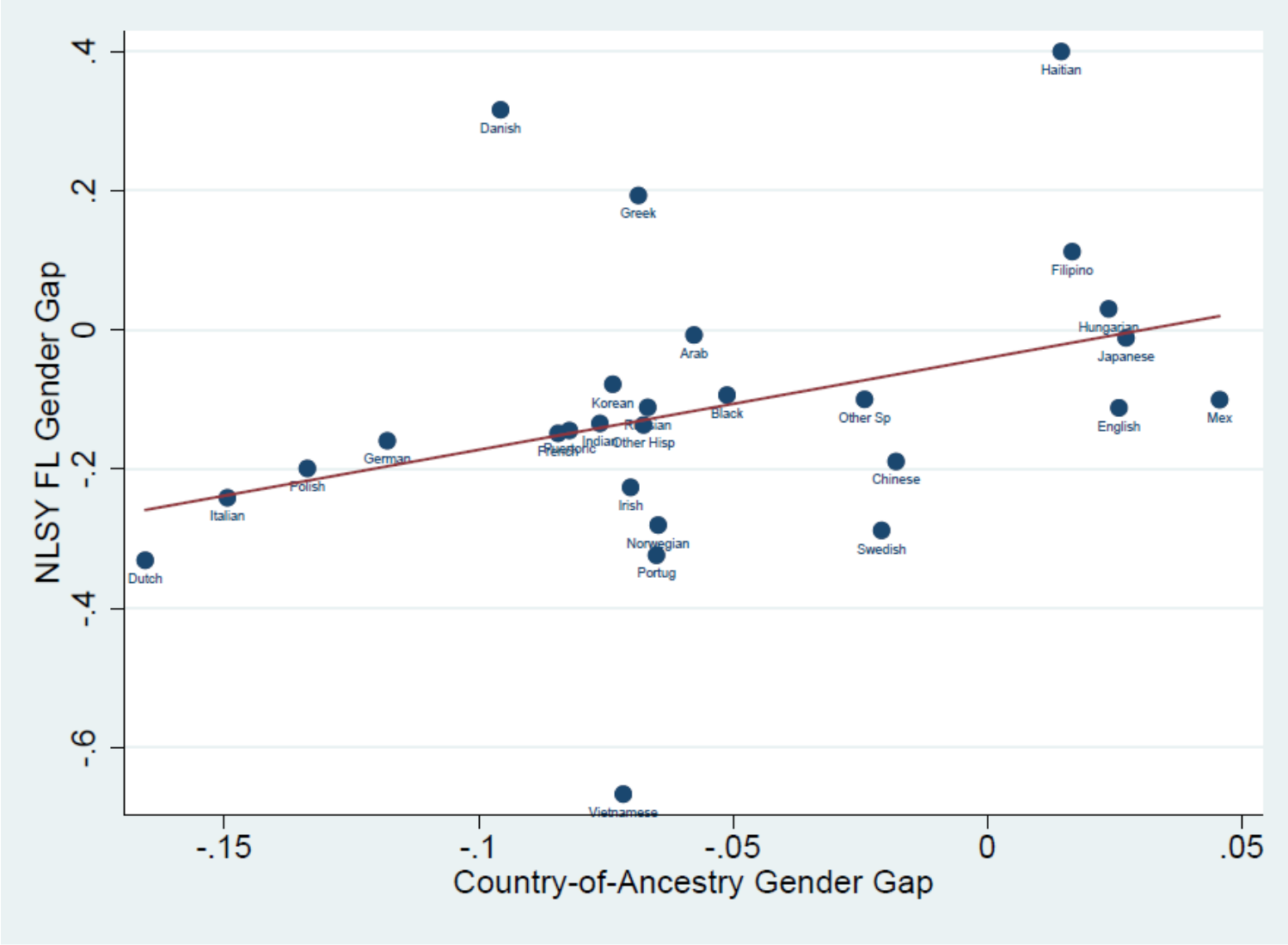
Gender gap in financial literacy in NLSY

The gender gap in financial literacy average magnitude of -14 percentage points

- Male average financial literacy in the US is 48%
- Female average financial literacy in the US is 34%

- **Women underperform men by roughly 29%**

Coming from a country of ancestry with a smaller gender gap in financial literacy is associated with a smaller gender gap in financial literacy in the US



Empirical Methodology

Empirical specification

$$FL_{irjt} = \beta_0 + \beta_1 Female_{irjt} + \beta_2 S\&PFL_GGap_j + \beta_3 S\&PFL_GGap_j * Female_{irjt}$$

$$+X'_{irjt}\beta_4 + Z'_j\beta_5 + \gamma_r + \gamma_t + \varepsilon_{irjt}$$

FL_{irjt} is a dummy indicating whether individual i, living in US region r, from country of ancestry j, and interviewed in year t answered correctly the three questions regarding inflation, risk diversification, and interest rate.

$S\&PFL_GGap_j$ is the **gender gap** (difference between proportion of women and proportion of men who are financially literate) **in the country of ancestry *j***.

The vectors X_{irjt} and Z_j include a rich set of individual and country-of-ancestry covariates that vary with the estimated specification.

γ_r and γ_t are US region-of-residence and survey-year fixed effects, respectively.

Robust standard errors are clustered at the country-of-ancestry level, which is the source of identification.

Table 1: Country-of-Ancestry Gender Gap in Financial Literacy and Financial Knowledge in the US

	(1)	(2)	(3)
Female	-0.116***	-0.123***	-0.123***
	(0.010)	(0.008)	(0.008)
S&PGap	-0.543	-0.497***	
	(0.387)	(0.225)	
Female**S&PGap*	0.462***	0.561***	0.551***
	(0.126)	(0.094)	(0.099)
N	9623	9623	9623
Individual Controls		X	X
Country FE			X
Weights	X	X	X

Clustered standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Economic interpretation of the effect on the gender gap

- **A one-standard-deviation increase in the gender gap in financial literacy in the country of ancestry** (i.e., greater gender convergence as the gender gap is negative) is associated with an **increase in women's financial literacy in the US of 3.1 percentage points relative to that of men.**

- This effect represents the equivalent of **a reduction in the financial literacy gender gap in the US of 28%** or an increase in women's financial literacy of 9% over the NLSY average female financial literacy rate of 34%.

- The effect is calculated as:

$$\frac{(\hat{\beta}_3)*Origin\ Country\ S\&PGap_{StDev}}{NLSY\ FL\ GENDER\ GAP_{mean}} = \frac{0.561*0.0553}{-0.1121} = \frac{0.031}{-0.1121} = -0.2767$$

10% of the effect of having a college degree on women's financial literacy

The effect of country-of-ancestry financial literacy gender gap on female respondents' financial literacy in the US is **as large as one tenth of the effect of having a college degree (relative to dropping out from high school) on women's financial literacy** as having a college degree almost doubles (86% increase) the financial literacy rate in our NLSY sample of women relative to being a high-school dropout.

(The coefficient on the college dummy is 0.293 and the average NLSY female financial literacy rate is 34%.)

But it is driven by men in the US underperforming the lower the financial literacy in their country of ancestry

- A one-standard-deviation increase in the gender gap in the country of ancestry is associated with a ***reduction*** **in men's financial knowledge in the US of about 2.7 percentage points (or a decrease of 5.6%** over the NLSY average male financial literacy rate of 48%), the equivalent of a reduction in the negative gender gap of 25%.

- This effect is **one eleventh of the effect of a college degree (relative to no high-school degree) on men's financial literacy** in our NLSY sample. However, in contrast with higher education, which is positively associated with respondent's financial knowledge, greater gender convergence in country-of-ancestry financial knowledge is associated with lower male financial literacy in the US.

- The effect is calculated as:

- $$\frac{(\widehat{\beta}_2)*Origin\ Country\ S\&PGap_{StDev}}{NLSY\ FL\ GENDER\ GAP_{mean}} = \frac{-0.497*0.0553}{-0.1121} = \frac{-0.027}{-0.1121} = +0.2452$$

Summary of results thus far

- Greater country-of-ancestry gender convergence in financial knowledge is associated with a **smaller gender gap** in financial knowledge in the US.
- But results are **driven by a decrease in men's (absolute) financial knowledge**, with no effect on women's (absolute) financial knowledge.

- Others have found that greater gender convergence in the country of ancestry reduces the math gender gap in the country of residence (Rodríguez-Planas & Nollenberger 2018). However, in such a case, the smaller math gender gap was associated with an increase in country-of-residence math performance for both boys and girls, although the gains were twice as large for females.

Ruling out country-of-ancestry human capital or development

	OLS (1)	OLS (2)	OLS (3)	OLS (4)	OLS (5)	OLS (6)	OLS (7)	OLS (8)
Female	-0.116***	-0.123***	-0.100***	0.008	0.040	-0.058	-0.129***	-0.142***
	(0.010)	(0.008)	(0.032)	(0.039)	(0.050)	(0.057)	(0.022)	(0.009)
Origin country *S&P* gap	-0.543	-0.497**	-0.545***	-0.453***	-0.318***	-0.487***	-0.167	-0.741***
	(0.387)	(0.225)	(0.114)	(0.115)	(0.065)	(0.135)	(0.254)	(0.156)
Female× Origin country *S&P* gap	0.462***	0.561***	0.576***	0.539***	0.471***	0.549***	0.612***	0.855***
	(0.126)	(0.094)	(0.123)	(0.102)	(0.120)	(0.103)	(0.162)	(0.155)
N	9,623	9,623	9,604	9,604	9,285	9,623	9,623	9,354
Survey Year FE	X	X	X	X	X	X	X	X
Individual controls		X	X	X	X	X	X	X
Level of FL			X					
Literacy Rate				X				
Numeracy Rate					X			
Log GDP						X		
Social Contr.							X	
Legal origins								X
Country FE								

Dropping out different countries-of-ancestries

Table A.9: Gender Gap in Financial Literacy in the US and in the Country of Ancestry: Different Samples

	The following group is excluded:				
	(1)	(2)	(3)	(4)	(5)
	African Americans	English	Germans	Mexicans	Irish
Female	-0.129***	-0.115***	-0.123***	-0.124***	-0.118***
	(0.007)	(0.020)	(0.010)	(0.010)	(0.008)
Origin Country *S&P* Gap	-0.491***	-1.109***	-0.378	-0.408*	-0.469*
	(0.162)	(0.206)	(0.247)	(0.212)	(0.238)
Female × Origin Country *S&P* Gap	0.546***	0.621***	0.681***	0.556***	0.530***
	(0.102)	(0.160)	(0.122)	(0.104)	(0.084)
N	6923	8189	8184	8378	8948
Individual controls	X	X	X	X	X

Ruling out unmeasured human capital

Table A.10: Effect of Country-of-Ancestry Financial Literacy: Parents' Education and Financial Sophistication

	(1) Father education	(2) Homeowners	(3) Stocks	(4) Debt	(5) Savings
Female	-0.128***	-0.126***	-0.120***	-0.126***	-0.122***
	(0.008)	(0.023)	(0.021)	(0.022)	(0.023)
Origin Country *S&P* Gap	-0.465**	-0.855***	-0.795***	-0.813***	-0.792***
	(0.184)	(0.223)	(0.207)	(0.224)	(0.215)
Female × Origin Country *S&P* Gap	0.561***	1.077***	1.069***	1.045***	1.062***
	(0.087)	(0.167)	(0.159)	(0.162)	(0.171)
Father education					
Some college	0.037*				
	(0.019)				
College+	0.034*				
	(0.020)				
Father employed	0.071***				
	(0.010)				
Parents homeowners		0.037*			
		(0.021)			
Parents with stocks			0.066***		
			(0.015)		
Parents with debt				0.011	
				(0.014)	
Parents saving					0.062***
					(0.013)
N	6851	3480	3647	3646	3660
Individual controls	X	X	X	X	X

Ruling out respondents' cognitive or non-cognitive skills

Table A.11: Effect of Country-of-Ancestry Financial Literacy: Cognitive and Non-Cognitive Skills

	(1)	(2)	(3)	(4)	(5)
	Full Sample		**NLSY79**		**NLSY97**
Female	-0.082***	-0.083***	-0.047	-0.092***	-0.121**
	(0.011)	(0.019)	(0.058)	(0.031)	(0.045)
Origin Country $S\&P$ Gap	-0.311***	-0.502**	-0.307	-0.330	-0.674***
	(0.068)	(0.236)	(0.212)	(0.224)	(0.144)
Female × Origin Country $S\&P$ Gap	0.467***	0.554***	0.311***	0.317***	1.084***
	(0.135)	(0.090)	(0.103)	(0.097)	(0.157)
IQ (2^nd quantile)	0.076***				
	(0.009)				
IQ (3^rd quantile)	0.241***				
	(0.018)				
IQ (4^th quantile)	0.434***				
	(0.030)				
Female × IQ (2^nd quantile)	0.013				
	(0.020)				
Female × IQ (3^rd quantile)	-0.069**				
	(0.032)				
Female ×IQ (4^th quantile)	-0.079***				
	(0.025)				
Risk Taker (1)		0.000			
		(0.003)			
Risk Taker (2)		0.015***			
		(0.003)			
Female× Risk Taker (1)		-0.008*			
		(0.005)			
Female×Risk Taker (2)		0.003			
		(0.006)			
Interested in news			0.025**		
			(0.010)		
Female × Interested in news			-0.015		
			(0.013)		
Locus of Control				-0.012***	
				(0.003)	
Female ×Locus of Control				-0.003	
				(0.003)	
Hard worker					-0.009
					(0.009)
Following rules					0.011
					(0.008)
Female × Hard worker					0.005
					(0.012)
Female ×Following rules					-0.002
					(0.009)
N	9414	9264	5885	5925	3659

Falsification test

Table A.12: Effect of Country-of-Ancestry Financial Literacy on Other Outcomes: Falsification Test

	(1) Height (inch)	(2) Weight (pound)	(3) Employed	(4) Ever Arrested
Female	-1.317***	-33.883***	-0.083**	-0.195***
	(0.235)	(2.276)	(0.011)	(0.013)
Origin Country *S&P* Gap	1.647	-21.528	-0.040	0.098
	(1.451)	(14.407)	(0.171)	(0.093)
Female ×Origin Country *S&P* Gap	-3.027	15.794	-0.226	-0.189
	(3.054)	(19.672)	(0.147)	(0.148)
N	9060	9591	9623	9464
Individual controls	X	X	X	X

Evidence has found

- Those who display patience are also more likely to invest in human capital, health, and higher savings (Hastings & Mitchell 2011).

- A positive association between being able to delay gratification in preschool and academic and professional achievement in adult life (Casey et al., 2011).

- Lower risk aversion is associated with higher financial knowledge (Hryshko, Luengo-Prado and Sørensen 2010).

- Training children in prosocial behaviors (including fairness, altruism, and delay gratification) influences their decision-making in economic games (Heck et al. 2018; Lombardi et al. 2021).

Gender differences in cultural preferences vs gender differences in financial knowledge

- To the extent that women are less patient, more risk averse, and more prosocial than men, it is plausible that our findings may result from a **woman's (man's) beliefs regarding attitudes versus her (his) beliefs regarding behaviors.**

- It is plausible that our findings may result from a woman's (or man's) beliefs of her higher (his lower) impatience relative to that of men (women) or of her higher (his lower) altruism relative to that of men (women) as opposed to her beliefs of her own financial abilities (Chen & Volpe 2002), her (lack of) *preferences* for financial interests, or her confidence and willingness to engage in tasks that are outside of a gender-specific domain (Coffman 2014).

- In both cases, culture would matter, yet the type of beliefs driving the results would be different, and the policy implications would differ.

Association with country-of-ancestry preferences

Table 2: Gender Gap in Financial Literacy in the US and Gender Gap in Preferences in the Country of Ancestry

	Panel A: OLS estimates				
	(1)	(2)	(3)	(4)	(5)
Female	-0.131***	-0.161***	-0.133***	-0.145***	-0.156***
	(0.019)	(0.021)	(0.011)	(0.015)	(0.028)
Patience gap	-0.318***				0.006
	(0.076)				(0.114)
Female×Patience gap	0.070				-0.182
	(0.071)				(0.169)
Risk-Taking gap		-0.053			
		(0.113)			
Female ×Risk-Taking gap		-0.077			
		(0.081)			
Altruism gap			0.290***		0.295***
			(0.028)		(0.080)
Female×Altruism gap			-0.112**		-0.230*
			(0.047)		(0.130)
Pos. Reciprocity gap				-0.076	
				(0.176)	
Female× Pos. Reciprocity gap				-0.038	
				(0.123)	
N	8501	8501	8501	8501	8501
Individual controls	X	X	X	X	X

Gender gap in financial literacy net of preferences

Table 3: Country-of-Ancestry Gender Gap in Financial Literacy Net of Preferences and Financial Knowledge in the US

Residuals from	(1) Patience	(2) Risktaking	(3) Altruism	(4) Pos. Reciprocity	(5) Altruism and Patience	(6) All
Female	-0.150***	-0.146***	-0.145***	-0.144***	-0.151***	-0.150***
	(0.009)	(0.007)	(0.007)	(0.008)	(0.009)	(0.010)
Origin Country $S\&P$ Gap Residuals	-0.317	-0.442*	-0.445*	-0.424	0.317	-0.290
	(0.240)	(0.229)	(0.258)	(0.260)	(0.253)	(0.261)
Female×Origin Country $S\&P$ Gap Residuals	0.501***	0.506***	0.528***	0.535***	0.514***	0.559***
	(0.094)	(0.088)	(0.099)	(0.101)	(0.107)	(0.117)
$\hat{\beta}_2 + \hat{\beta}_3$	0.183	0.064	0.083	0.111	0.197	0.269
	(0.191)	(0.232)	(0.225)	(0.223)	(0.191)	(0.183)
N	8858	8858	8858	8858	8858	8858
Individual controls	X	X	X	X	X	X

Conclusion

- **Cultural beliefs regarding gender convergence in financial knowledge beyond those associated with patience and altruism** are associated with women's (relative and absolute) greater financial literacy in the US.

- **More patience and less altruism in the country of ancestry** is associated with greater financial knowledge for men but not for women in the US. The relative and absolute female improvement is particularly robust for knowledge related to inflation and risk-diversification.