

Real Estate Shocks and Financial Advisor Misconduct

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CEAR-RSI Household Finance Workshop - 11/17/2018

- ▶ Do household level financial shocks cause professionals to engage in financial misconduct?

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 - What is the relation between wealth and crime/misconduct?
Nature versus nurture

Misconduct as a Risky Activity

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- ▶ Personal wealth shocks affect risk preferences (concavity of utility function)
 - Pool, Stoffman, Yonker, and Zhang (2018) find reduced portfolio risk taking by mutual fund managers who experience housing wealth shocks
 - Bernstein, McQuade, and Townsend (2018) find lower, less novel innovation by inventors who experience housing wealth shocks

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 - Bernstein, McQuade, and Townsend (2018) find lower, less novel innovation by inventors who experience housing wealth shocks
- ▶ Negative wealth shocks could decrease financial misconduct
 - Becker (1968) shows higher wealth will lead to higher crime because of decreasing absolute risk aversion if individuals can assign a monetary price to their honesty, which is wealth independent

Misconduct as a Response to Financial Pressure

- ▶ More recent economic models in which the monetary price of honesty varies with wealth provide ambiguous predictions on relation of crime/misconduct and wealth
 - At the extreme, if destitute, many would likely steal a loaf of bread to feed their family

Misconduct as a Response to Financial Pressure

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- ▶ Criminologists argue that financial pressure encourages fraudulent behavior in professional settings (Cressey's Fraud Triangle)
 - Cressey (1971) interviewed people convicted of embezzlement
 - Nearly all were under financial pressure when began to commit embezzlement
 - Majority of cases financial pressure caused by gambling, alcohol/drug abuse, or reckless spending

Challenge for Empiricists

- ▶ Hard to disentangle financial pressure and misconduct in an observational study
 - Empirical research typically finds a negative association between income and crime (e.g., Gould, Weinberg, and Mustard, 2002)
 - Gambling problems and alcoholism are not randomly assigned (wealth is endogenous)
 - Underlying characteristics that cause financial problems may also cause financial misconduct

An Ideal Experiment

- ▶ Find a well-to-do commodities broker



An Ideal Experiment

- ▶ Find a well-to-do commodities broker
- ▶ Take away his wealth



An Ideal Experiment: Trading Places (1983)

- ▶ Find a well-to-do commodities broker
- ▶ Take away his wealth
- ▶ Observe his behavior



Exogenous Shock to Wealth

- ▶ Housing wealth significantly impacts households
 - “[H]ousing wealth accounts for almost two thirds of the total wealth of the median household” (Federal Reserve Board, 2011)
 - Mian, Rao, and Sufi (2013) show decline in housing wealth resulted in large reductions in consumption following the housing crisis
 - \$1 reduction in housing wealth reduces marginal propensity to consume by 9 cents - Carroll, Otsuka, and Slacalek (2011)
- ▶ U.S. housing bubble collapse was largely unforeseen
 - Cheng, Raina, and Xiong (2014) analyze whether midlevel managers in securitized finance were aware of a large-scale housing bubble and a looming crisis in 2004–2006 using their personal home transaction data. Most securitized finance managers were heavily exposed to real estate.

The Laboratory: Financial Advisor Industry

- ▶ Financial advisors are important financial intermediaries
 - There are more financial advisors than bartenders or auto mechanics (in 2013 (FINRA, 2015; BLS, 2014))
 - In U.S., generate \$100 billion per year in commissions, fees, and research revenue (SIFMA, 2013)
 - Majority of households that invest use an advisor (ICI, 2013) as many have low financial literacy (Lusardi and Mitchell, 2011)

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- ▶ Financial advice is a credence good — difficult for investors to judge merits of advice. High powered incentives. Creates opportunities for misconduct.

The Laboratory: Financial Advisor Industry

- ▶ Regulatory requirements allow us track advisors, their residences, and their conduct over time
 - Central Registration Depository (CRD) maintained jointly by FINRA and state regulators records histories of 1.3M financial advisors, 10,484 registered firms (both public and private)
- ▶ Detailed data on employment history; incidences of misconduct; work and residence addresses
 - About 5.5% of advisors ever have at least one violation (0.6% of advisor-years) in our sample
 - Most common sales practice violations include unauthorized trading, churning, misrepresentation

Residential histories of financial advisors

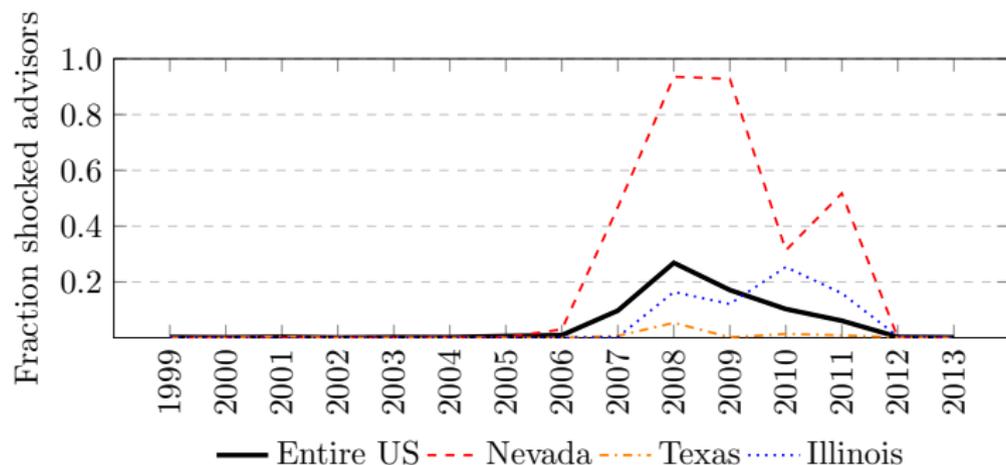
- ▶ Available for a subset of state registrations through FOIA requests
 - Advisors who are registered in one or more of: District of Columbia, Florida, Georgia, Hawaii, Indiana, Iowa, New Jersey, Oregon, Rhode Island, Tennessee, Texas, Washington, or West Virginia
- ▶ We observe 1,075,987 (including pre-industry) residences across all 50 states

Individual CRD#	[REDACTED]
Full Legal Name	[REDACTED]
Other Names Known By	
State of Residence	Texas
Do you have disclosure?	No
Are you subject to Statutory Disqualification?	No

Residential History					
From	To	Street	City	State/Country	Zip
07/01/2000	PRESENT	17671 ADDISON RD #201	DALLAS	TX	75287
05/01/1999	07/2000	3919 ESSEX #127	HOUSTON	TX	77027
06/01/1998	05/1999	3625 WELLBORN	BRYAN	TX	77801
09/01/1997	06/1998	2100 SOUTHWOOD	COLLEGE STATION	TX	77845
09/01/1996	09/1997	316 MANUEL	COLLEGE STATION	TX	77845
05/01/1996	09/1996	14203 BATEAU	CYPRESS	TX	77429
02/01/1977	09/1996	14203 BATEAU	CYPRESS	TX	77429
09/01/1995	05/1996	1 COMMONS LOBBY	COLLEGE STATION	TX	77845

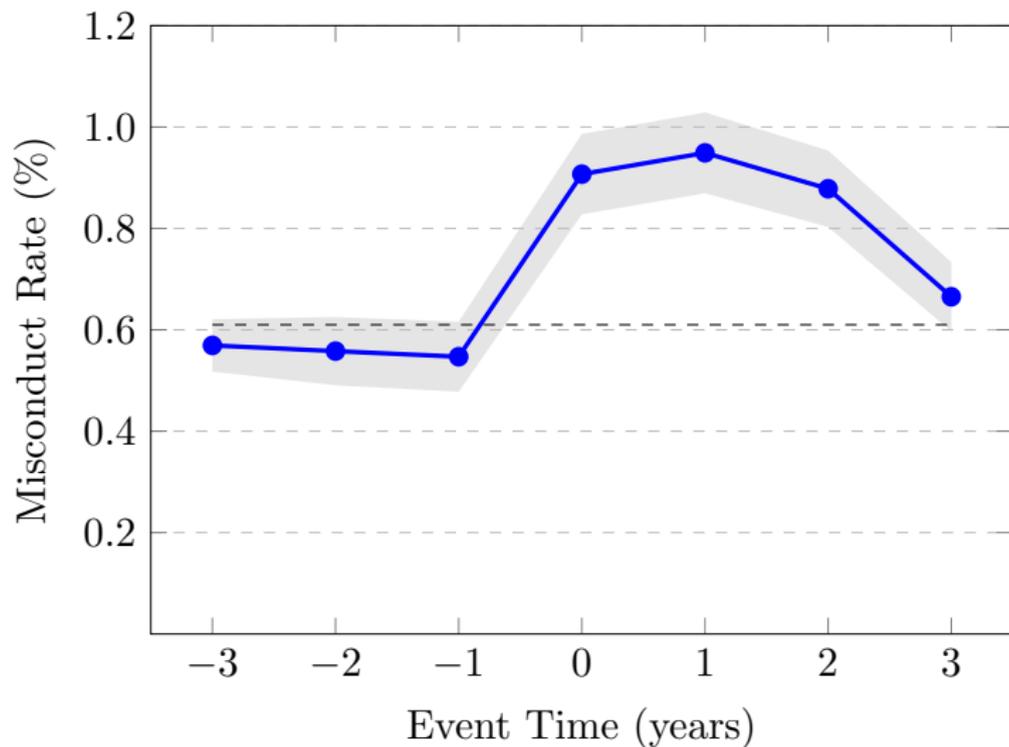
- ▶ We impute prices for the residences using Zillow Real Estate ZIP level data
- ▶ We do not observe whether an individual rents or owns.

Time Series of Real Estate Shocks



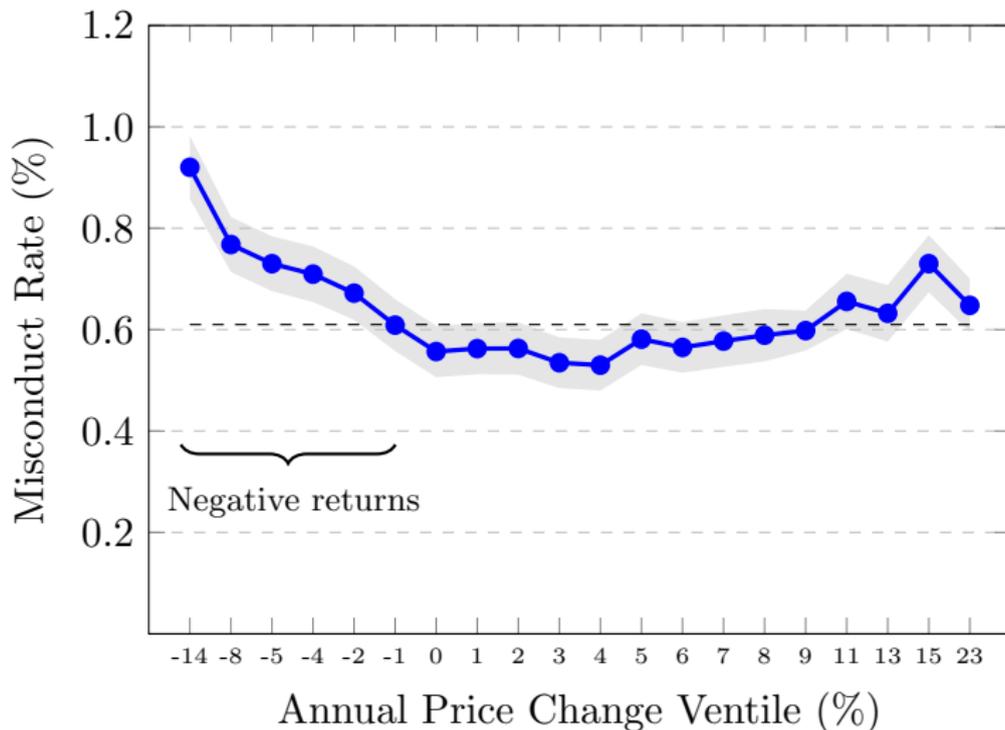
- ▶ 35.1% (45.0%) of advisors (ZIP codes) ever experience a 10% year over year price decline
- ▶ Considerable cross-state variation: nearly all advisors in living in Nevada experience a shock; while fewer than 6% of Texas based advisors do

Misconduct around price shock in a ZIP code



Event is first year-over-year price decline larger than 10% in ZIP.

Misconduct Rates for Annual Price Change Ventiles



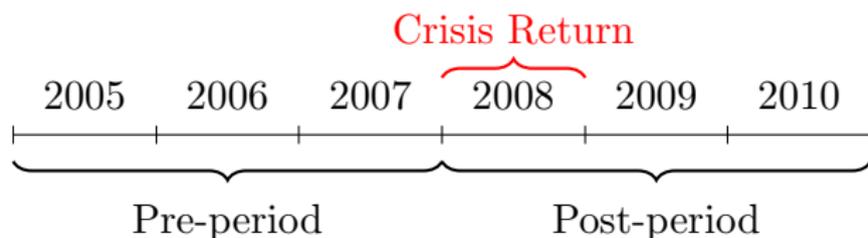
▶ Challenges

- Confounding factors that affect both housing prices and misconduct
- E.g., Miami has one of the highest rates of misconduct and also some of the largest declines in financial crisis

▶ Solutions

- ① Differences-in-differences around the financial crisis
- ② Panel regressions using cumulative return since purchase

Empirical Design: Difference around Crisis



- ▶ Dependent variable is the change in misconduct between pre and post periods
 - Differencing removes time-invariant advisor effects such as gender, education, religious background
- ▶ Key independent variables are measures of housing price shock: % change, indicators for declines of -5%, -10%, -15%
- ▶ Control for advisor's experience in industry, experience at current firm, time at residence, and firm fixed effects

Shocks & Misconduct — Crisis Difference in Difference

Dependent variable = Δ Misconduct

		-5%	-10%	-15%
% Price Change	-0.051*** (0.012)			
Price Drop Dummy		0.055*** (0.001)	0.061*** (0.002)	0.067*** (0.002)
Controls	Yes	Yes	Yes	Yes
Firm FEs	Yes	Yes	Yes	Yes
Observations	248,432	248,432	248,432	248,432

Difference around Crisis

- ▶ An advisor with a 10% price drop on his house is 0.61 percentage points more likely to commit misconduct in the next three years (a 41% increase relative to the baseline)
- ▶ Do not find significant results in placebo test if we replace the 2008 shock returns with returns from 2005 or 2011
- ▶ The approach follows Bernstein, McQuade, and Townsend (2018) and Pool, Stoffman, Yonker, and Zhang (2018)
- ▶ Issues
 - Shock may be asynchronous
 - Advisors can move and change employer
 - Exploits only a subset of our data
 - Local clients also could also be affected by the shock

Cumulative Return from Purchase

- ▶ Two advisors in same ZIP may experience the same year over year shock, but have different cumulative returns

Year	Home Price ZIP 89102	YoY Return	Abe (Purchase in 2000)	Bob (Purchase in 2005)
2000	122,100	-	-	
2001	131,500	8%	8%	
2002	137,300	4%	12%	
2003	150,700	10%	23%	
2004	210,900	40%	73%	
2005	259,800	23%	113%	-
2006	280,500	8%	130%	8%
2007	252,700	-10%	107%	-3%
2008	176,500	-30%	45%	-32%
2009	114,100	-35%	-7%	-56%
2010	96,400	-16%	-21%	-63%
2011	80,100	-17%	-34%	-69%

Cumulative Return from Purchase

- ▶ Cumulative returns predict advisor bankruptcies and “short sales of real estate” (cases in which real estate is sold for less than the amount owed, and the lender accepts less than amount owed)
- ▶ We can track cumulative returns for each advisor in each year in a panel setting (Cluster by advisor and zip code)
- ▶ Still can control for advisor attributes, time at residence, ZIP and firm-year fixed effects.

Cumulative House Price Return and Misconduct

Dependent variable = Misconduct

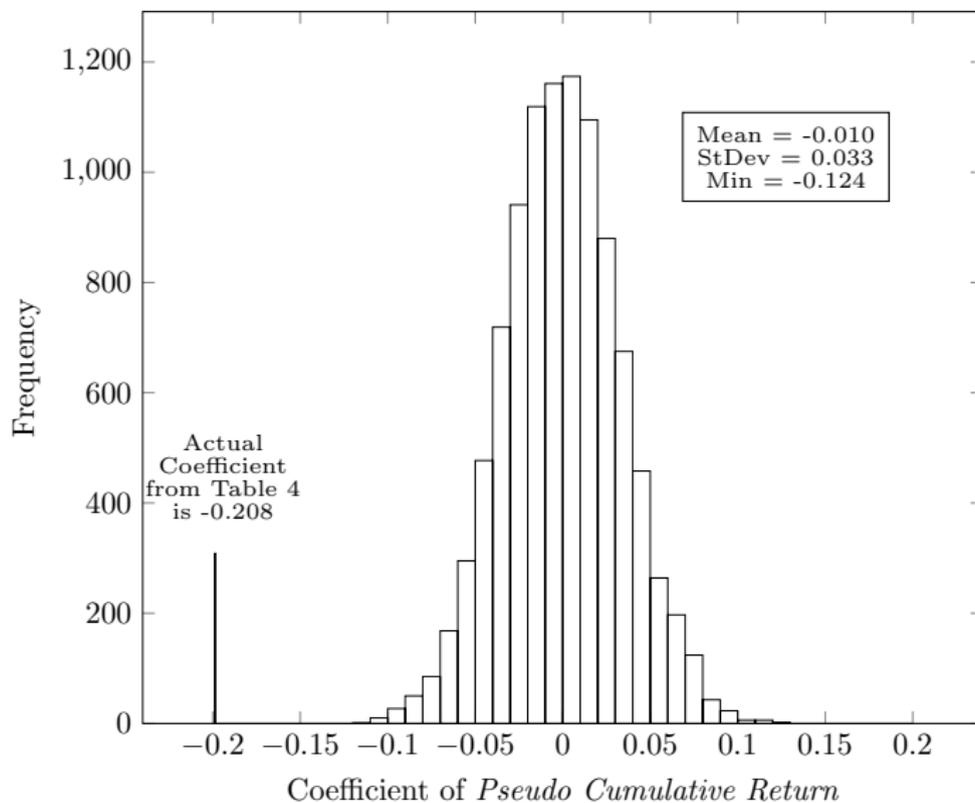
Cumulative %	-0.085*** (0.021)	-0.208*** (0.030)	-0.195*** (0.031)
Cumulative $\times I_{ExtremeLoss}$			-0.466* (0.278)
Advisor Controls	Yes	No	No
Advisor FEs	No	Yes	Yes
Length at Res FEs	Yes	Yes	Yes
Firm \times Year FEs	Yes	Yes	Yes
ZIP Code FEs	Yes	Yes	Yes
Observations	2,882,302	2,860,572	2,860,572

Advisors with worse cumulative returns on their home are significantly more likely to commit misconduct

Cumulative House Price Return: Placebo Test

- ▶ In each iteration of the placebo test, for each ZIP code, replace return history with another randomly selected ZIP
- ▶ Next slide shows coefficient estimates of *Pseudo-Cumulative Return* from regression with advisor, firm-year, and ZIP-year FEs
- ▶ Example:
 - Assign advisors who live in Las Vegas, NV housing returns from Muskogee, OK
 - An advisor in Las Vegas who bought a house in 2000 would receive cumulative return on housing in Muskogee from 2000 to present
 - An advisor in Las Vegas who bought a house in 2005 would receive cumulative return on housing in Muskogee from 2005 to present
 - Retain Muskogee → Las Vegas match for all years within iteration
- ▶ Placebo retains all cross-sectional relations
 - Everyone in the same ZIP code matched to same placebo ZIP code
- ▶ Placebo retains any time-series relations
 - Placebo ZIP code is fixed over time for each placebo replication

Cumulative House Price Return: Placebo Test



Commonality in Customer and Advisor Shock

- ▶ Due to variation in the timing of purchases, cumulative returns vary across advisors living within a ZIP code and working within a branch office in any given year
- ▶ Can include more granular residential ZIP \times year, office branch \times year, and branch \times ZIP \times year fixed effects
 - Remove common effects due to the demographic characteristics or economic circumstances of the local customer base, or any other local commonality

Commonality in Customer and Advisor Shock

	(1)	(2)	(3)
Cumulative Return	-0.1574*** (0.0374)	-0.1268*** (0.0385)	-0.1707** (0.0796)
Advisor FE	Yes	Yes	Yes
Length at Residency FE	Yes	Yes	Yes
Firm×Year FE	Yes	Subsumed	Subsumed
ZIP FE	Subsumed	Yes	Subsumed
ZIP×Year FE	Yes	No	Subsumed
Branch×Year FE	No	Yes	Subsumed
Branch×Year×ZIP FE	No	No	Yes
R-squared	0.188	0.241	0.491
Observations	2,833,467	2,312,551	1,076,138

Similar results across the various levels of fixed-effects.

Commonality in Customer and Advisor Shock

Dependent Variable:	Out-of-State Customers (1)	Regulatory & Firm Actions (2)
Cumulative Return (%)	-0.0463*** (0.0149)	-0.0441** (0.0181)
Advisor FEs	Yes	Yes
Firm×Year FEs	Yes	Yes
ZIP FEs	Yes	Yes
State×Year FEs	No	Yes
Remove obs with complaints	No	Yes
Observations	2,860,572	2,842,344

Similar results for actions bought by non-local clients or other agencies.

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Variation in Career/Termination Risk

	(1)	(2)	(3)
Cumulative Return	-0.161*** (0.031)	-0.140*** (0.031)	-0.284*** (0.036)
Cum. Return×High Firm	-0.090* (0.046)		
Cum. Return×High Branch		-0.143*** (0.044)	
Cum. Return×Female			0.302*** (0.042)

Includes Advisor, Residency, Firm×Year, and ZIP fixed effects

Effects are larger in firms/branches that are more tolerant of misconduct. Effects are smaller for women who face greater threat of punishment after misconduct.

Possible Mechanisms

- ▶ Active misconduct could occur due to:
 - Trading off utility from wealth with utility from ethical behavior (Morrison and Thanassoulis, 2017), and being more willing to trade ethics for wealth when the level of wealth is lower
 - Increased risk taking following losses as implied by prospect theory (Thaler and Johnson, 1990)
- ▶ Passive misconduct could occur if the advisor is distracted or suffers reduced effectiveness at work due to personal financial pressure
 - E.g., Maturana and Nickerson (2017) show that bankruptcy of teachers reduces their students' standardized test scores

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- ▶ Passive misconduct could occur if the advisor is distracted or suffers reduced effectiveness at work due to personal financial pressure
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- ▶ These mechanisms are not mutually exclusive
 - To separate, we model active and passive misconduct separately
 - Active: misrepresentation, churning, unauthorized trading
 - Passive: negligence or omission of key facts
- ▶ While we find evidence of both active and passive misconduct, the majority of misconduct is due to willful actions by the advisor following the real estate shock.

Robustness Tests

- ▶ Results are robust to using other measures of misconduct or house prices
 - Using misconduct measure used by Egan, Matvos, and Seru (2018)
 - Using only misconduct that involves mutual funds (straightforward financial products distributed at national level)
 - Three-year window
 - Using Federal Housing Price Index instead of Zillow
 - Using only highest price residence
- ▶ Our results are robust to excluding multiple dwelling units and ZIP codes with low ownership rates according to the American Community Survey
- ▶ Results are robust to using other timing choices
 - Various window approaches as in Bernstein, McQuade, and Townsend (2018) and Pool, Stoffman, Yonker, and Zhang (2018)
 - Annual returns (instead of cumulative)

Conclusions

- ▶ Negative house price shocks cause increases in misconduct by financial advisors
 - Increase is in both active and passive misconduct
- ▶ People are malleable and their honesty can change with their circumstances
 - For regulators, SROs, and firms' compliance divisions, it is not enough to screen entrants to the industry. Need to adjust monitoring as wealth changes. Our findings provide evidence on where and when additional monitoring resources should be allocated.
- ▶ We document another externality of the housing crisis
 - Negative wealth shocks alter behavior in complex and non-obvious ways. Aggregate social costs of fluctuations in asset prices are greater than simple direct costs.