Lecture 18: Mian & Sufi, Part I

ECON 43370: Financial Crises

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The Great Recession

Mian & Sufi's main conclusion: the combination of high household debt and declines in consumer spending is what made the Great Recession great

They exploit cross-sectional differences:

- In pre-existing debt burdens
- And in how much house prices declined (e.g., California, Florida)

Empirical test: examine whether household spending fell the most in areas with high existing debt burdens and large house price declines (so net worth declined a lot)

Who (What) Dunit?

Mian & Sufi: home price declines for highly levered households led to massive drops in spending

Gorton: banking panic led to credit-market freeze, decline in investment and durable consumption

Policy implications are different:

- M & S: save indebted households
- Gorton: save the banks

I view these different viewpoints as more complementary rather than in opposition to one another:

- 2007-08: economic weakness more directly related to housing crash
- 2008-09: economic contraction mostly due to financial panic

Business Cycles?

What causes recessions?

In a sense, this is the holy grail of macro

We typically don't observe obvious large external shocks, yet we see (comparatively) large, periodic reductions in economic activity

Mian & Sufi: large increases in debt leave susceptibility to shocks to household wealth, leading to reduction in aggregate demand

Mian & Sufi posit three alternative "theories":

1. Fundamentals view
2. Animal spirits view
3. Banking view

The Paradox of Crises

Recall the "paradox of financial crises" (Gorton citing Geithner): getting a "just" outcome requires doing something (saving the banks) that doesn't feel just

I think this applies equally well to the M & S story

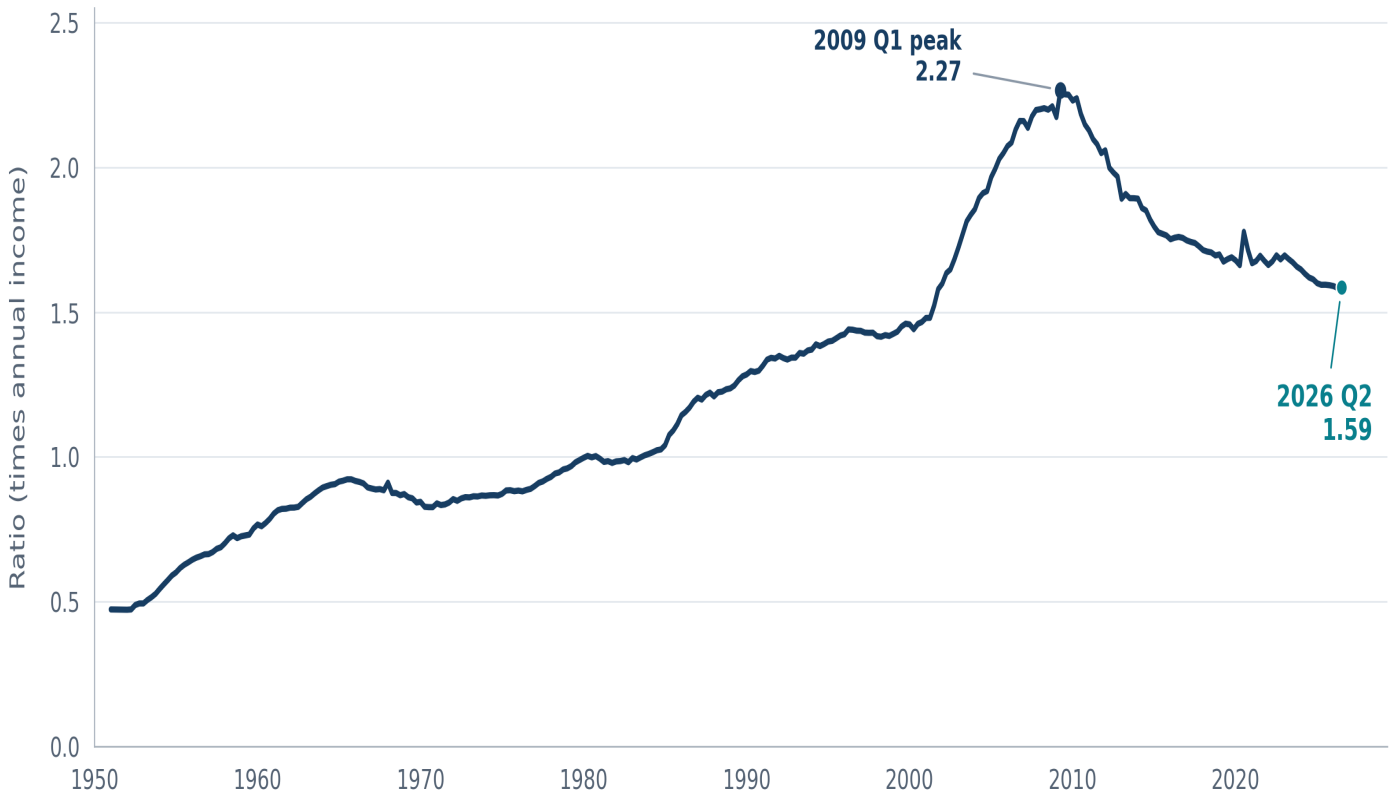
Households weren't forced into taking on debt and buying houses they couldn't afford

Does bailing them out induce moral hazard?

- Rick Santelli rant (2009)

U.S. household debt-to-income ratio

1950–2026 Q2 | Debt outstanding / annual wage and salary income



Sources: Federal Reserve Financial Accounts and BEA, via FRED (CMDEBT and WASCUR).

Debt includes households and nonprofit organizations. Income is seasonally adjusted at an annual rate.

Reconstructed with revised data as of Nov. 2, 2026. Year-end observations in 1950–51; quarterly observations from 1952.

Facts about Debt and Inequality

Wealthy households have relatively little debt and therefore low leverage

Wealthy households also tend to have more of their wealth in financial assets

Poorer households tend to have a lot of debt and high leverage

To the extent to which they have net worth, it is heavily in home equity

Debt, Leverage, and Returns

Debt is senior to equity. Equity holders bear first losses

A household who purchases a home with a mortgage is, in a sense, the junior claimant

- Owes a fixed amount to the lender
- Variation in prices load onto homeowner's net worth

Leverage magnifies returns: if you buy a house with a leverage ratio of 5 (assets/equity), a 20 percent decline in value completely wipes out equity (100 percent decline)

Is Debt "Harsh"?

One of the benefits of financial intermediation is insurance (i.e., risk diversification)

It is true: leverage (debt) magnifies risk

But another important role of financial intermediation is to allow consumption smoothing

- For example, a young couple doesn't have $500k to buy a home, but can make monthly payments, anticipating higher future income
- In principle, could structure an equity contract, but equity is costly because it requires monitoring

Underwater, Foreclosures, and Externalities

A household is "underwater" when it has negative equity in its home

- Refers to negative equity in one asset; not overall solvency
- Negative equity increases incentives to "walk away"
- More likely, households with ARMs were betting on appreciation to refinance. Negative equity means no ability to refinance and more favorable terms, and no ability to make monthly payments

Foreclosure is when a bank seizes a house and tries to sell it, often at a steep discount

Selling a house at a discount (fire sale) imposes a negative externality on others, since home prices are based on comparables

Declining prices, negative equity, foreclosures, and fire sales: vicious cycle

The Anti-Gorton

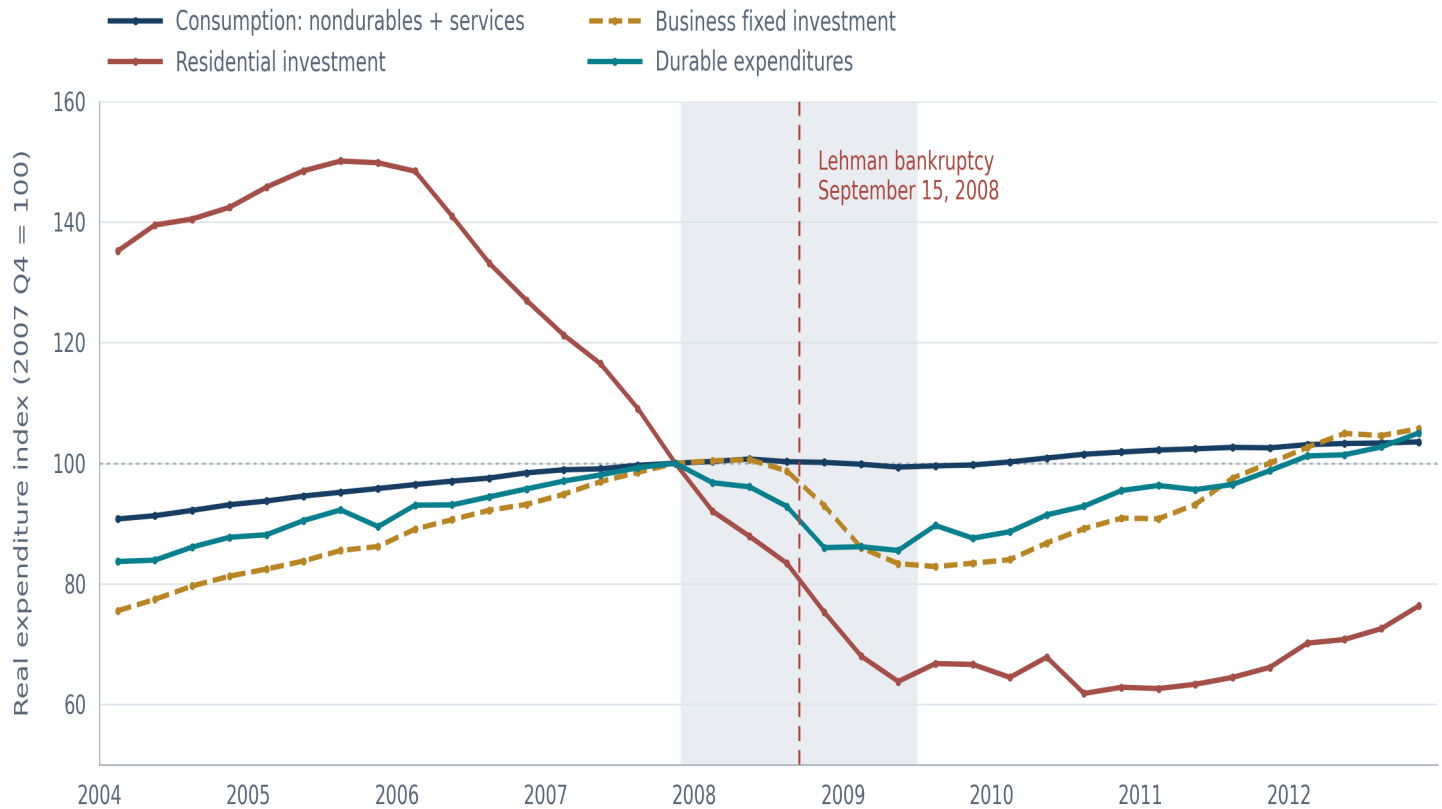
"The heart of the banking crisis began in September 2008, when both Lehman Brothers and AIG collapsed." (pg. 32)

The argument from Mian & Sufi is essentially that there was a large reduction in household spending (consumption and residential investment) before the financial crisis

How would Gorton respond to this?

U.S. real spending around the Great Recession

Quarterly, 2004–2012 | Index: 2007 Q4 = 100 | Seasonally adjusted



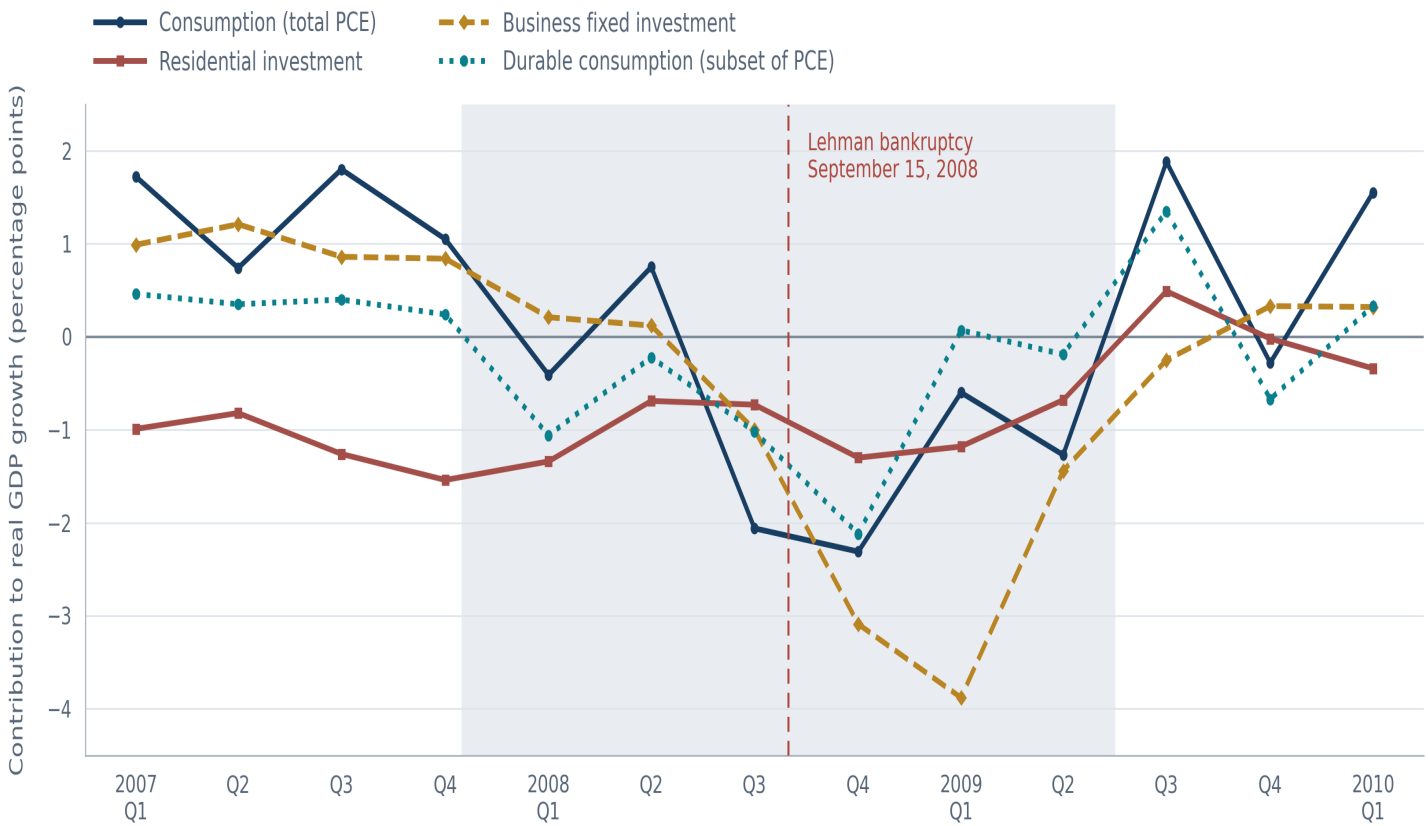
Sources: BEA via FRED. Consumption combines nondurables and services using a Fisher chain quantity index.

Gray shading: Great Recession, December 2007–June 2009 (NBER). Red dashed line: September 15, 2008.

Quarterly observations are plotted at quarter midpoints. Business fixed investment excludes residential investment and inventories.

Contributions to U.S. real GDP growth

2007 Q1–2010 Q1 | Percentage points, annualized | Seasonally adjusted



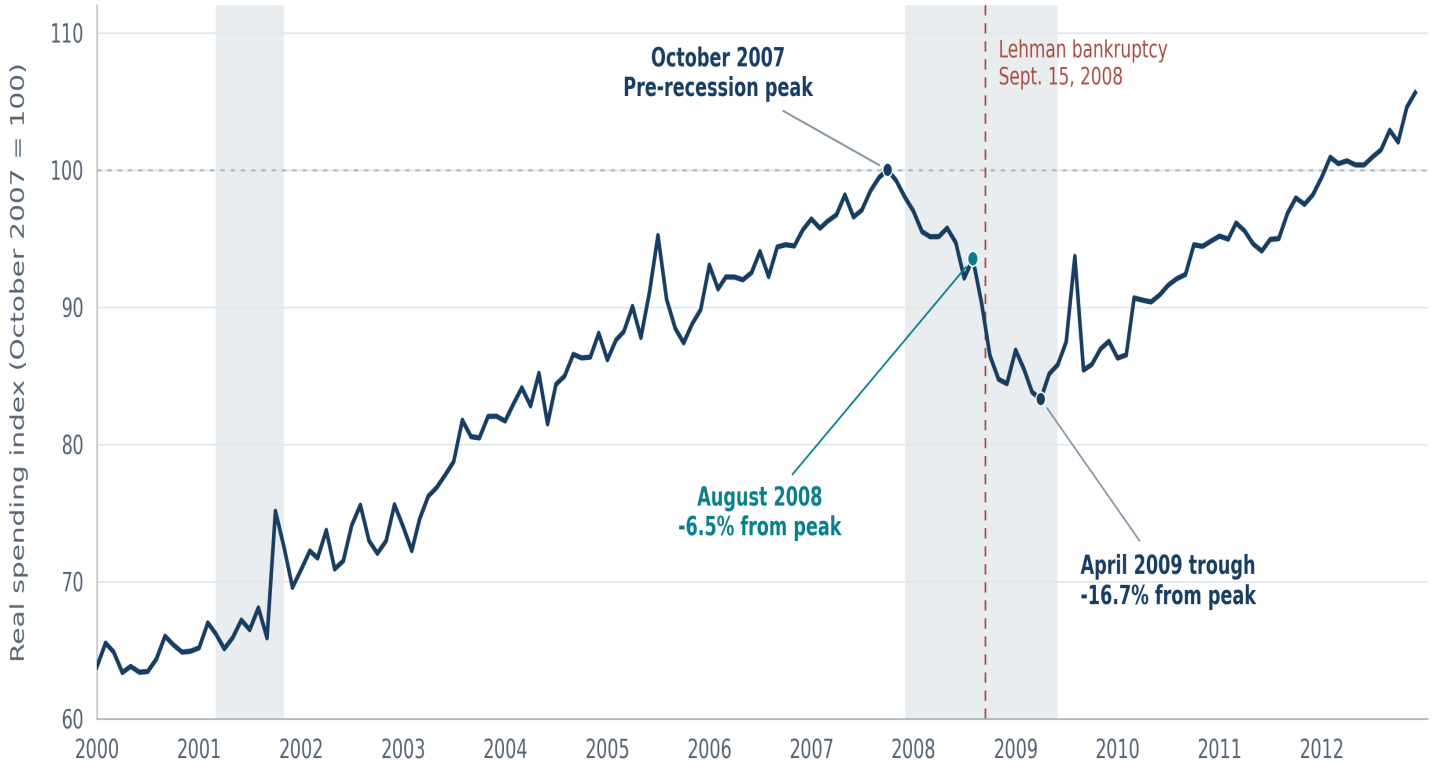
Source: BEA, NIPA Table 1.1.2, via FRED. Revised data retrieved November 3, 2026; values can differ from the book.

Durables are included in total consumption: these four lines should not be added together.

Gray shading: December 2007–June 2009 (NBER). Quarterly observations are plotted at quarter midpoints.

U.S. real spending on durable goods

Monthly, seasonally adjusted | January 2000–December 2012



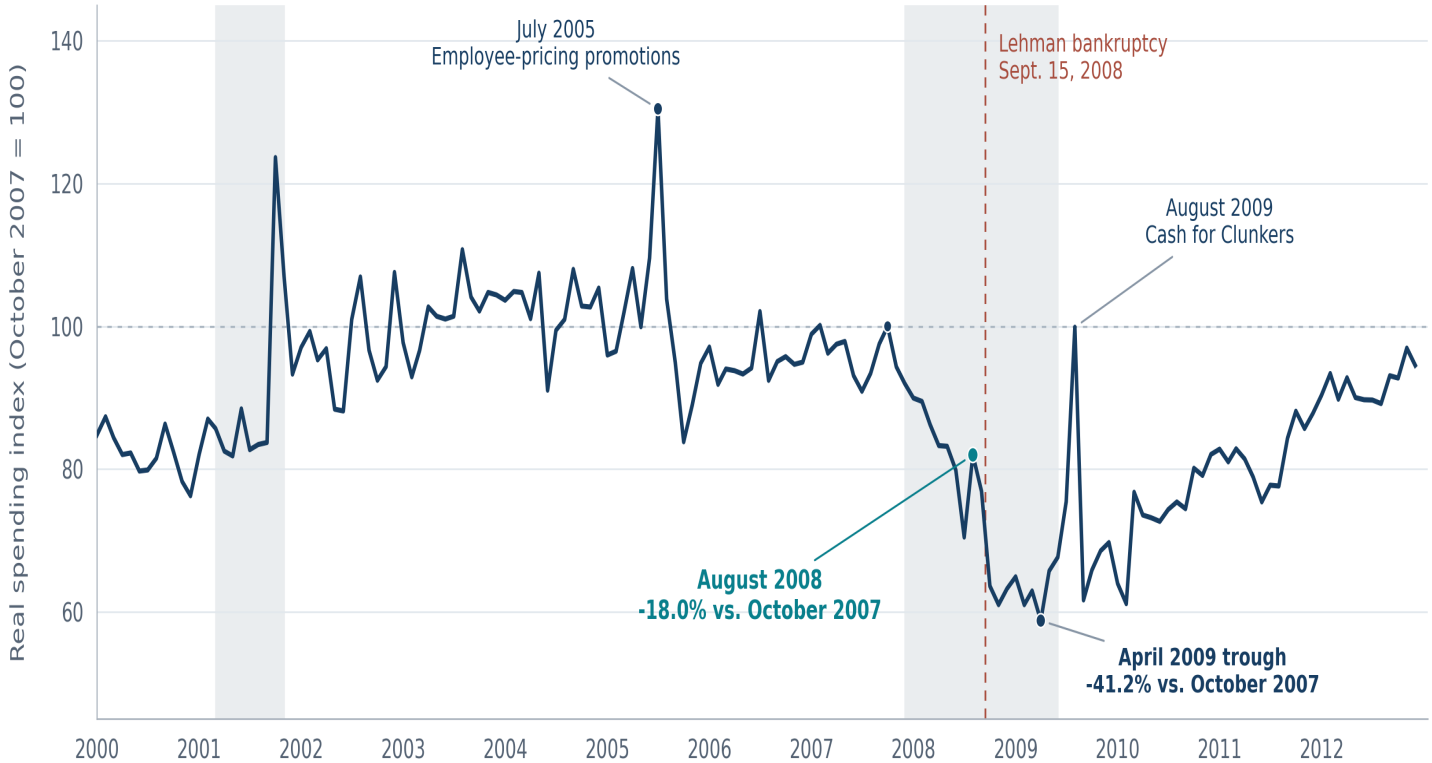
Source: BEA, real personal consumption expenditures on durable goods, via FRED (DDURRA3M086SBEA).

Official chain-type quantity index, rescaled to October 2007 = 100. Gray shading denotes NBER recessions.

Coverage includes net purchases of used vehicles; this is not a strictly new-goods-only measure. Data retrieved Nov. 2, 2026.

U.S. real spending on new motor vehicles

Cars, SUVs, and light trucks | Monthly, seasonally adjusted | 2000–2012



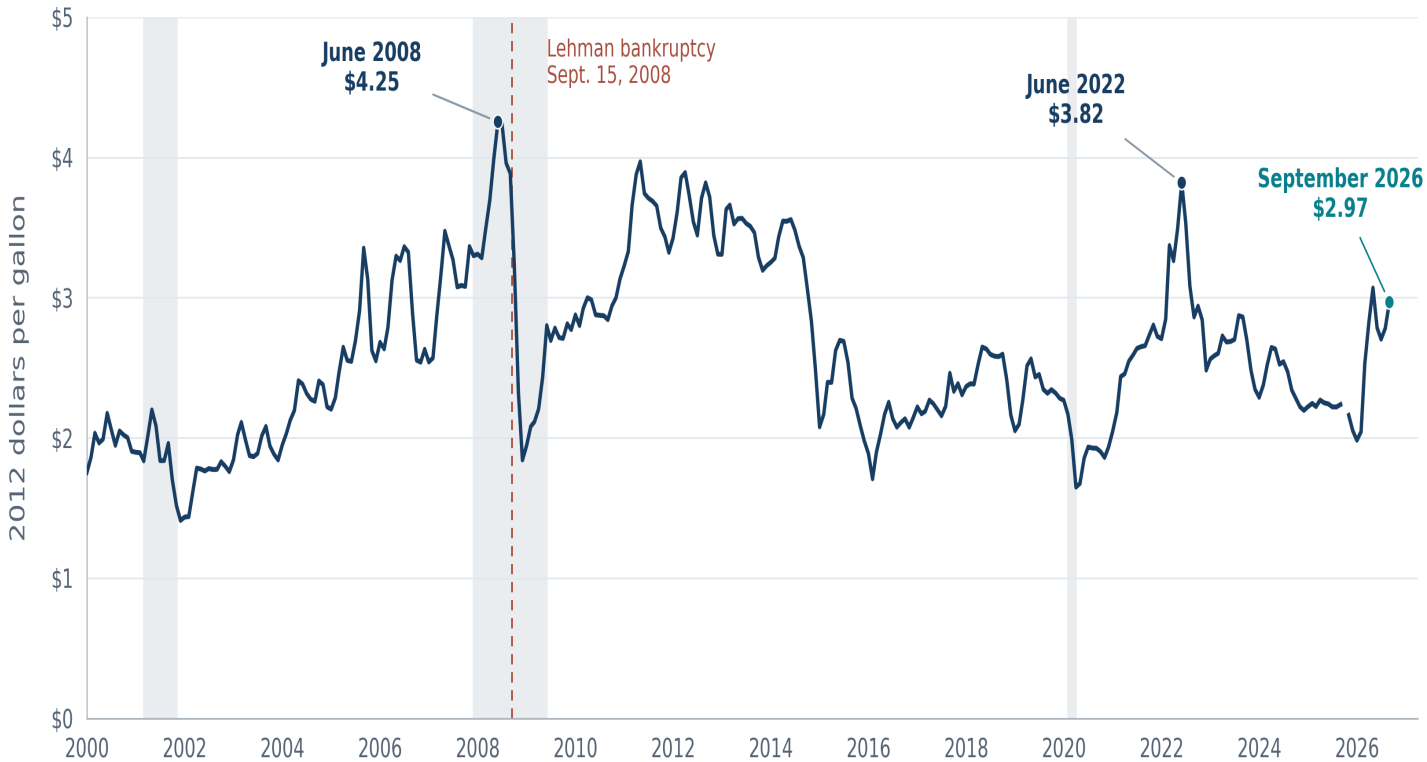
Source: BEA, NIPA Table 2.4.3U, line 5 (DNMVRA). Monthly data from January 2000 through December 2012.

New vehicle purchases by consumers; excludes used vehicles and parts. Gray shading denotes NBER recessions.

October 2007 = 100, matching the previous durable-goods chart. Data published Oct. 29, 2026; retrieved Nov. 2, 2026.

U.S. real price of regular gasoline

Monthly averages, January 2000–September 2026 | Inflation-adjusted dollars per gallon



Sources: EIA, U.S. regular gasoline retail prices (all formulations, including taxes); BLS, all-items CPI-U.

Real price = nominal price × (2012 average CPI / current-month CPI). Monthly averages; not seasonally adjusted.

Regular grade is typically 87 octane. Gray shading denotes NBER recessions. Data retrieved November 3, 2026.

October 2025 is left blank because CPI is unavailable. September 2026 is the latest month with both inputs.

Geography of Spending Declines

"Areas of the country suffering a collapse in net worth pulled back much earlier and much more strongly than areas that didn't. We attribute this to the decreased net worth of indebted households." (pg. 38)

- Large net-worth-decline counties lost about 25 percent of net work (2006-09), whereas the opposite quintile lost nothing
- Consumption in the counties with large declines in net worth fell by 20 percent; very little in the opposite quintile

Wealth Effects and MPCs

The simplest story for why house price declines might reduce spending is a wealth effect

- House loses value, your "permanent income" is lower by some amount, you reduce spending

If this were all there was, we would expect MPCs (marginal propensity to consume) out of wealth to be the same for everyone for the same house price decline (and generally pretty small)

- But we don't. MPCs are higher for more indebted households
- Helps explain why there was a mild recession following the bursting of the tech bubble

The Levered Losses Framework

There is a model here in the background

At its core, it's actually just the neoclassical model from intermediate macro!

Consumption, labor supply & demand, investment, production, resource constraint:

$$\begin{aligned} C_t &= C^d\left(Y_t, Y_{t+1}, r_t, NW_t\right) \\ N_t &= N^s\left(\left(w_t, \theta_t\right)\right) = N^d\left(A_t, K_t\right) \\ Y_t &= A_t F(K_t, N_t) \\ I_t &= K_{t+1} - (1-\delta)K_t \\ Y_t &= C_t + I_t \end{aligned}$$

MPC Out of Wealth

The marginal propensity to consume out of net worth is:

$$\frac{dC_t}{dNW_t} = \frac{\partial C^d\left(Y_t, Y_{t+1}, r_t, NW_t\right)}{\partial NW_t}$$

Basically, the argument is $\frac{\partial C^d(\cdot)}{\partial NW_t} > 0$ and $\frac{\partial^2 C^d(\cdot)}{\partial NW_t^2} < 0$

For a given shock to asset prices, net worth declines more (in percentage terms) the more levered someone is

So, when net worth is low (leverage is high), a given decline in asset prices causes a large decline in desired consumption This

logic would hold in the cross-section, too

Still Need Supply Frictions

Absent some kind of supply friction, we'd have a downward-sloping IS curve, and a vertical Y^s curve (equivalently, downward-sloping AD and vertical AS)

Output is supply-determined

Decline in net worth would trigger price adjustment (e.g., decline in r_t) leaving total output unaffected

Need some kind of friction to get Y_t to decline (i.e., be demand-determined): sticky prices/wages, ZLB, reallocation frictions

Spillovers

Empirical fact: household pending declined the most in areas with big declines in net worth

But employment declined everywhere

Tradeable (autos), non-tradeable (haircuts), and reallocation in an "islands" model

Similar to an externality market in banks: one bank's failure can trigger problems at other banks

One region's troubles (e.g., California) could cause troubles in other regions (e.g., Indiana)

Relation to Geithner & Gorton

"In an economic crisis brought about by levered losses, the natural reactions are moral judgment and outrage. A common refrain we hear is that irresponsible homeowners borrowed too much, and they should be made to suffer. But such moralizing during the crisis is also counterproductive." (pg. 59)