

HOUSEHOLD CONSUMPTION AND DEBT DATA

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NBER INITIATIVE: SYSTEMIC RISK AND MACRO
MODELING

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TOPICS

Understanding the causes of the Great Recession and the role of the consumer

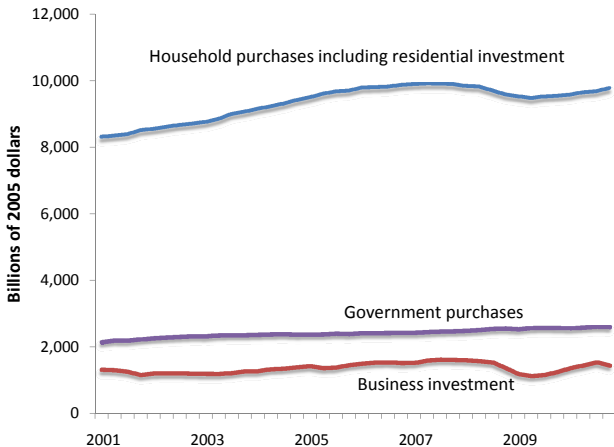
Financial crisis was the result of the same forces that caused the recession, not an independent causal factor

Central role of real estate

Data requirements for a better understanding of consumption

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HOUSEHOLD PURCHASES DOMINATE THE LEVEL AND MOVEMENTS OF GDP



DYNAMIC EQUILIBRIUM

Solow model

Life-cycle consumption

Inelastic labor supply

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DYNAMIC EQUILIBRIUM, CONTINUED

Capital utilization proportional to employment

Stock of houses and consumer durables as well as business capital, with adjustment cost for both kinds of capital

Diamond-Mortensen-Pissarides labor market

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NONSTANDARD FEATURES

Zero lower bound on nominal interest rate

Some households liquidity-constrained and with debt service commitments

Financial friction drives a wedge between the return that households earn from savings and the rate at which businesses and households borrow

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KRUGMAN EFFECT

Expectation of declining consumption must cause low real interest rates, possibly dangerously negative.

$$\text{MRS} = \frac{1}{1 + \rho} \frac{u'(c_{t+1})}{u'(c_t)} = \frac{1}{1 + r} > 1$$

and we have the troublesome $r < 0$.

See Krugman (*BPEA*, 1998), where lower future output endowment is the source of declining consumption and higher MRS

Eggertson and Woodford (*BPEA*, 2003) and Christiano, Eichenbaum, and Rebelo (*JPE*, 2011) get the Krugman effect from a decline in time preference ρ

Eggertsson-Krugman and Hall (*AER* 2011) rely on the more plausible Migraine Effect

EGGERTSSON EFFECT

$$r_n = r + \mathbb{E} \pi$$

π is the rate of inflation in the cost of living

Slackness causes a decline in $\mathbb{E} \pi$ and thus a greater danger of the calamity of $r_n = 0$.

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FISHER EFFECT

A decline in the price level increases the real burden of debt service and stresses constrained households.

The immediate effect of a decline in the price and wage level on household cash flow is only the increase in the current real obligation.

It would be erroneous to think that the household suffers a decline in current real income equal to the increase in the real amount of its debt.

MIGRAINE EFFECT

When constrained consumers weather the stress of deleveraging and their consumption starts growing, the consumption of unconstrained consumers will need to start shrinking, thus triggering the Krugman Effect.

The classical migraine headache hits during the period of relief after a stressful experience.

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MY ASSESSMENT

The Krugman Effect is part of bedrock macro and has to be right, but it is important that the MRS applies only to consumers who are not at the corner of the Bewley-Aiyagari intertemporal allocation problem.

The Migraine Effect seems a good candidate, but there is a question about timing.

I am profoundly skeptical about the Eggertsson Effect, but not enough to stop worrying about it.

Fisher's debt deflation had essentially no role in the Great Slump.

THE MIGRAINE EFFECT

The evidence is overwhelming that deleveraging was a huge burden on households starting in 2007.

I calculate *debt service* s_t as the sum of interest and repayment of debt from

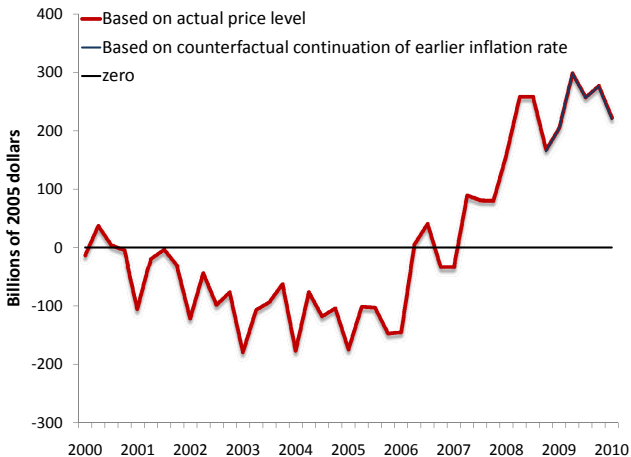
$$s_t = \frac{r_{D,t-1}D_{t-1} - \Delta D_t}{p_t}$$

Consumption of constrained consumers is

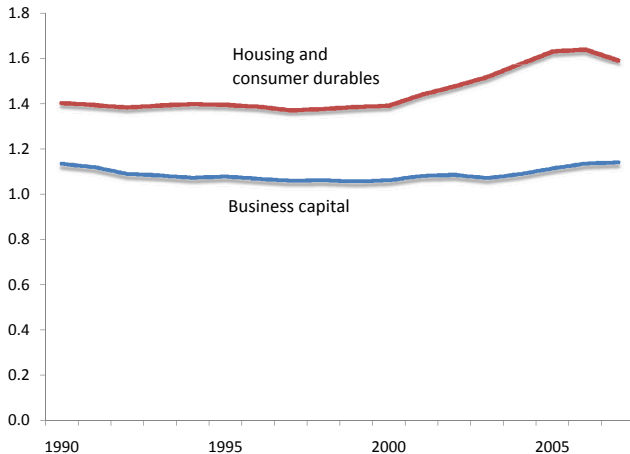
$$\bar{c}_t = \bar{y}_t - s_t$$

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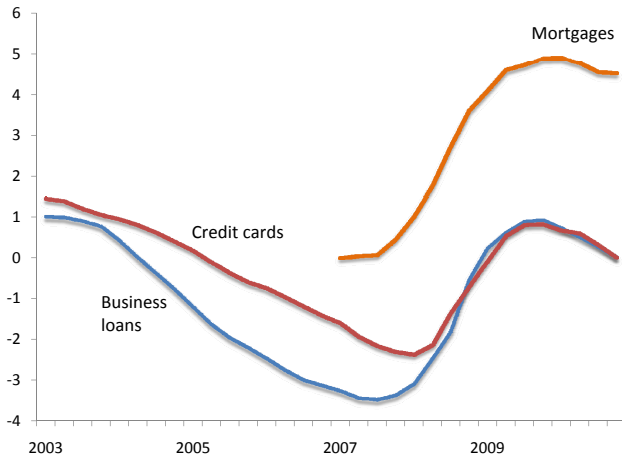
BURDEN OF DEBT SERVICE, AS A FRACTION OF GDP



RATIOS OF CAPITAL AND DURABLES TO GDP



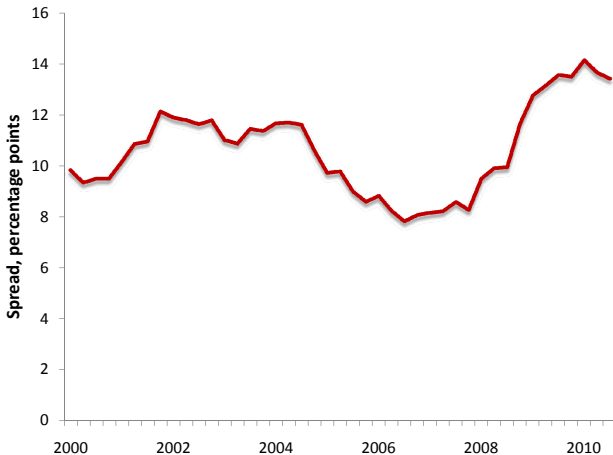
INDEXES OF LENDING STANDARDS INFERRED FROM THE FRB SENIOR LOAN OFFICER SURVEY



SPREAD, IN PERCENTAGE POINTS, BETWEEN BUSINESS LOAN RATES AND BANKS' BORROWING RATE



SPREAD, IN PERCENTAGE POINTS, BETWEEN CREDIT-CARD RATES AND BANKS' BORROWING RATE



SPREAD, IN PERCENTAGE POINTS, BETWEEN MORTGAGE RATES AND 10-YEAR TREASURYS



CONSUMPTION DATA

Consumption aggregated across all households is available monthly in considerable product detail in the National Income and Product Accounts

The BLS's Consumer Expenditure Survey measures consumption at the family level but does not follow families over much time; its aggregates over products disagree substantially with NIPA.

The Panel Study of Income Dynamics measures consumption of a sample of families every two years

RELATED DATA

The FRB's Survey of Consumer Finances measures family assets and liabilities in great detail, every three years, but does not follow families over time.

Data from financial institutions give partial information over time about family spending.

The IRS has income data from tax returns that could be combined with data on asset changes to infer consumption.

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POTENTIAL IMPROVEMENTS

Make the SCF annual and include families in it for several years.

Improve the CEX and extend the period to several years that it follows the same families.

Match tax returns to data from financial institutions linked to the returns by 1099 forms to infer consumption from income and saving data.

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