

BROOKINGS

QUALITY. INDEPENDENCE. IMPACT.

What's Driving Deleveraging? Evidence from the 2007-2009 Survey of Consumer Finances

Karen Dynan

Brookings Institution

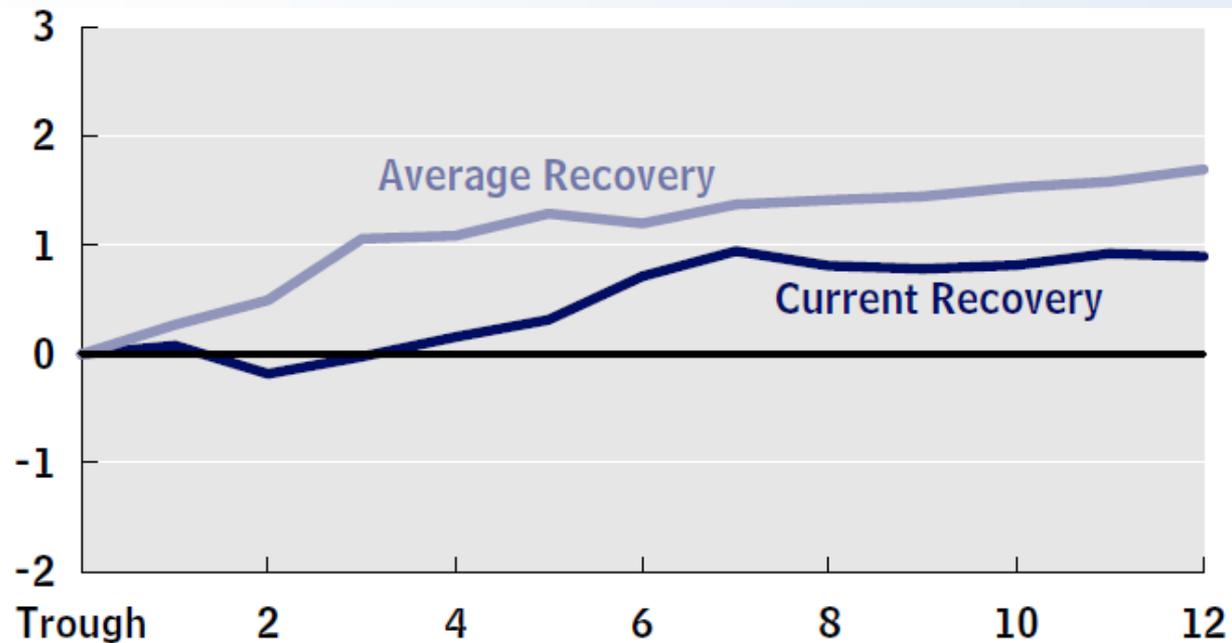
Wendy Edelberg

Congressional Budget Office

These slides were prepared for a presentation at the Federal Reserve Bank of St. Louis conference “Restoring Household Financial Stability after the Great Recession: Why Household Balance Sheets Matter” on February 7, 2013. The views expressed are our own and should not be interpreted as those of the Congressional Budget Office.

Consumer spending has been remarkably weak in this recovery

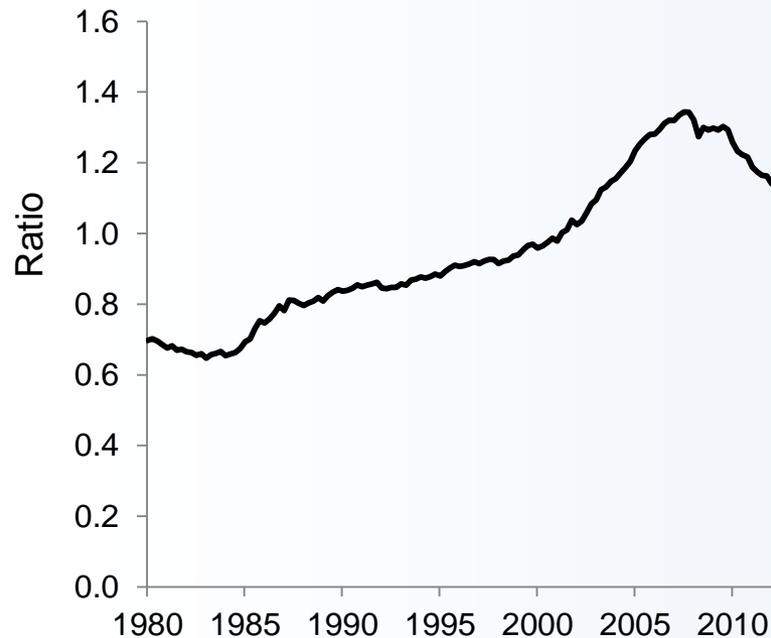
Contribution of Real Personal Consumption Expenditures to the Cyclical Variation in Real GDP following Recessions



Note. Percentage difference from trough as a ratio of potential GDP.
Source. Congressional Budget Office (2012). Figure 3

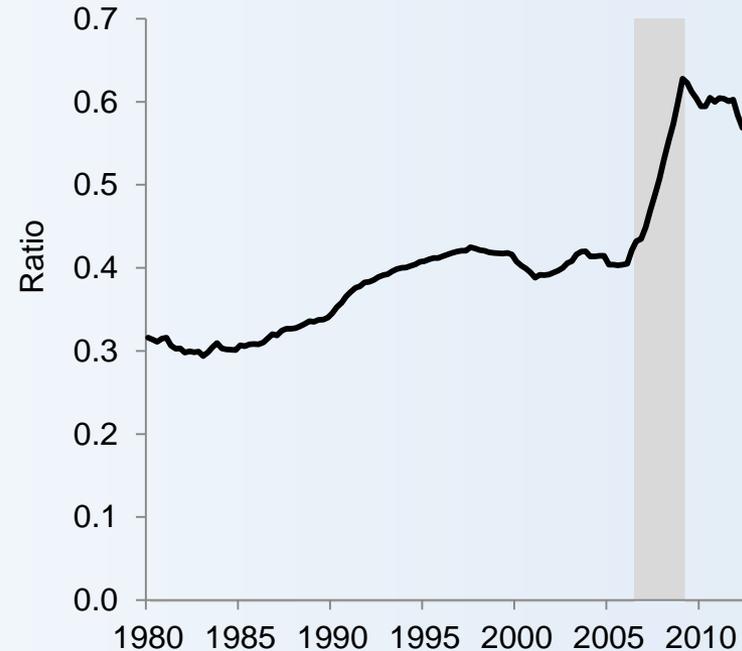
What role has household debt/leverage played?

Household Debt Relative to Income



Note: Last value is 2012:Q2. Data from U.S. flow of funds accounts and U.S. national income and product

Mortgage Debt Relative to Aggregate Value of Homes



Note. Shaded area denotes period of rapid home price declines. Data from the U.S. flow of funds accounts. Last value is 2012:Q2.

Popular interpretation of what has been going on ...



What are the linkages between excess debt/leverage and consumer spending?

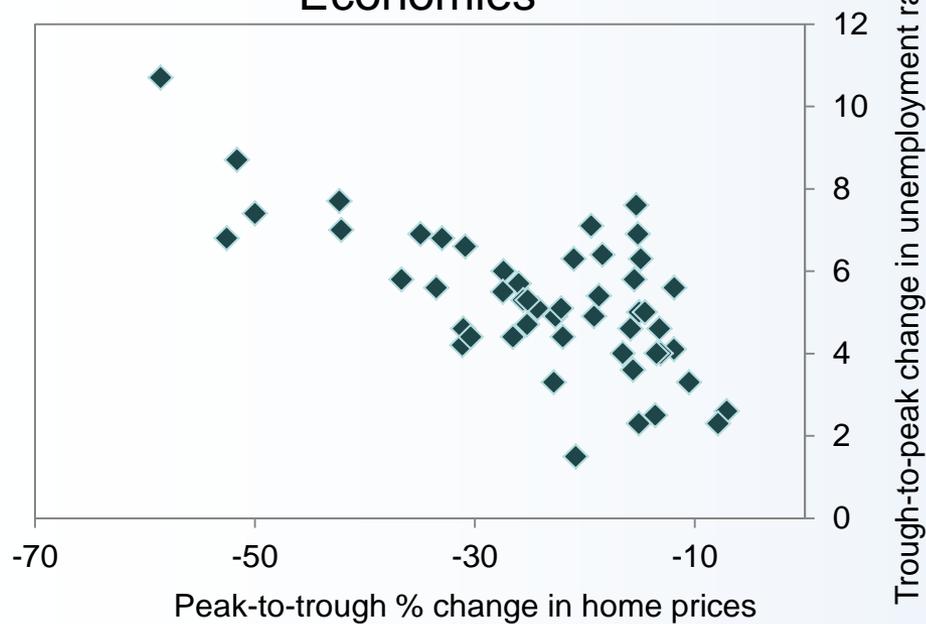
- Standard theory:

$$C_i = f(Y_i, W_i, r_i, \text{preferences}, [\text{uncertainty}], [\text{credit constraints}])$$

- Beyond the stylized models:
 - » Households might be uncomfortable with debt/leverage beyond a certain level
 - Makes job loss more costly (might have to default)
 - Might lose future access to credit
 - » Financial institutions might be less willing to lend to and or refinance loans for high debt/leverage households

Regional data suggest an important role for household balance sheet shocks

High-Debt/Housing Bust States
Saw the Biggest Collapse in their
Economies



Identification problem: High debt/leverage areas also saw the largest declines in housing wealth.

Theory and lots of empirical evidence suggest strong link between consumption and wealth, but what about consumption and debt/leverage?

Note. Based on data from First American Corelogic and U.S. Department of Labor.

Previous literature on the household debt crisis

- Many papers on various aspects of household finances leading up to and during the crisis.
- A couple of papers on the relationship between debt/leverage and consumption in the wake of the crisis:
 - » Some researchers have found evidence suggesting a link:
 - Mian, Rao, and Sufi (2011)
 - Dynan (2012).
 - » But others have been skeptical:
 - Pence (2012)
 - Cooper (2012).

Our paper looks at two related questions

- Has excessive debt contributed to the weak performance of consumption?
- What are the underpinnings of any such linkage?
- Reasons to care:
 - » Speaks to the underlying strength of the economy (important for macro policy decisions).
 - » Speaks to the need for special policies such as debt forgiveness initiatives and programs to facilitate refinancing.

Preview of findings

- Households' propensity to report "cutting back" their consumption in 2009 rises significantly with leverage
 - » .. even after controlling for wealth, income, and other factors that would be expected to influence consumption.
- Evidence that several factors contribute to the relationship:
 - » Higher leverage associated with reduced access to credit.
 - » The most highly leveraged households were less likely to refinance than their counterparts with less leverage.
 - » Higher leverage associated with a more pronounced "precautionary" reaction.

Key background information

- 2007-2009 Survey of Consumer Finances panel:
 - » Regular 2007 cross-section plus limited follow-up of the same households in 2009
 - » Comprehensive balance sheet information; rich set of attitudinal questions; representative (after weighting).
- Measuring leverage:
 - » No consensus in literature about how to do this: we look at both debt/income and debt/assets.
 - » Focus on leverage as of 2007 because ex post (2009) levels may be endogenous with respect to some of the outcome variables we consider.

Debt and “Cutting Back”

Outcome variable

Households were asked in 2009:

Over [the past two years], have you (and your family) made decisions to change the ways you arrange your money or investments?

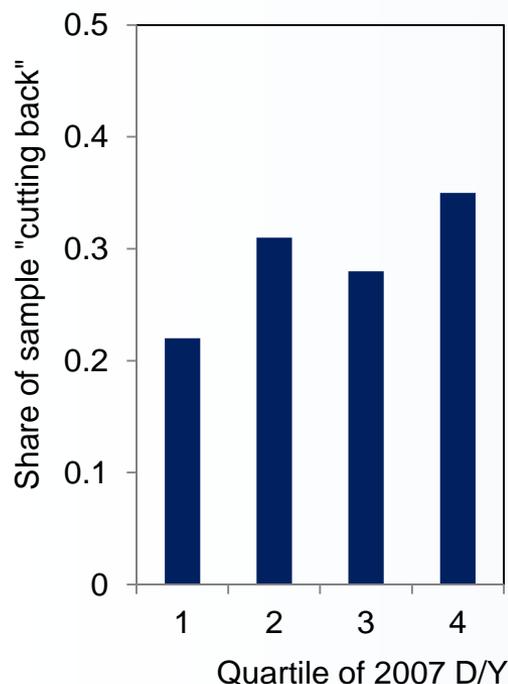
Some responses consistent with cutting back consumption:

- *Spend less, cut back*
- *Budget expenses more carefully, more cautious about buying/spending*
- *Use old things longer*
- *Buy less expensive things*
- *No money to spend beyond necessities*
- *Save more*

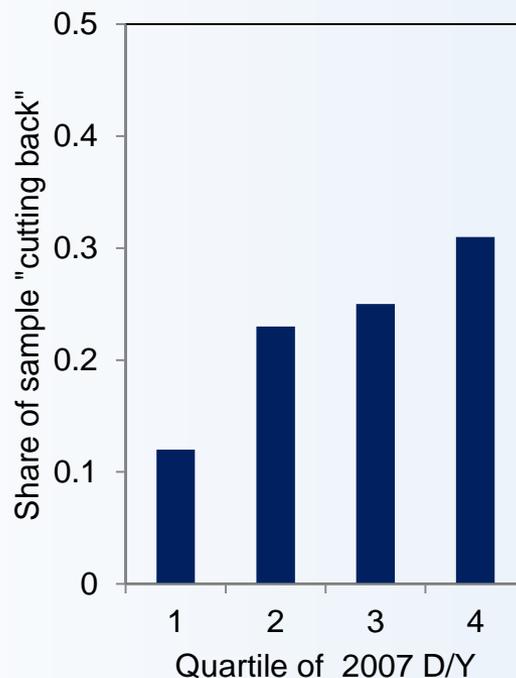
“Cutting back” rises with leverage

Even in subsamples where consumption unlikely to be damped by wealth and income effects.

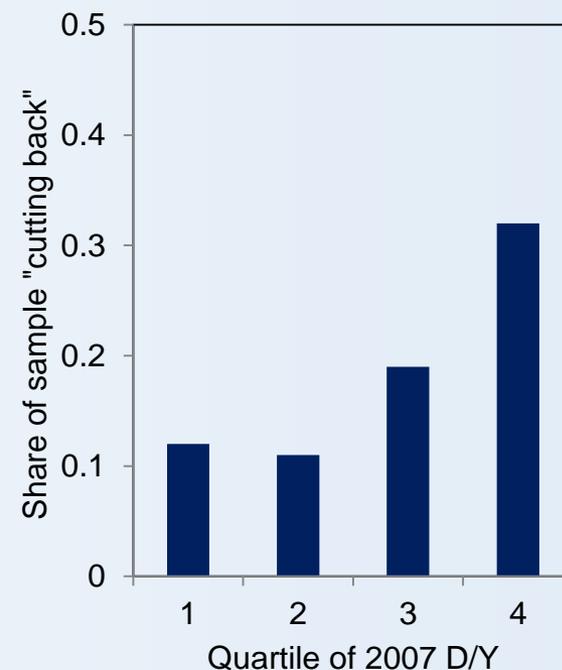
Full sample



Homeowners with rise in home value



Homeowners with rise in home value, Y, NW



Probit regressions: dep var = cutting back

Sample	All	All	All
Age class	-.126** (.026)	-.128** (.026)	-.121** (.026)
Had unemployment spell	.406** (.089)	.404** (.088)	.400** (.089)
Has access to funds	-.047 (.073)	-.048 (.074)	-.040 (.074)
Okay to use credit	.071 (.071)	.067 (.071)	.065 (.071)
Declined for credit	.329** (.093)	.333** (.094)	.331** (.094)
Expect improved economy	.119* (.067)	.116* (.067)	.120* (.068)
Expect large expenses	.107* (.061)	.102 (.062)	.105* (.062)
Δ(income) class	-.008 (.011)	-.007 (.011)	-.008 (.012)
Income uncertain	-.007 (.011)	-.006 (.070)	.002 (.070)
% credit limit used	.000 (.000)	.000 (.000)	.000 (.000)
Liquid assets / income	-.013 (.029)	-.010 (.029)	-.010 (.029)
Δ(net worth) class	-.004 (.010)	-.005 (.010)	-.004 (.010)
Willing to take risks	-.149** (.066)	-.155** (.066)	-.155** (.066)
2007 D/Y class	.180** (.033)		
2007 D/Y quartile 1		-.777** (.179)	
2007 D/Y quartile 2		-.470** (.168)	
2007 D/Y quartile 3		-.343 (.154)	
2007 D/Y quartile 4		-.197 (.153)	
2007 D/Y class (detailed)			.126** (.047)
2007 D/Y class (detailed) ^2			-.005 (.004)

Sample restricted to homeowners that did not move. * significant at the 10% or better level; ** significant at the 5% or better level.

Related outcome: saving

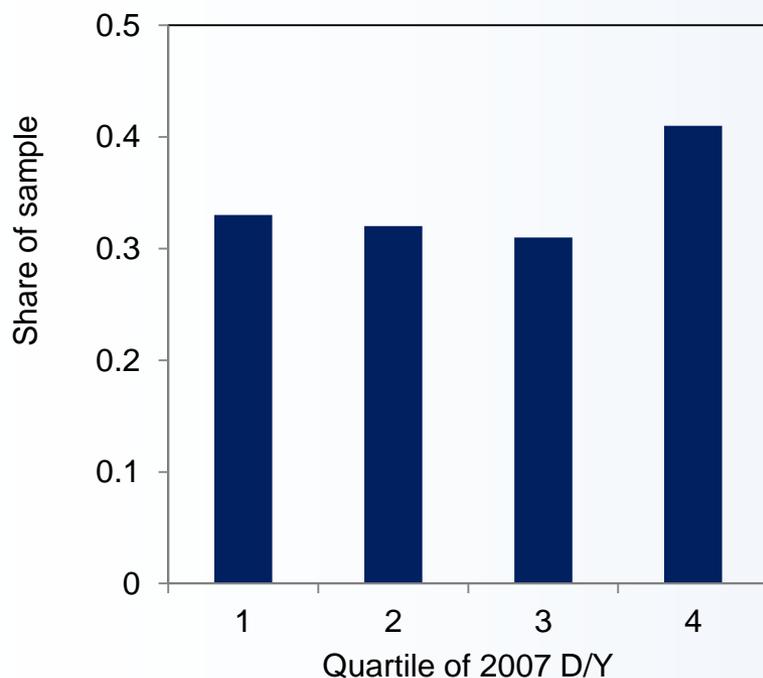
Households were asked in 2007 and 2009:

Over the past year, would you say that your (family's) spending exceeded your (family's) income, that it was about the same as your income, or that you spent less than your income?

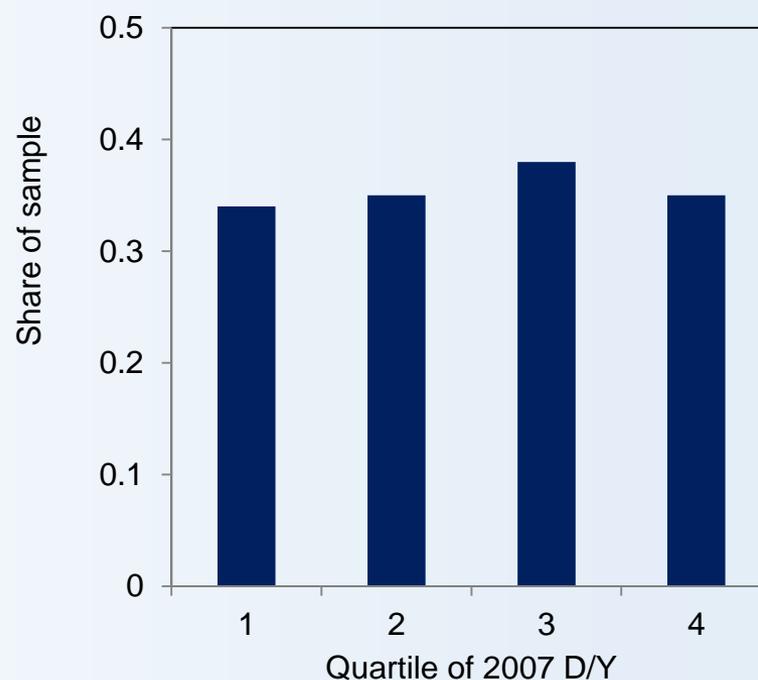
We look at changes in the share of households reporting having saved and also at transitions from saving to not saving and vice versa.

Higher leverage not associated with a greater inclination to save

2007 Savers Who Were Not Saving in 2009



2007 Non-Savers Who Were Saving in 2009



Robust to splitting sample and regression analysis.

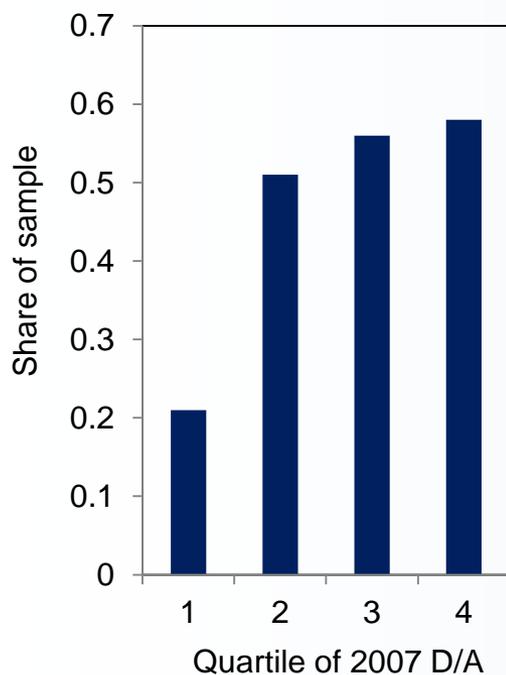
The “more cutting back” / “less saving” conundrum may be explained by quirks in the saving measure

- Saving measure backward-looking (past year) whereas “cutting back” may be capturing changes the household intends but hasn’t had the willingness or wherewithal to execute.
- Respondents instructed to include purchases of autos and “spending on other investments” in saving.
- We only know whether respondents saved or didn’t saving so can’t tell if savers saved more or dissaved less.

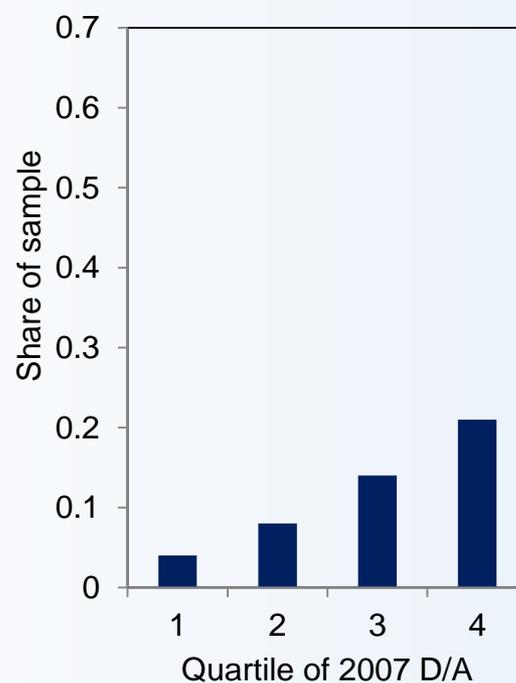
Why Are Those with More Debt More Likely to Be “Cutting Back”?

Higher leverage associated with reduced access to credit between 2007 and 2009

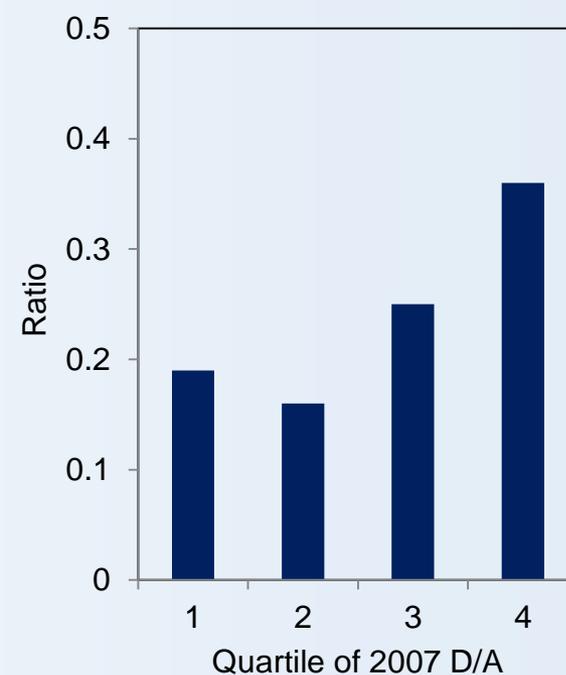
Applying for credit



Denied for credit

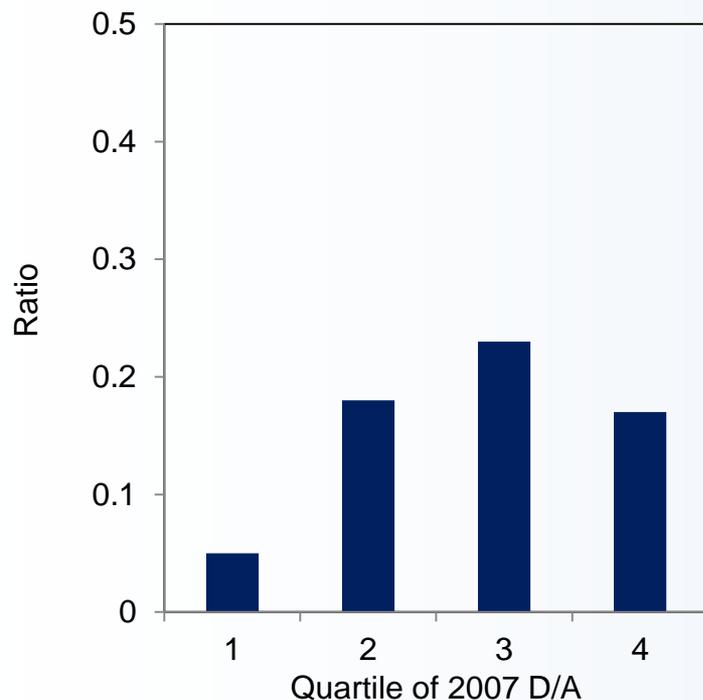


Share denied relative to share applied



The most highly leveraged households were less likely to refinance

Share with mortgage that refinanced



But more work needs to be done as the incentive to refinance should be correlated with the amount of debt held ...

A couple of questions that might help us understand if high debt induced more precautionary behavior

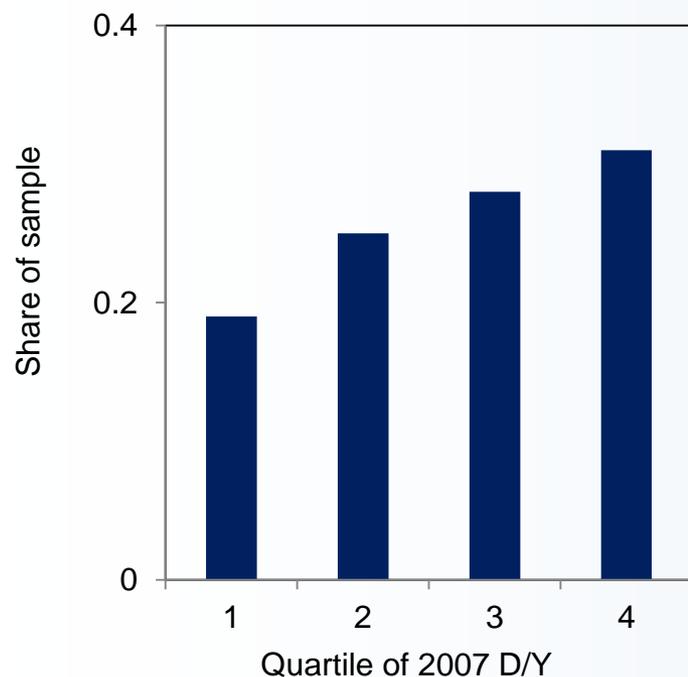
Which of the following statements comes closest to describing the amount of financial risk that you are willing to take when you save or make investments?

- 1. Take substantial financial risks expecting to earn substantial returns*
- 2. Take above average financial risks expecting to earn above average returns*
- 3. Take average financial risks expecting to earn average returns*
- 4. Not willing to take any financial risks*

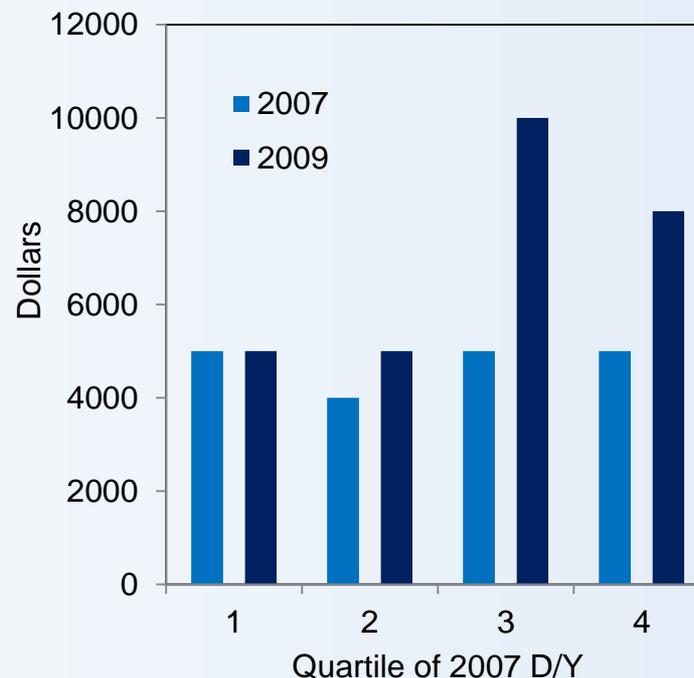
About how much do you think you (and your family) need to have in savings for emergencies and other unexpected things that may come up?

Some evidence of a greater precautionary response among those with higher leverage

Less willing to take financial risks in 2009 than in 2007



Median desired precautionary reserves



Conclusions

- Results from the 2007-2009 Survey of Consumer Finances panel consistent with earlier research suggesting that high debt/leverage has contributed to lackluster consumption.
 - » Households' propensity to report "cutting back" their consumption in 2009 rises significantly with leverage even after controlling for wealth, income, and other factors that would be expected to influence consumption.
- We find evidence that the linkage arises from both leverage-related constraints imposed on households (credit access, including an inability to refinance) and from leverage-related choices they are making (as a result of a stronger shift toward precautionary behavior)

More work needs to be done

- For macro policy purposes, need to know more about the quantitative impact of high debt and leverage on demand (not clear how you do it with this data set).
- Need to drill down further into the underpinnings of the relationship:
 - » Simple analysis here does not cleanly identify the different channels of causation (need to control for more things)
 - » Important issue because of the implications for special-debt related policy initiatives.