Golden handcuffs and family ties: Stock ownership is shaped by social forces

EEA Meeting, Malaga

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Chicago Booth

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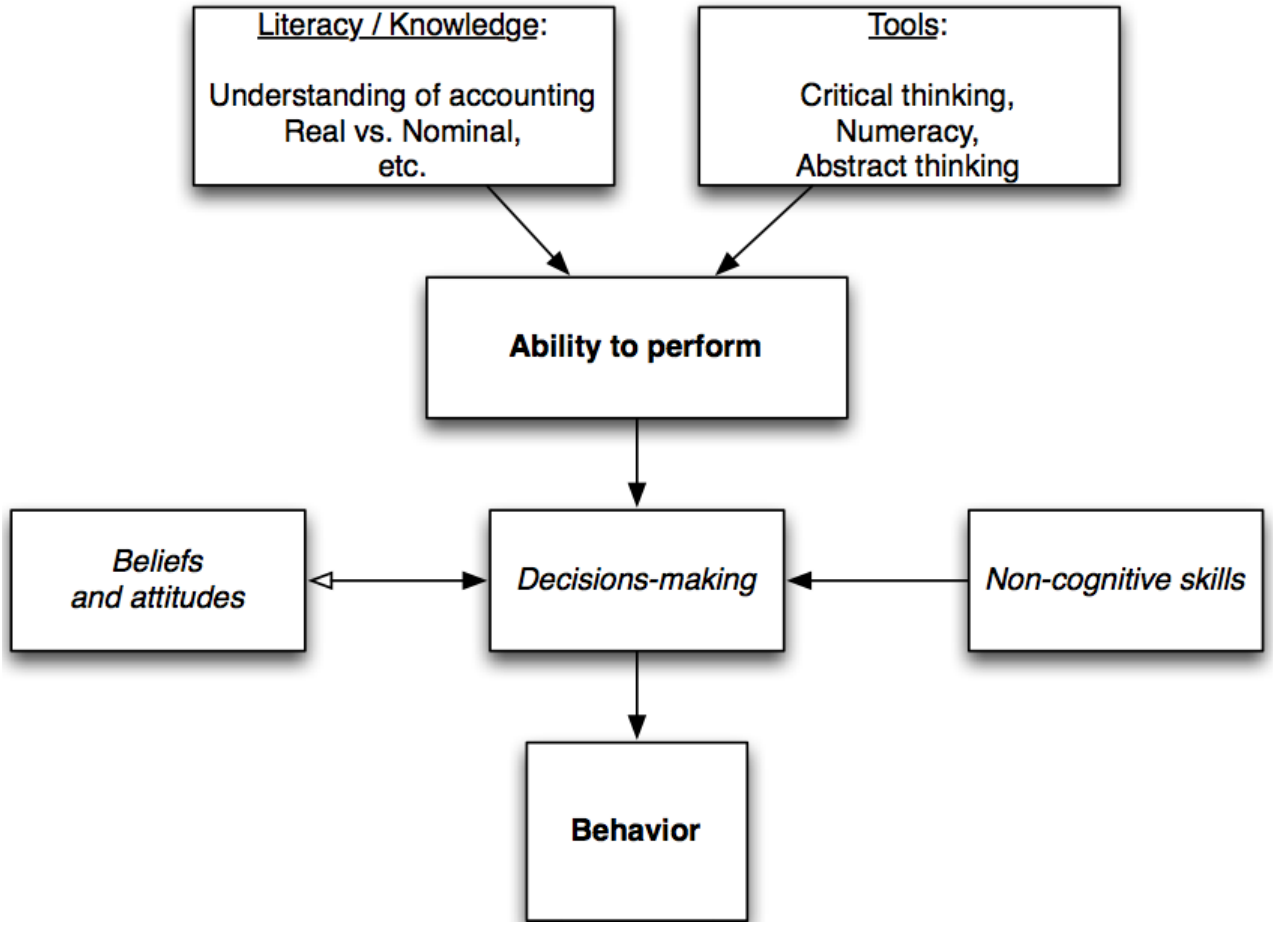
Questions in consumer finance

Why do so few people hold stocks?

Why don't people diversify better?

(home bias, preference for employer's stock, etc.)

Framework

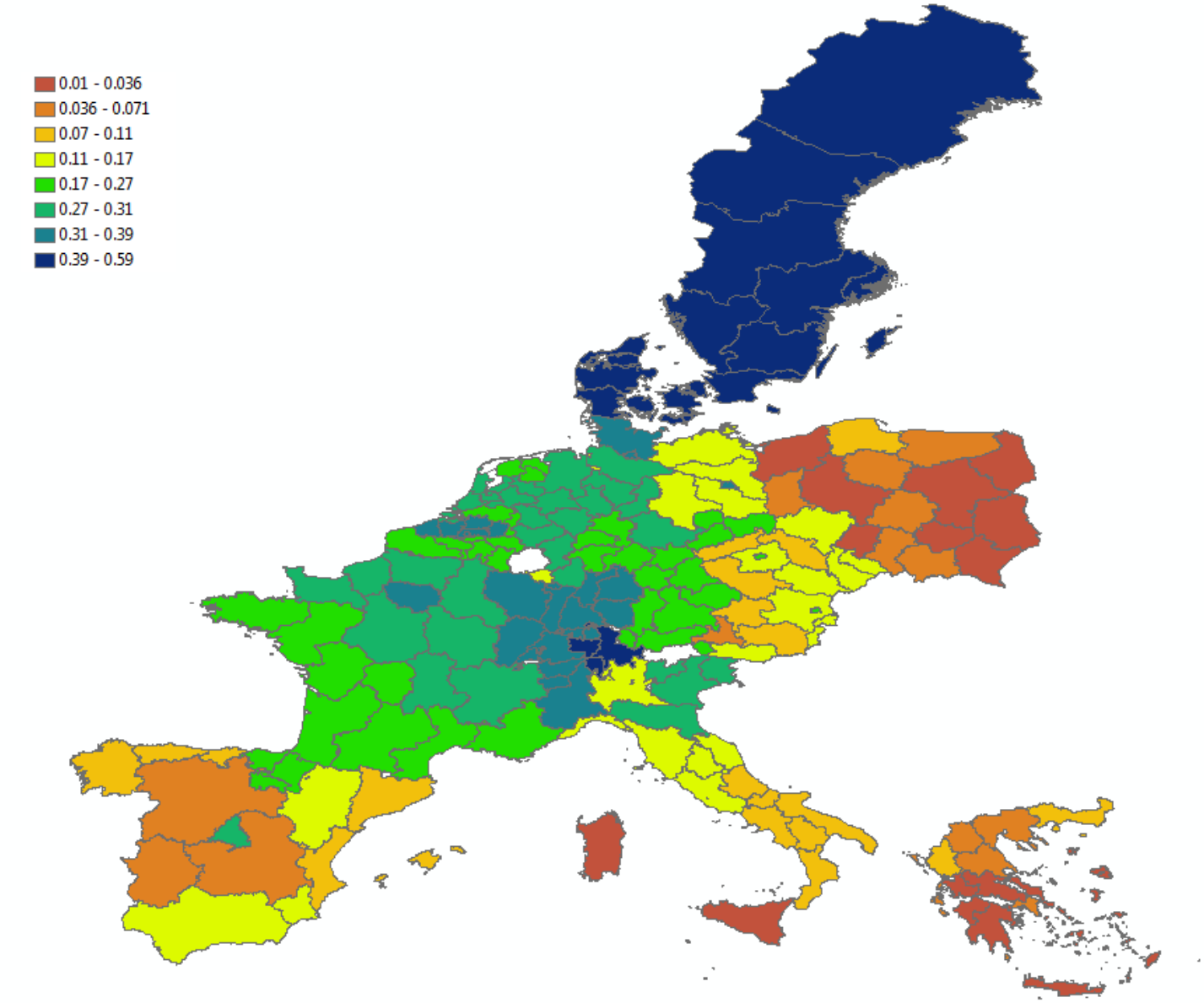

Literacy / Knowledge:
Understanding of accounting
Real vs. Nominal,
etc.
Tools:
Critical thinking,
Numeracy,
Abstract thinking
Ability to perform
Beliefs
and attitudes
Decisions-making
Non-cognitive skills
Behavior

	Effect direction	*Selected references*
Demographics		
Education	(+)	Haliassos and Bertaut (1995), Campbell (2006)
Wealth[3]	(+)	Calvet, Campbell and Sodini (2007)
Age	Hump-shaped [Decisions]	Agarwal, Driscoll, Gabaix and Laibson (2009)
Age	(-) [Literacy]	Finke, Howe and Huston (2011)
Cognitive ability	(+)	Grinblatt, Keloharju and Linnainmaa (2011), Christelis et al. (2010), Benjamin et al. (forthcoming)
Trust	(+)	Guiso, Sapienza and Zingales (2008), Cole et al. (forthcoming)
Gender (female)	(-)	Lusardi and Mitchell (2008), Fonseca et al. (2012)
Being an economist	(+)	Christiansen et al. (2008)
Beliefs		
Return expectations	(+)	Hurd (2009), Hurd et al. (2011), Kzdi and Willis (2011)
Survival expectations	(+)	Puri and Robinson (2007)
Over-optimism	(-)	Dawson and Henley (2012)
Left-wing preferences[4]	(-)	Kaustia and Torstila (2011)
Patriotism	(-)	Morse and Shive (2011), Zilinsky (2012b)
Attitudes		
Risk aversion	(-)	Haliassos and Bertaut (1995)
Loss aversion	(-)	Dimmock and Kouwenberg (2010)
Experiences		
Choices by parents	(+)	Li (2009), Chiteji and Stafford (2000)
Negative childhood experience	(+)	Malmendier and Nagel (2011)
Required financial literacy course	None	Cole and Shastry (2010)
Required math course	(+)	Cole and Shastry (2010)
Experience with excessive debt	(-)	Lusardi and Tufano (2009)
Other		
Simplified choice	(+)	Choi, Laibson and Madrian (forthcoming)
Digestible information	(+)	Bertrand and Morse (2011)
Requiring active choice	(+)	Carroll, Choi, Laibson, Madrian and Metrick (2009)
Presence of default enrollment	(+/-)	Choi, Laibson, Madrian and Metrick (2004) (+/-), Cronqvist and Thaler (2004) (+)
Access to the Internet	(+)	Bogan (2008)

Three social determinants

1. **Trust:** Social capital
   - Most people can be trusted / You can't be too careful (1/0)
   - Most people try to take advantage of you / try to be fair (1-10)
2. **Family ties and responsibilities**
   - How important is family in your life? (1-4; 1=very, 2=quite, 3=not)
   - Duty towards society to have children (1-5)
   - It is child's duty to take care of an ill parent (1-5)
3. **Attitudes to women (traditionalism)**
   - Women need children in order to be fulfilled (1=yes, 2=no)
   - Men should take the same responsibility for home and children (1-4; 1=agree strongly)

Ownership rates



Background

- **Trust:**
  - Guiso, Sapienza and Zingales (2004): Regional social capital predicts investment in stocks in Italy
  - Guiso, Sapienza and Zingales (2008): Survey of 1156 Dutch households $\rightarrow$ people who lack trust in others are less likely to own stocks
- **Financial market development:**
  - Higher (social) level of trust can promote financial development, increase trade and economic growth (Fukuyama 1995, Knack and Keefer 1996, Algan and Cahuc 2008, Guiso, Sapienza and Zingales 2004, Tabellini 2009)
  - On an individual level, the optimal level of trust is less clear (Butler, Giuliano and Guiso, 2009)
- Vissing-Jorgensen (2003): We need direct evidence on investor beliefs
- Hurd (2009): Expectations/beliefs matter
- My view: with surveys and tracking methods (e.g. on-line traffic data) we will get better time use and beliefs data

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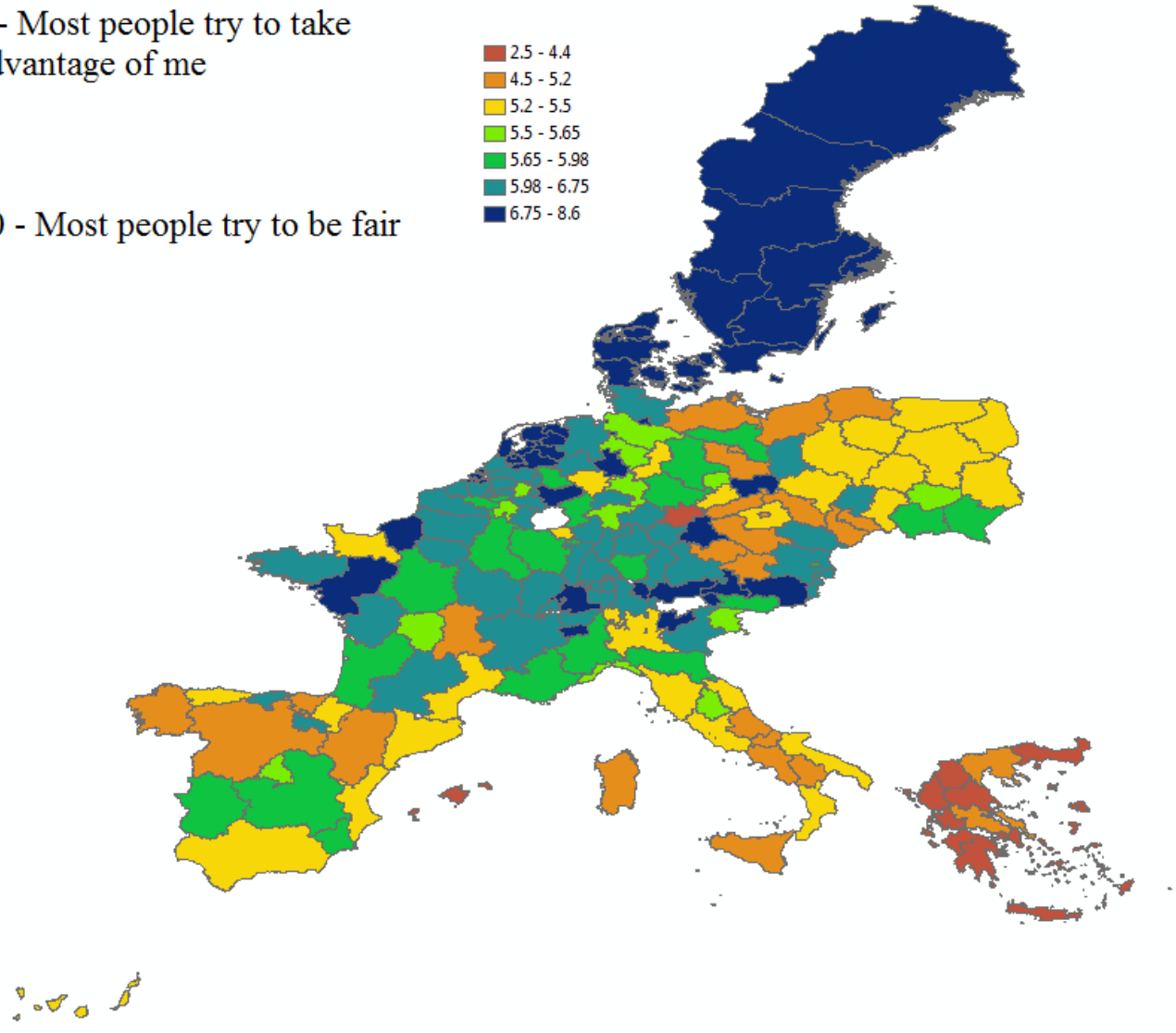
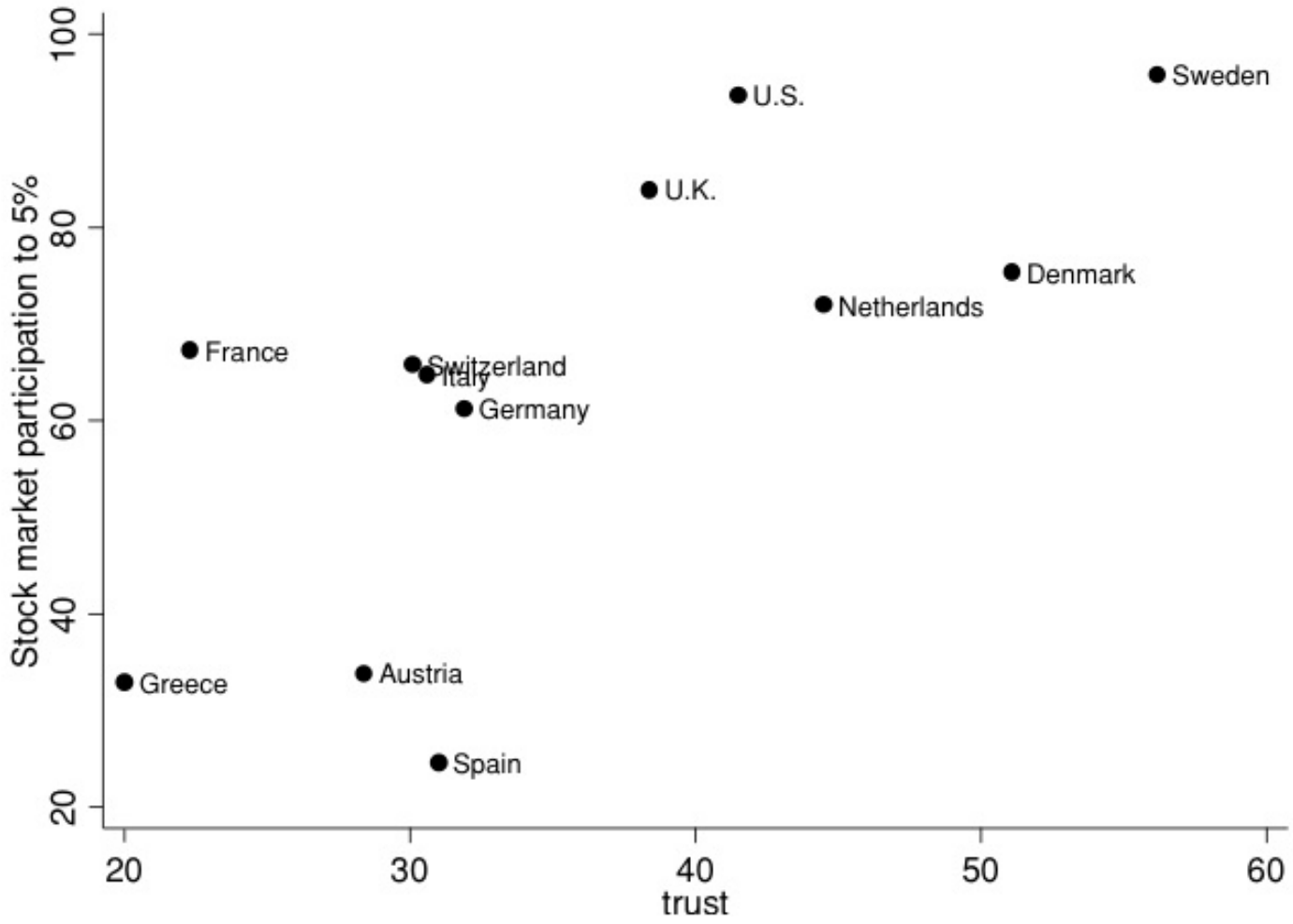
1 - Most people try to take advantage of me

10 - Most people try to be fair

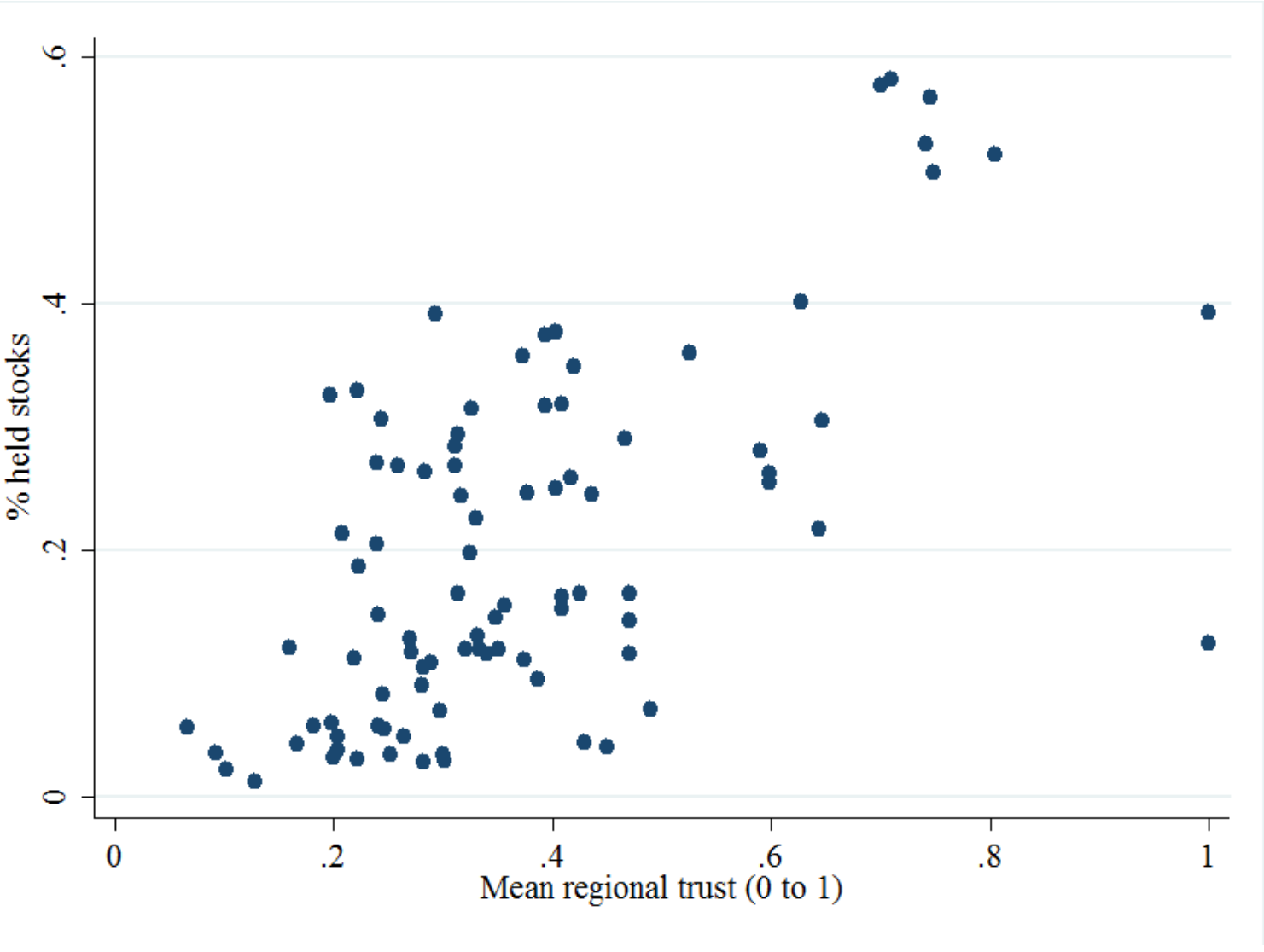


Earlier (cross-country) work

WWS and stock ownership (Guiso et al., 2008)



Ownership and trust by region



Formalizing trust

- Gennaioli, Shleifer and Vishny (2012) formalize the idea that money managers deliver other things than performance
- "[I]nvestors delegate portfolio management to professionals based not only on performance, but also on trust"
- Investors receive "intangible benefits" "babysitting" or "peace of mind"
- Catering to pre-existing beliefs, self-serving and not necessarily optimal recommendations

Power of the family

- Family ties are a source of potential benefits and guaranteed **obligations** (so competing demands on time imply less time available for research about financial products or investment into financial literacy in general)
- Alesina and Giuliano (2010): "With strong family ties home production is higher, labor force participation of women and youngsters, and geographical mobility, lower. Families are larger (higher fertility and higher family size) with strong family ties."
- If the purpose is *insurance*, it can be optimal to start a family business instead
- If the purpose is *saving*, some stock ownership is optimal for almost everyone
- Informal insurance schemes can fall apart when new financial products are introduced (observability of income is key for effective risk-sharing).

Empirical specification

$$Owned_{cri} = Beliefs_r + Education_i + Children_i + Gender_i + \mathbf{X}_c + \epsilon_{cri}$$

Each observation is individual i in region r in country c

Ownership – Have you ever owned stocks?
Beliefs – Views about trust or family in region r
Education – Age when left school
Children – Number of children
X – vector of country controls

Trust (binary)

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Held stock at some point (Yes/No)				
Regional trust	2.358**		2.359**	2.065**	1.353**
	(10.86)		(10.96)	(9.73)	(3.16)
Bought home		0.254**	0.206**	0.202**	0.226**
		(4.28)	(5.24)	(5.76)	(5.09)
Female			-0.400**	-0.351**	-0.364**
			(-19.99)	(-15.07)	(-8.93)
Children (yes/no)				-0.0585**	-0.0676**
				(-4.66)	(-6.15)
Age when finished school				0.0735**	0.0693**
				(10.04)	(6.26)
Log per cap. GDP					0.956**
					(2.66)
Unemployment					YES
Long-term unemployment					YES
Female labor participation					YES
Gov. debt/GDP					YES
Gov. revenue/GDP					YES
Observations	24332	24346	24332	20629	19759
Pseudo R^2	0.095	0.007	0.116	0.158	0.187
SE clusters	Region	Region	Region	Region	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Trust (1-10)

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Held stock at some point (Yes/No)				
Trust (1 to 10)	0.485**	0.492**	0.431**	0.411**	0.281**
	(14.67)	(14.46)	(13.92)	(13.29)	(2.88)
Female		-0.407**	-0.361**		
		(-18.76)	(-14.72)		
Children (yes/no)			-0.0680**	-0.0670**	-0.0696**
			(-5.50)	(-5.61)	(-6.44)
Age when finished school			0.0706**	0.0754**	0.0757**
			(10.32)	(11.06)	(6.67)
Bought home				0.195**	0.208**
				(6.55)	(5.57)
Log per cap. GDP					1.066**
					(3.15)
Unemployment					YES
Long-term unemployment					YES
Female labor participation					YES
Gov. debt/GDP					YES
Gov. revenue/GDP					YES
Observations	24332	24332	20629	20629	19759
Pseudo R^2	0.111	0.129	0.165	0.155	0.174
SE clusters	Region	Region	Region	Region	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

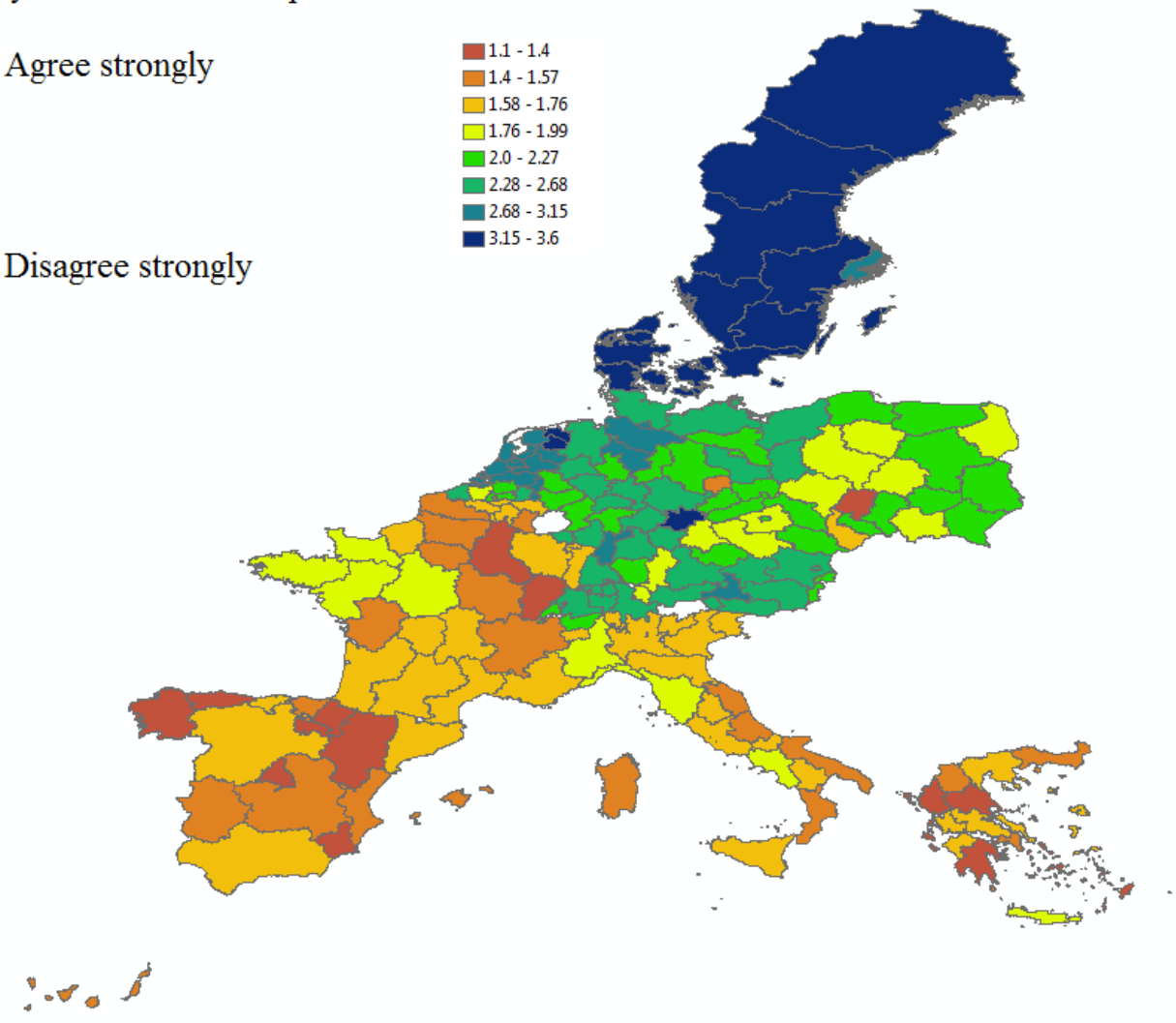
Family ties

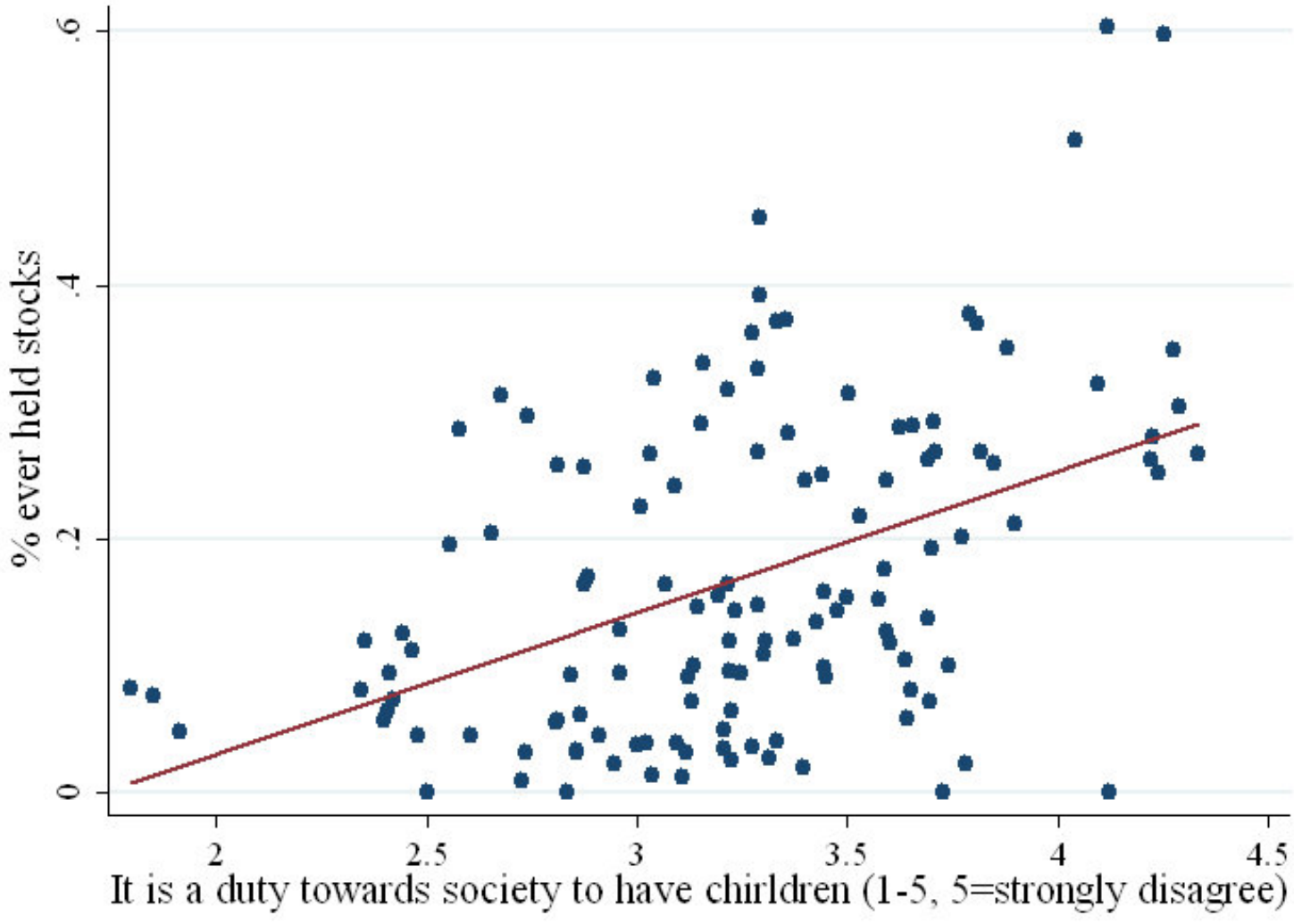
- Duty towards society to have children (1-5)
- It is child's duty to take care of an ill parent (1-5)
- How important is family in your life? (1-4; 1=very, 2=quite, 3=not)

Duty to take care of ill parents:

1 - Agree strongly

5 - Disagree strongly




% ever held stocks
0
.2
.4
.6
2
2.5
3
3.5
4
4.5
It is a duty towards society to have chirldren (1-5, 5=strongly disagree)

Family: Duty to have children

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Held stock at some point (Yes/No)				
Duty to have children	0.779**	0.788**	0.711**	0.431**	0.246+
	(7.80)	(7.70)	(8.03)	(6.38)	(1.80)
Female		-0.390**	-0.334**	-0.355**	-0.363**
		(-18.62)	(-13.13)	(-14.83)	(-8.90)
Children (yes/no)			-0.0673**	-0.0665**	-0.0706**
			(-5.36)	(-5.89)	(-6.46)
Age when finished school			0.0811**	0.0737**	0.0708**
			(14.31)	(10.30)	(6.28)
Bought home				0.213**	0.237**
				(5.81)	(5.18)
Regional trust				1.364**	1.069**
				(6.07)	(2.76)
Log per cap. GDP					0.796+
					(1.88)
Unemployment					YES
Long-term unemployment					YES
Female labor participation					YES
Gov. debt/GDP					YES
Gov. revenue/GDP					YES
Observations	24332	24332	20629	20629	19759
Pseudo R^2	0.082	0.099	0.148	0.173	0.189
SE clusters	Region	Region	Region	Region	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

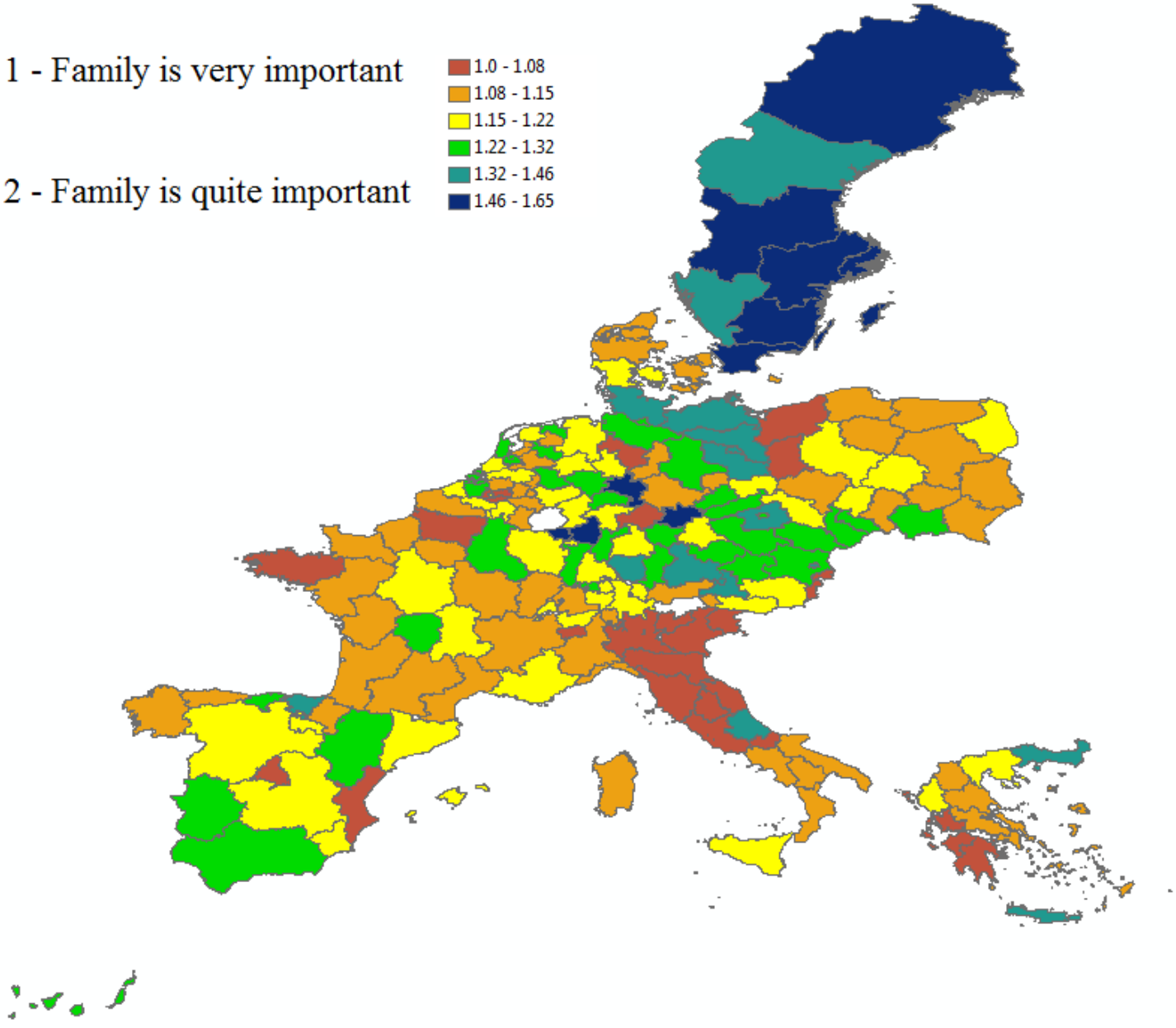
Family: Duty to take care of ill parents

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Held stock at some point (Yes/No)				
Duty: care of ill parents	0.617**	0.626**	0.529**	-0.0330	0.124
	(9.62)	(9.58)	(7.86)	(-0.27)	(0.75)
Female		-0.395**	-0.345**	-0.350**	-0.364**
		(-20.32)	(-14.95)	(-15.06)	(-8.93)
Children (yes/no)			-0.0564**	-0.0585**	-0.0679**
			(-4.35)	(-4.64)	(-6.18)
Age when finished school			0.0739**	0.0737**	0.0689**
			(9.68)	(9.73)	(6.17)
Bought home				0.202**	0.221**
				(5.74)	(5.15)
Regional trust				2.171**	1.097+
				(4.83)	(1.75)
Log per cap. GDP					0.943*
					(2.57)
Unemployment					YES
Long-term unemployment					YES
Female labor participation					YES
Gov. debt/GDP					YES
Gov. revenue/GDP					YES
Observations	24332	24332	20629	20629	19759
Pseudo R^2	0.084	0.101	0.141	0.158	0.187
SE clusters	Region	Region	Region	Region	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

1 - Family is very important

2 - Family is quite important



Family: Reported importance

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Held stock at some point (Yes/No)				
Family: importance	1.817**	1.842**	1.468**	0.319	0.429
	(3.39)	(3.38)	(2.69)	(1.14)	(0.97)
Female		-0.376**	-0.315**	-0.352**	-0.365**
		(-17.52)	(-11.39)	(-14.93)	(-9.10)
Children (yes/no)			-0.0446**	-0.0576**	-0.0664**
			(-3.00)	(-4.65)	(-5.95)
Age when finished school			0.0847**	0.0730**	0.0688**
			(15.43)	(9.92)	(6.24)
Bought home				0.204**	0.230**
				(5.90)	(5.00)
Regional trust				1.994**	1.299**
				(9.60)	(3.17)
Log per cap. GDP					0.945**
					(2.94)
Unemployment					YES
Long-term unemployment					YES
Female labor participation					YES
Gov. debt/GDP					YES
Gov. revenue/GDP					YES
Observations	24332	24332	20629	20629	19759
Pseudo R^2	0.022	0.038	0.098	0.159	0.187
SE clusters	Region	Region	Region	Region	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

On-line survey

- 820 people with internet connection in the U.S. recruited
- Answered questions about themselves (demographics, time use, beliefs) and financial literacy and experience questions
- Activity in the past 2 months: spending time with your family (4-1) (frequently / occasionally / seldom / never)

On-line survey: results

	Dependent variable:					
	Has owned stocks			*Would like to own sotcks*		
	(1)	(2)	(3)	(4)	(5)	(6)
Time spent with family	-0.168**	-0.112*	-0.0450	-0.162**	-0.141*	-0.124+
	(-3.21)	(-2.03)	(-0.78)	(-2.62)	(-2.23)	(-1.90)
Female	-0.383**	-0.383**	-0.542**	-0.529**	-0.496**	-0.510**
	(-4.09)	(-3.92)	(-5.01)	(-4.85)	(-4.50)	(-4.42)
Education		0.372**	0.252**		0.0154	-0.00424
		(6.68)	(4.20)		(0.25)	(-0.06)
Income (self-reported)		0.0750**	0.0875**		0.0343	0.0379+
		(4.25)	(4.79)		(1.62)	(1.76)
Age			0.0522**			0.00303
			(7.80)			(0.48)
Trust			YES			YES
Attitude to risk			YES			YES
Race indicators			YES			YES
Cautious (self-reported)			YES			YES
Impulsive (self-reported)			YES			YES
Voted for Obama			YES			YES
N	818	816	814	818	816	814
Pseudo r-squared	0.0200	0.0812	0.169	0.0354	0.0389	0.0628

Probit regressions. t statistics in parentheses; constants not reported, + $p < 0.1$, ** $p < 0.01$

Next: Traditional beliefs

Conservatism 1: Division of responsibility

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Held stock at some point (Yes/No)					
	Sub-sample:					
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
Men should take same resp. for children, home	-1.283**	-1.264**	-0.914**	-0.736**	-0.596**	-0.528*
	(-4.15)	(-4.22)	(-5.65)	(-4.82)	(-2.67)	(-1.97)
Age when quit school	0.0816**	0.0793**	0.0766**	0.0655**	0.0748**	0.0605**
	(16.22)	(10.49)	(11.78)	(7.48)	(7.43)	(4.74)
Bought home	0.221**	0.252**	0.168**	0.202**	0.195**	0.239**
	(4.35)	(5.44)	(3.97)	(6.13)	(3.93)	(5.37)
Children (yes/no)			-0.0448**	-0.0766**	-0.0455**	-0.0801**
			(-2.98)	(-5.20)	(-3.80)	(-5.55)
Regional trust			1.787**	1.839**	1.074**	1.430**
			(9.66)	(10.42)	(2.91)	(3.61)
Log per cap. GDP					1.222**	0.796**
					(5.69)	(3.07)
Unemployment					YES	YES
Long-term U					YES	YES
Fem. labor part.					YES	YES
Gov. debt/GDP					YES	YES
Gov. revenue/GDP					YES	YES
Observations	10507	12947	9125	11504	8736	11023
Pseudo R^2	0.102	0.100	0.157	0.152	0.184	0.170

Conservatism 2: "Women need kids"

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Held stock at some point (Yes/No)					
	Sub-sample:					
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
Women need children	0.818*	0.667+	0.414*	0.285	0.109	0.145
	(2.30)	(1.74)	(2.11)	(1.31)	(0.57)	(0.57)
Age when quit school	0.0855**	0.0863**	0.0794**	0.0693**	0.0764**	0.0623**
	(18.60)	(15.26)	(11.27)	(7.43)	(7.62)	(4.70)
Bought home	0.284**	0.305**	0.206**	0.232**	0.211**	0.256**
	(5.17)	(5.41)	(4.62)	(6.25)	(4.24)	(5.67)
Children (yes/no)			-0.0441**	-0.0801**	-0.0515**	-0.0874**
			(-2.85)	(-5.75)	(-4.12)	(-6.09)
Regional trust			1.871**	1.982**	1.138*	1.477**
			(6.86)	(7.03)	(2.50)	(3.49)
Log per cap. GDP					1.122**	0.693+
					(3.16)	(1.83)
Unemployment					YES	YES
Long-term U					YES	YES
Fem. labor part.					YES	YES
Gov. debt/GDP					YES	YES
Gov. revenue/GDP					YES	YES
Observations	10507	12947	9125	11504	8736	11023
Pseudo R^2	0.092	0.084	0.148	0.145	0.181	0.169
SE clusters	Region	Region	Region	Region	Country	Country

t statistics in parentheses, + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

To sum up

- Most responses about family predict stock ownership
- All responses about trust do
- Fewer people own stocks in regions with traditional/patriarchal beliefs
- People with fewer children are more likely to own stocks
- On an individual level, education is very important
- On a country level, $GDP \uparrow \;\; \Rightarrow \;\; Stock\ Ownership \uparrow$

- One of the most important and under-studied areas of **macroeconomics:** economic behavior of families in China
- Fukuyama (1995) on Italy and China: In spite of cultural, religious, and historical differences, *"[i]n both cases, the family plays a central role among social structures, with a corresponding weakness of nonkinship-based organizations ... parts of Italy are essentially Confucian in nature, and their challenge in adapting to changing economic conditions will be similar."*

Conclusion

Welfare implications?

- As mentioned, baseline obviously matters (No claims about optimality, just description)
- Using a representative panel of German households, Bucher-Koenen and Ziegelmeyer (2011) show that low financial literacy individuals were less likely to own stocks and on average reported lower wealth loss.

Conclusion

Now that we accept that social norms play a role in shaping economic relationships, difficult tasks are ahead (which norms are persistent, how elastic they are, how can we price them, etc.)

Thank you