
Household Financial Literacy, Financial Innovation, and Product Regulation

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- Shiller: *"The basic mission of finance is to set up arrangements whereby people may pursue risky opportunities without themselves being destroyed by this risk, and arrangements that incentivize people to behave in a socially constructive manner."*
- My talk is about
 - financial behavior of *households* in the face of new or complicated financial products
 - the uneven potential for crisis across countries, household groups, and products
 - our potential to avert crises through policy design or regulation

Recent Work I will Draw Heavily On

- Haliassos, M. (ed.), *Financial Innovation and Economic Crisis*, MIT Press (forthcoming, 2013)
[Contributors: Ackermann, Barberis, Campbell, Case, Greenwood, Issing, Shiller, Shleifer, Smets, Smith, Vassalou, Viceira]
- Christelis, Georgarakos, Haliassos, "Differences in Portfolios Across Countries: Economic Environment versus Household Characteristics", *Review of Economics and Statistics*, forthcoming in 2013.
- Hackethal, Haliassos, Jappelli, "Financial Advisors: A Case of Babysitters?", *Journal of Banking and Finance*, 2012.
- Biliass, Georgarakos, Haliassos, "Portfolio Inertia and Stock Market Fluctuations", *Journal of Money, Credit, and Banking*, 2010

Financial Innovation: Providing Opportunities

- Plenty of opportunities for use of innovative (but information intensive) products:
 - Accumulating for old age: e.g. individual retirement accounts
 - Saving on interest costs: refinancing opportunities
 - Handling longevity risk: (deferred) annuities
 - Handling inflation risk: e.g. indexed bonds
 - Handling house price risk: e.g. home equity insurance plans or index-based and cash-settled futures and options (e.g., with reference to C-S index)
 - Handling macro risks: Macro markets, e.g. an index-based market for shares of national income or per capita national income

Household Financial Behavior: Potential for Crisis

- Key aspects of household behavior that could contribute to crises:
 - Investment mistakes: failure to use the right products; overexposure to risk
 - Over-borrowing leading to financial distress (e.g. negative equity)
 - Overtrading, unwarranted changes in participation status
- Recent HF studies suggest that financial behavior differs crucially
 - By country
 - By household characteristics
 - By financial product and its location (type of account)
- This variation creates an uneven potential for crisis:
 - Across countries
 - Across household groups
 - with distributional effects
 - Across financial products
 - Potential for product bans or access restrictions?

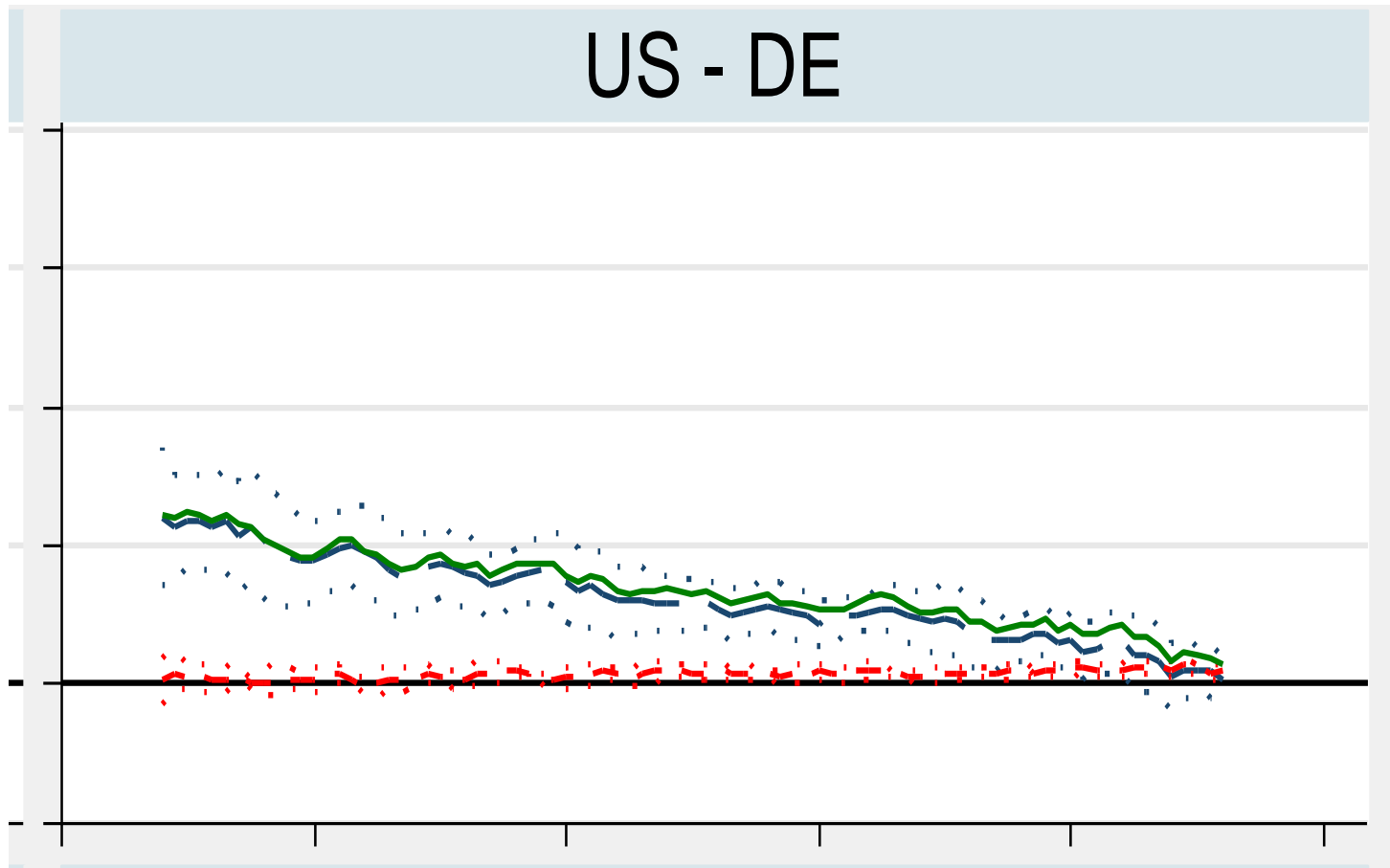
The Uneven International Terrain of Household Portfolios

Source: Christelis, Georgarakos, Haliassos (forthcoming, REStat 2013)
 Computed using: SHARE 2004, HRS 2004, ELSA 2004 (Households 50+)

Country/ Region	Number of Households	NET WORTH				STOCKS				HOME				MORTGAGE		
		Quantiles			Prevalence (%)	Quantiles among owners			Prevalence (%)	Quantiles among owners			Prevalence (%)	Quantiles among holders		
		25	50	75		25	50	75		25	50	75		25	50	75
United States	13,073	40.0	162.1	437.0	49.7	11.0	49.5	169.0	77.3	80.0	150.0	250.0	38.3	32.0	70.0	125.0
Midwest	3,170	52.0	178.2	428.1	54.5	10.0	45.0	150.2	80.9	82.0	132.0	200.0	39.3	30.0	65.0	105.0
Northeast	2,125	39.7	193.5	475.9	54.7	11.0	52.0	172.5	70.6	92.0	190.0	340.0	32.5	32.0	70.0	124.0
South	5,138	29.9	113.0	326.0	42.6	10.0	43.9	153.0	78.3	63.0	100.0	180.0	36.5	28.5	58.0	102.0
West	2,399	53.0	228.5	582.0	52.1	14.0	53.3	182.5	76.9	140.0	250.0	400.0	46.0	50.0	100.0	178.7
Europe	25,394	28.4	147.6	307.5	27.0	3.6	10.6	31.0	68.3	109.8	178.3	291.1	14.9	12.3	36.0	76.6
Sweden	2,140	22.5	90.6	219.7	70.8	4.0	12.1	33.3	68.9	51.2	92.1	153.5	40.2	15.2	30.7	57.0
Denmark	1,176	14.7	102.9	258.6	56.1	2.7	8.3	22.7	69.2	90.8	136.2	204.2	44.3	28.4	56.7	90.8
Germany	2,002	11.8	95.4	272.6	25.4	3.5	9.4	26.2	51.2	136.3	209.7	314.6	14.8	12.6	36.7	83.3
Netherlands	1,954	9.6	140.4	336.4	24.9	4.6	15.2	42.1	55.2	192.3	253.0	374.4	43.1	23.8	54.6	110.4
Belgium	2,532	96.6	199.4	370.0	37.7	5.1	20.4	69.6	80.0	127.4	173.6	254.8	11.9	5.2	14.4	32.7
France	2,110	49.4	177.1	348.9	43.0	2.7	8.5	26.6	72.2	124.1	186.2	310.4	11.9	7.9	23.7	51.7
Switzerland	712	35.5	198.4	419.3	36.3	7.2	25.5	89.3	54.8	229.5	317.4	459.1	45.3	51.0	104.6	201.3
Austria	1,409	9.4	112.5	244.5	10.2	3.0	8.1	27.4	56.7	108.0	162.0	270.0	9.2	1.9	10.8	43.2
Italy	1,778	46.4	149.5	297.2	10.4	4.7	14.1	36.1	75.1	95.4	168.7	281.2	5.6	9.6	27.0	56.2
Spain	1,753	73.2	140.7	254.1	12.8	3.9	11.0	24.7	86.9	84.1	131.3	219.7	9.7	9.5	30.2	58.6
Greece	1,982	55.8	111.7	215.6	10.6	1.1	4.7	12.4	84.3	62.0	95.5	148.9	5.5	5.0	18.6	37.2
England	5,721	75.7	257.4	443.3	39.4	4.6	15.6	52.1	76.1	191.5	275.7	398.3	16.8	10.7	27.6	63.3

Mortgages Outstanding in 2004, Among Holders Aged 50+ Most European Countries (except CH and DK)

Source: Christelis, Georgarakos, Haliassos (forthcoming REStat)



Example of a crisis: Subprime

- A nitroglycerin concept:
 - Low interest rates
 - Refinancing opportunities
 - Securitization opportunities
- The accused:
 - Households without foresight
 - Loan officers who approved large loans
 - Rating agencies willing to rate MBS with AAA ratings
 - Policy makers and regulators who failed to monitor and prevent escalation
- Coordination mechanism
 - Rationality advocates: data did not merit an additional risk factor
 - Behavioral (Barberis):
 - Long history of price increases
 - Complexity of financial products
 - Representativeness heuristic/Cognitive dissonance

Alternative to product bans: Financial Literacy

- There is ample evidence that financial illiteracy is present and disproportionately so for certain demographic groups, across a wide spectrum of countries.
- For example, Lusardi and Mitchell (2006) showed that:
 - only 18% of US households aged 51-56 could calculate two-year interest correctly
 - of the rest, only 43% simply failed to compound interest
 - Particularly acute problem in certain education and race groups
- Crucial question: Does financial illiteracy matter for financial outcomes?

Financial Literacy (ctd)

- Regress outcomes on measures of financial literacy today
 - A number of authors have found that poor outcomes (lower wealth, limited stock market participation, lack of retirement planning, use of higher cost credit, being in credit arrears) are correlated with limited basic financial literacy, or advanced financial literacy (e.g., Alessie, Lusardi, Van Rooij, JFE; Disney and Gathergood, 2011).
- Crucial problem: potential for **reverse causality**
- Best reaction so far: look for good instruments by going back in time (e.g. Jappelli and Padula, 2012)
 - Early life conditions?
- What is the time dimension of the effect?

Alternative to product bans: Financial Advice

- The principle of the good car mechanic
- Problems:
 - How much does the advisor know?
 - Dates back to Cowles (1933)
 - Bergstresser, Chalmers, Tufano (RFS 2009): Funds offered through brokers offer inferior returns to those sold directly
 - Do the sick go to the doctor?
 - e.g., Overconfident? Recall discount brokerage data set
 - Hackethal, Haliassos, Jappelli (2012):

The richer, more experienced tend to be matched with advisors
 - Bhattacharya, Hackethal, Kaesler, Loos, Meyer (2012)
 - Random offer of unbiased financial advice to clients of a German brokerage
 - Only 5% accepted the offer of free advice; these tended to be male, older, wealthier, more financially sophisticated.
 - Those who needed the advice most were least likely to accept it

Financial Advice (ctd)

- If households do go to advisors:
 - Are they helped in their actual account performance?
 - Hackethal, Haliassos, Jappelli (2012):
 - Advised accounts offer on average lower net returns and inferior risk-return tradeoffs (Sharpe ratios).
 - Role of incentives: Results apply with stronger force to BFA than IFA
- What type of advice is actually given to households?
 - Mullainathan, Noeth, Schoar (2011):
 - Mystery shoppers with different 'script' initial portfolios sent to financial advisors for first visit (only).
 - Advisors show dramatic bias towards active management than towards index funds
 - Strong evidence of catering to initial portfolio, but also of reversals of advice in the course of the visit

Regulating Access Based on Household Characteristics

- Observed differences across products and markets make it particularly difficult to predict the behavior of households with respect to new products
- A prominent example: Do households overtrade in financial markets?
- Discount brokerage accounts
 - Barber and Odean (JF, 2000; QJE, 2001):
 - Average household turns over 75% of its portfolio annually
 - Earns net stock portfolio returns substantially below market, because of transactions costs
 - Men trade 45 percent more than women
- Retirement Accounts:
 - Ameriks and Zeldes (2004): TIAA-CREF administrative data on retirement portfolios of (mostly) academics in US institutions (1987-96):
 - In 10 years:
 - 47% of account holders made no change in flow allocations, 14% made only one.
 - 73% made no reallocation of accumulated funds, 14% made only one.

How important is the Brokerage Account among Financial Assets of Account Owners? SCF Data

Source: Biliias, Georgarakos, Haliassos (JMCB, 2010)

Year	Mean Unconditional Share	Mean Conditional Share	Median Unconditional Share	Median Conditional Share
1989	0.028*	0.268*	0*	0.190*
1992	0.026	0.189	0	0.094
1995	0.020	0.154	0	0.025
1998	0.035	0.207	0	0.109
2001	0.037	0.190	0	0.094
2004	0.031	0.182	0	0.078
All	0.03	0.194	0	0.093

Regulating Access: Financial products as medicines

- Lots of common elements:
 - Could be dangerous when administered to the wrong people
 - Could be lethal when taken in large doses
 - Could be prescribed to the wrong people by incompetent or irresponsible doctors
 - Producers may find it optimal to standardize and popularize their innovations, so as to operate in a lower-cost, wider-access environment
- A medical solution:
 - Ban lethal or generally harmful medicines
 - Set up FDA to test the products and make sure they are safe
 - Make sure they are only given to the right patients
 - Sold by responsible pharmacists in the right dosage
 - Require prescriptions
 - Fight conflict of interest of doctors by requiring the Hippocratic oath and allowing malpractice suits

Regulating Access: An FDA for financial products?

- Laboratory testing of financial products may not be feasible or reliable
- Maybe testing could be substituted by field experiments run by banks, but these are undesirable and may have real consequences and reputational effects
- Actual use by customers is unpredictable
- Financial advisors may not have the expertise to assess the needs of their clients and the proper dosage of products
- Conflict of interest without
 - an Hippocratic Oath for financial advisors
 - or lawsuits: an adequate framework of investor/borrower protection
- Matching process: the “sick” don’t go to the doctor and are not visited by doctors
 - Ignorant
 - Overconfident
 - Small investors
 - So: Monitor user access:
 - Not only access restrictions but also access promotion!

Concluding Remarks: Challenges Ahead

- Challenges in predicting how new products might be handled by households and in monitoring potential for crises
 - Product- and market- specific financial behavior makes extrapolation difficult
- Challenges in handling differential financial ability of households
 - Alternatives to product bans:
 - Promoting transparent products, default options, targeted financial advice, (early) financial education
 - Developing a legal framework for investor and borrower protection
- Challenges in harmonizing economic environments across countries
- **Mistakes will be made.** Crises should be used as an impetus for more and better financial innovation that helps eliminate the risks that contributed to the previous ones
- Shiller: “[T]he final solution to the world financial crises must come from the further encouragement of [the financial innovation] process. The solution cannot come just from the government or just from a political process. That would be like asking the political leaders for a design for a new locomotive or supersonic jet.”