"Dissecting Saving Dynamics: Measuring Credit, Wealth and Precautionary Effects"

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Discussion by Gauti B. Eggertsson, NY Fed

What caused the crisis?

- Will focus here on what the paper says about the current recession.
- Large drop in private spending.
- Why and what lead to it?
- Not quite satisfactory to just assume "preference shocks"
- Some recent papers have emphasized that "over accumulation" of debt triggered "Minsky moment" in which people cut back spending in order to pay down debt.

This paper

- Why did consumption drop?

- drop in consumption ⟵⟶ increase in savings rate

- Increase in savings rate driven by

   2. ⟶ precautionary motive driven by unemployment risk

   1. ⟶ negative shock to wealth

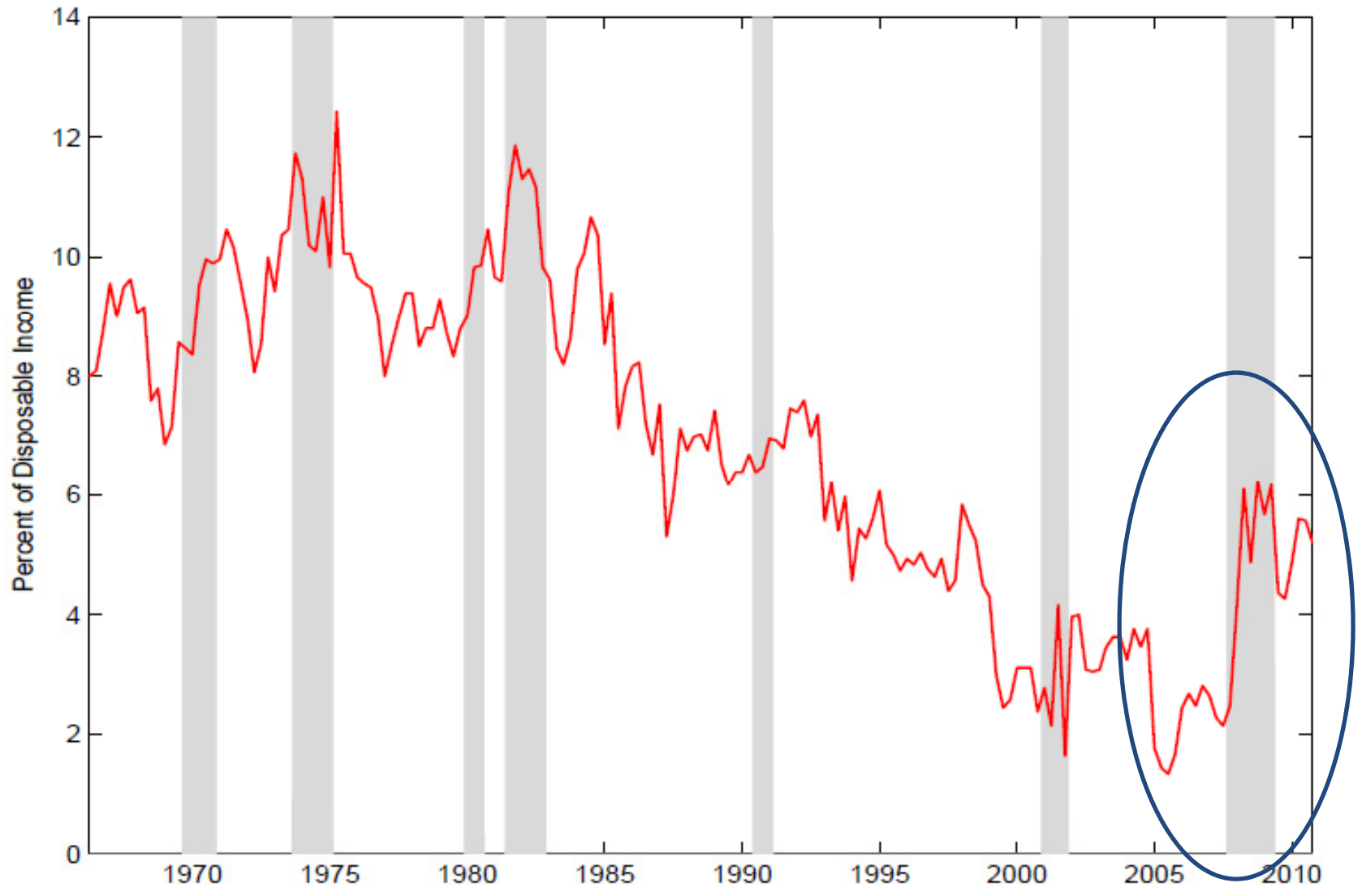   3. ⟶tightening of liquidity constraints

From paper

"Some very recent work (Guerreri and Lorenzoni (2011), Eggertsson and Krugman (2011), Hall (2011)) has argued (though without much attempt to quantification) that a sudden sharp reversal of this credit-loosening trend played a large role in the recent crisis."

Authors conclusion?

"While the change in the trajectory of the CEA index is quite striking and may explain the sudden academic interest in the role of household credit over the business cycle (see papers cited in the introduction), this evidence suggests that the rise in saving cannot be mainly attributed to the decline in credit availability." (p.6)
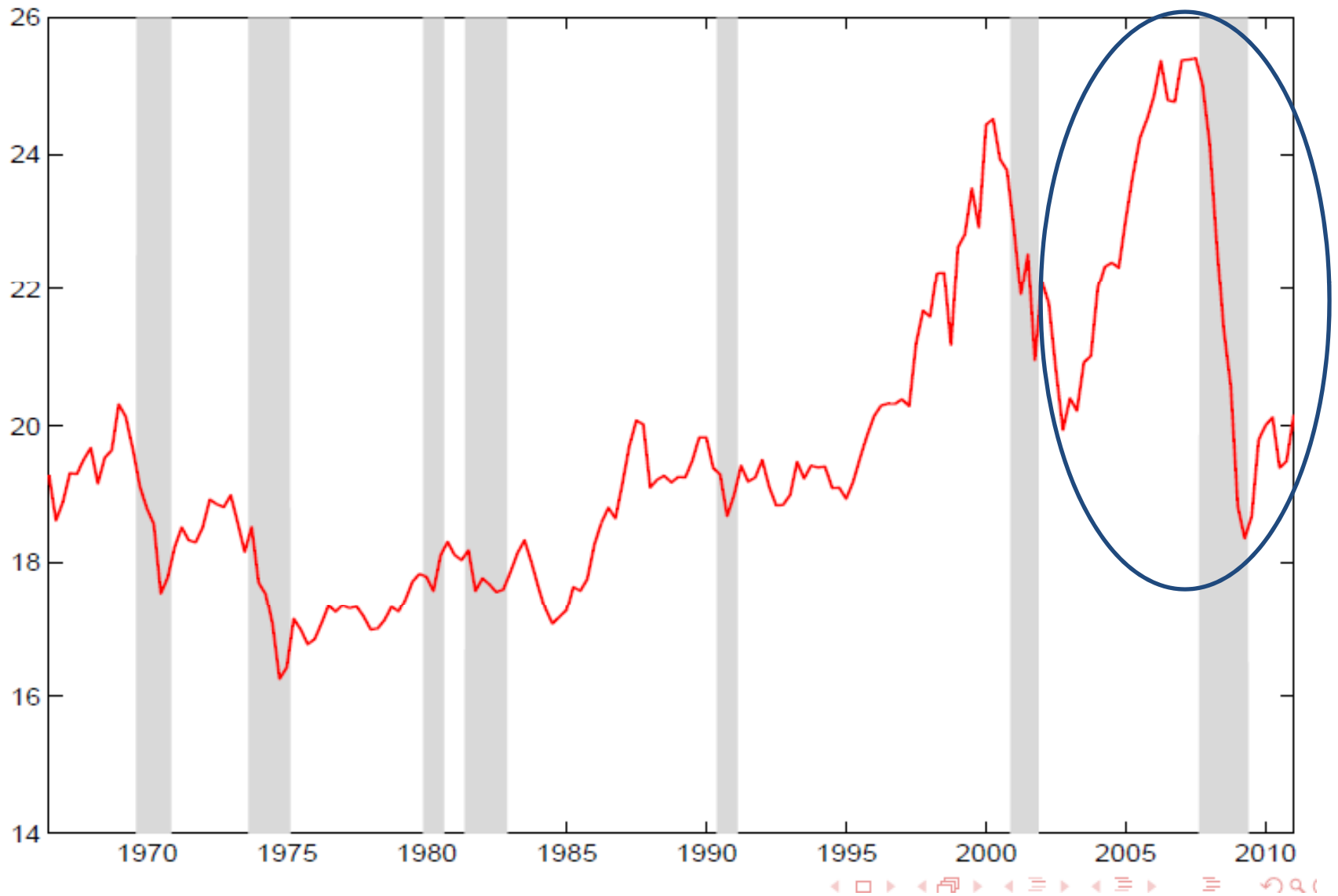
US personal savings rate
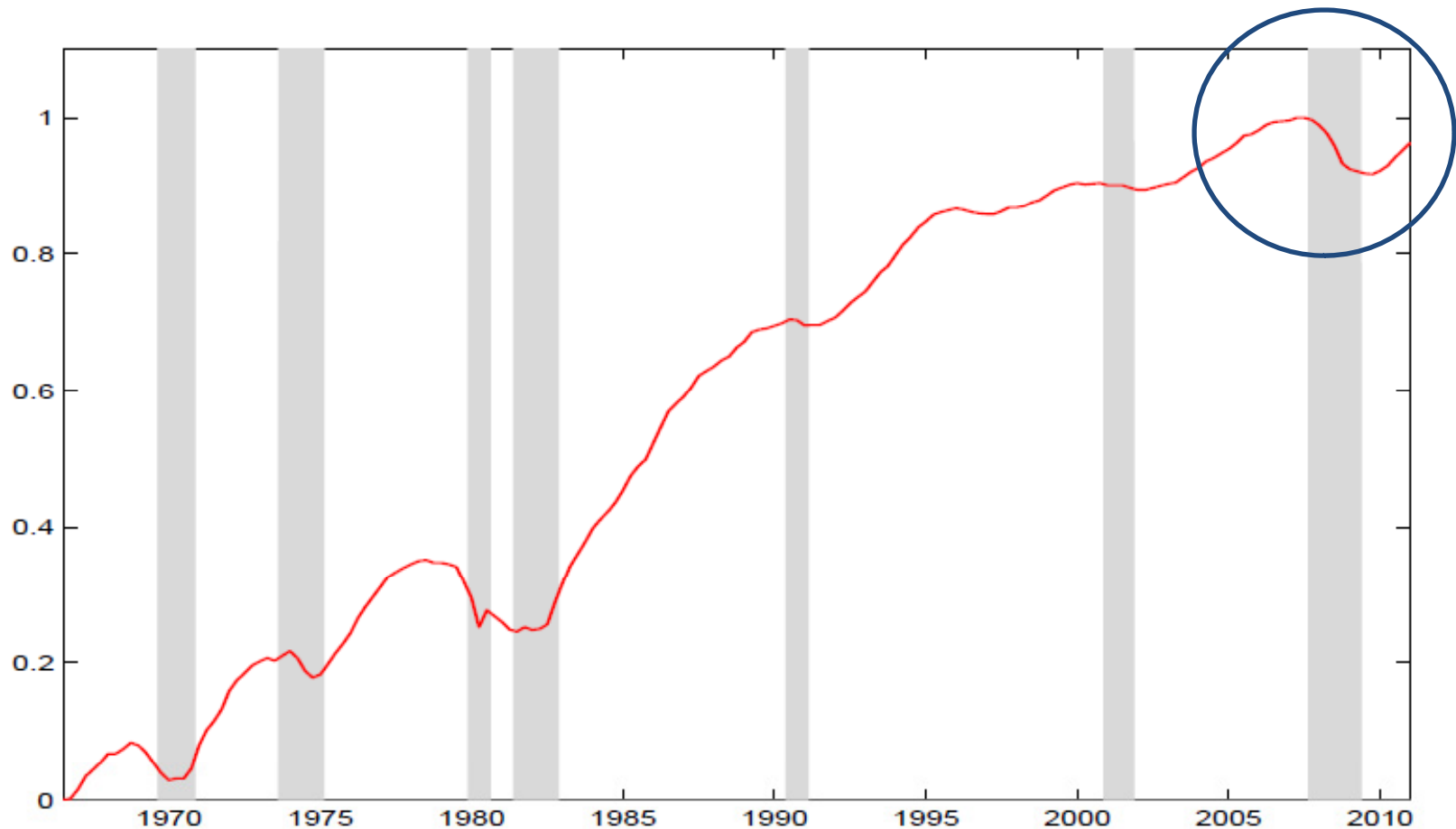
How can we explain this rise?

- Authors focus on three sources

Net Worth (Ratio to Quarterly Disp Income)
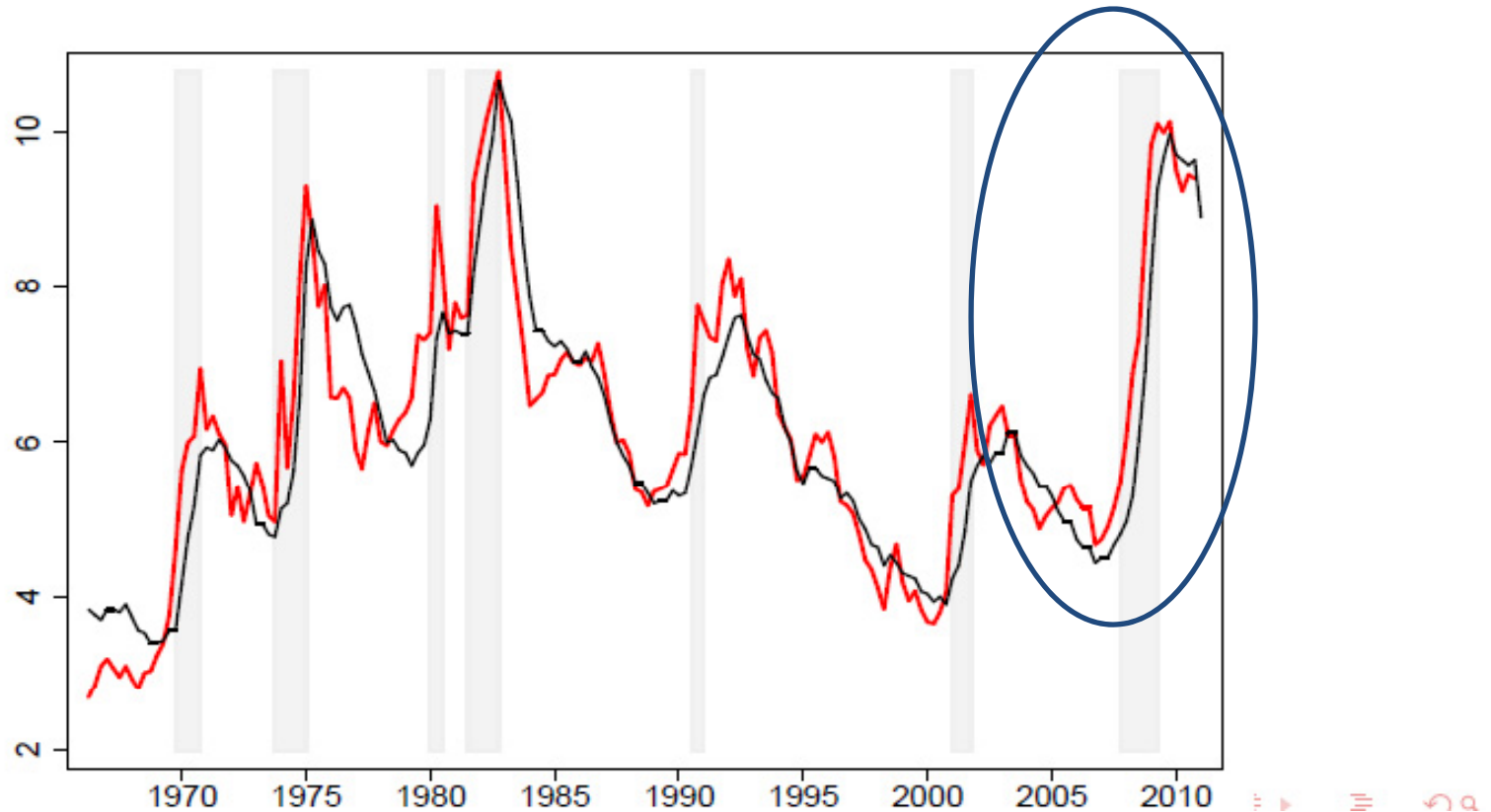
Credit Easing Accumulated (CEA) (à la Muellbauer)

Accumulated responses, weighted with debt–income ratio, to:
"Please indicate your bank's willingness to make consumer installment loans now as opposed to three months ago."

$\mho_t$ Implied by Michigan U Expectations

- ▶ Regress: $\Delta_4 u_{t+4} = \alpha_0 + \alpha_1 UExp_t$
- ▶ U risk: $\mho_t = u_t + \Delta_4 \hat{u}_{t+4}$
- ▶ $\Delta_4 u_{t+4} \equiv u_{t+4} - u_t, \qquad \Delta_4 \hat{u}_{t+4} \equiv$ fitted values
- ▶ $\mho_t$ tracks but precedes actual U

UExp: "How about people out of work during the coming 12 months—do you think that there will be more unemployment than now, about the same, or less?"
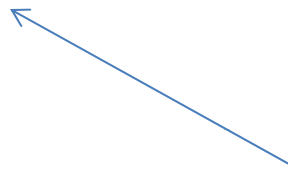
Reduced form regression

$$s_t = \gamma_0 + \gamma_m m_t + \gamma_{\text{CEA}} \text{CEA}_t + \gamma_{Eu} \mathbb{E}_t u_{t+4} + \gamma_t\, t + \gamma_{uC}(\mathbb{E}_t u_{t+4} \times \text{CEA}_t) + \varepsilon_t$$

Time trend

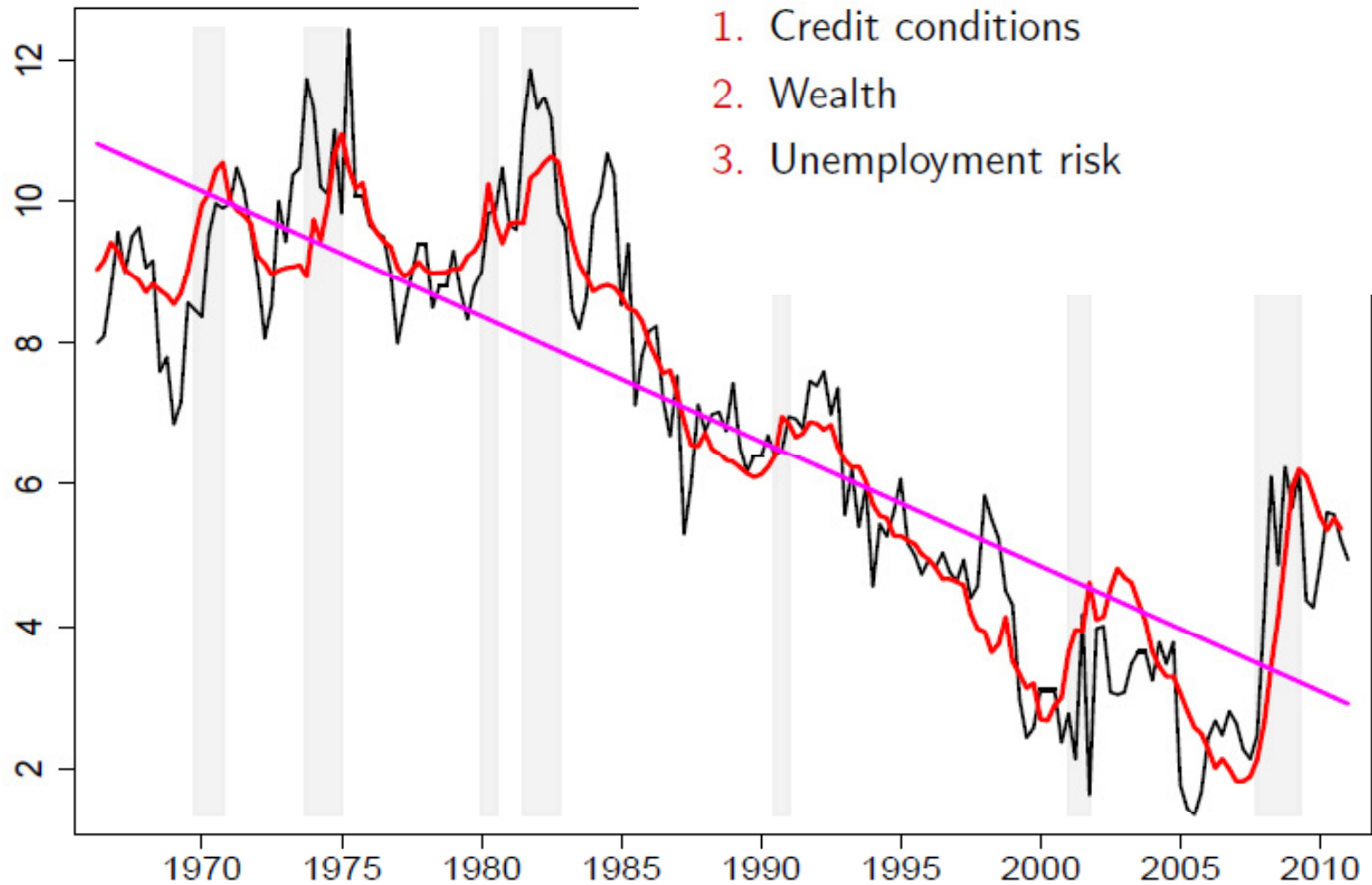Credit availability shocks

Unemployment risk

Wealth shock

Fit: Baseline vs Time Trend

The three factors "explain" saving well:

1. Credit conditions
2. Wealth
3. Unemployment risk

Great Recession 2007–2010

Variable	Reduced-Form Model	Structural Model	Actual Δs_t
$\gamma_m \times \Delta m_t$	$-1.18 \times -1.39 = 1.64$	$-0.85 \times -1.39 = 1.18$	
$\gamma_{CEA} \times \Delta CEA_t$	$-6.12 \times -0.11 = 0.64$	$-6.49 \times -0.11 = 0.68$	
$\gamma_{Eu} \times \Delta \mathbb{E}_t u_{t+4}$	$0.29 \times 4.33 = 1.24$	$0.30 \times 4.33 = 1.30$	
Explained Δs_t	3.53	3.15	2.93

▶ Order of importance in Great Recession:

1. Wealth shock
2. Labor income risk
3. Credit tightening

Question: Higher savings cannot be mainly attributed to the decline in credit availability?

Answer: Not the interpretation I would take from this reduced form evidence

How should we interpret this reduced form evidence interpreted? Authors suggestion:

- CRRA utility, labor supply ℓ, agg wage W, emp status ξ:

$$v(\boldsymbol{m}_t) = \max_{\boldsymbol{c}_t} u(\boldsymbol{c}_t) + \beta \mathbb{E}_t \big[v(\boldsymbol{m}_{t+1}) \big]$$

$$\text{s.t.}$$

$$\boldsymbol{m}_{t+1} = (\boldsymbol{m}_t - \boldsymbol{c}_t)R + \ell_{t+1} W_{t+1} \xi_{t+1}$$

- $\xi_{t+1} \in \{\xi^u, \xi^e\}$ where $\xi^u < \xi^e$
  - CT model: $\{\xi^u, \xi^e\} = \{0, 1\}$
  - Our model: wage-tax-financed UI system so $\xi^u > 0$
- Tractability: unemployment shocks are permanent
  - If $\xi_t = \xi^u$ then $\xi_{t+1} = \xi^u$
- Target wealth $\check{m}$ exists and is stable:
  - Consumption chosen so that $m_t \rightarrow \check{m}$

Key aspects

- Implies a steady state target wealth level

1. Increase in uncertainty about future labor, leads to an increase in target wealth level → consumption down.

2. Negative shock to wealth → will cut consumption to reach target wealth level again.

3. Tightening of borrowing constraint→ Will increase target wealth level → cut consumption to reach target level.

Main comment

- Nice to write down a simple model to see under what conditions an interpretation of this kind makes sense.
- But! Hard to interpret partial equilibrium models for aggregate statistics.
- Wages , labor productivity, employment, interest rates are ***exogenous*** in model
- Basically a model of a choice between consumption and savings for one individual
- "Decomposing" increase in savings to precautionary effect, etc, may make sense for a particular individual.
- Not clear if such interpretation are meaningful in the aggregate general equilibrium

Example

- Eggertsson and Krugman (2011) or Guerreri and Lorenzoni (2011): simple general equilibrium models and slight variations.
- The only shock is tightening in borrowing limit.
- It goes down but employment, wages, output, inflation, interest rate endogenous.

→ **Saving rate of "savers" can increase**
→ **Wealth can drop**
→ **Probability of unemployment can increase**
→ **And measures of credit stance _will tighten_**

This is a model in which there is only one shock. Yet one can see this shock spilling into the "three channels" the authors emphasize

Question you can ask: Does the presence of precautionary motive propagate the underlying shocks in a quantitatively significant way?
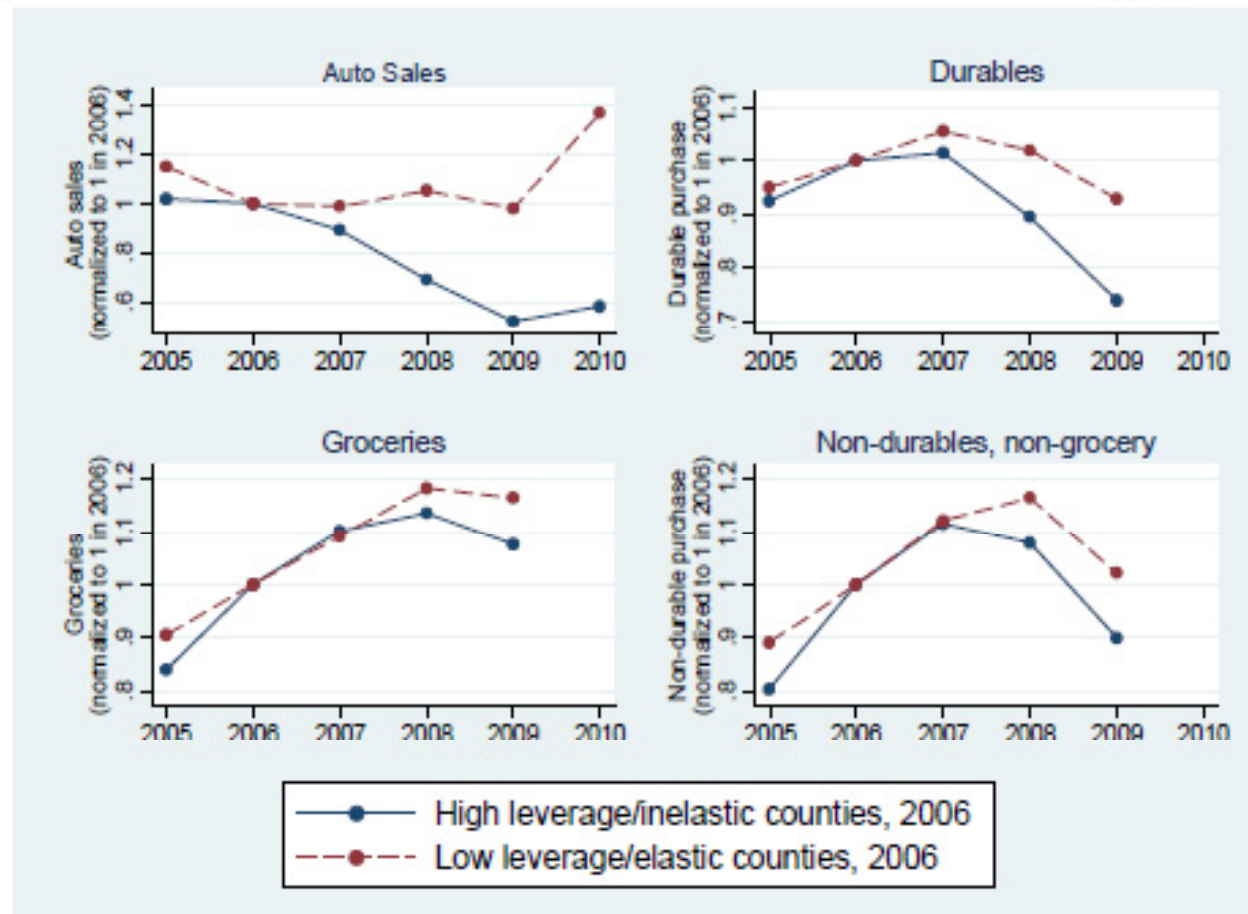
Other evidence?

- Recent work by Mian and Sufi (2011) seems promising.

- Look at cross state variations in debt across US counties to see if "indebtedness" can predict slow increase in consumption.

- Then relate this to "underutilized resources".

House Price Shock
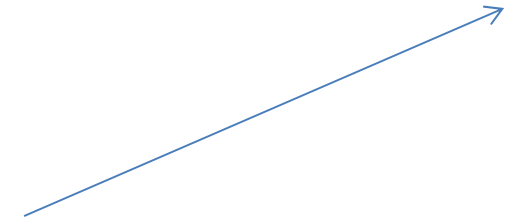# High/Low Deciles of Household Leverage, 2006

- See Mian, Rao, and Sufi (2011) for more details

Consumption Declines:
High/Low Deciles of Household Leverage, 2006

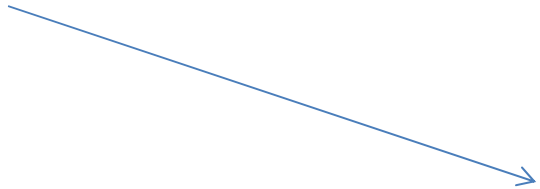- See Mian, Rao, and Sufi (2011) for more details

- Effect on unemployment

- Mian and Sufi (2011) find that drop in consumption (triggered by the tightening of borrowing constraint) explains about 65 percent of increase in unemployment.

- Has weakness like others but broader point is ....

Minsky moment-tightening of borrowing constraint that leads to deleveraging

Increase unemployment (triggering precautionary Savings)

Reduces wealth

Makes credit conditions tighter according to most measures

Conclusions

- Tightening of borrowing constraints strikes me as having been important.
- Shows up both in spreads and "borrowing conditions".
- Precautionary savings motive amplified this shocks.
- So can reduction in asset prices and "wealth".
- Not clear if decomposition is meaningful in DSGE models.