IT'S ALL ABOUT RISK-SHARING

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The risk-sharing paradigm

- We consider risk-sharing, or consumption smoothing, to be one of the central desires of an optimizing household - and hence the society.

- How successful are we in doing so?

- Let's take Europe's recent example

European boom
(~4% annual GDP growth)
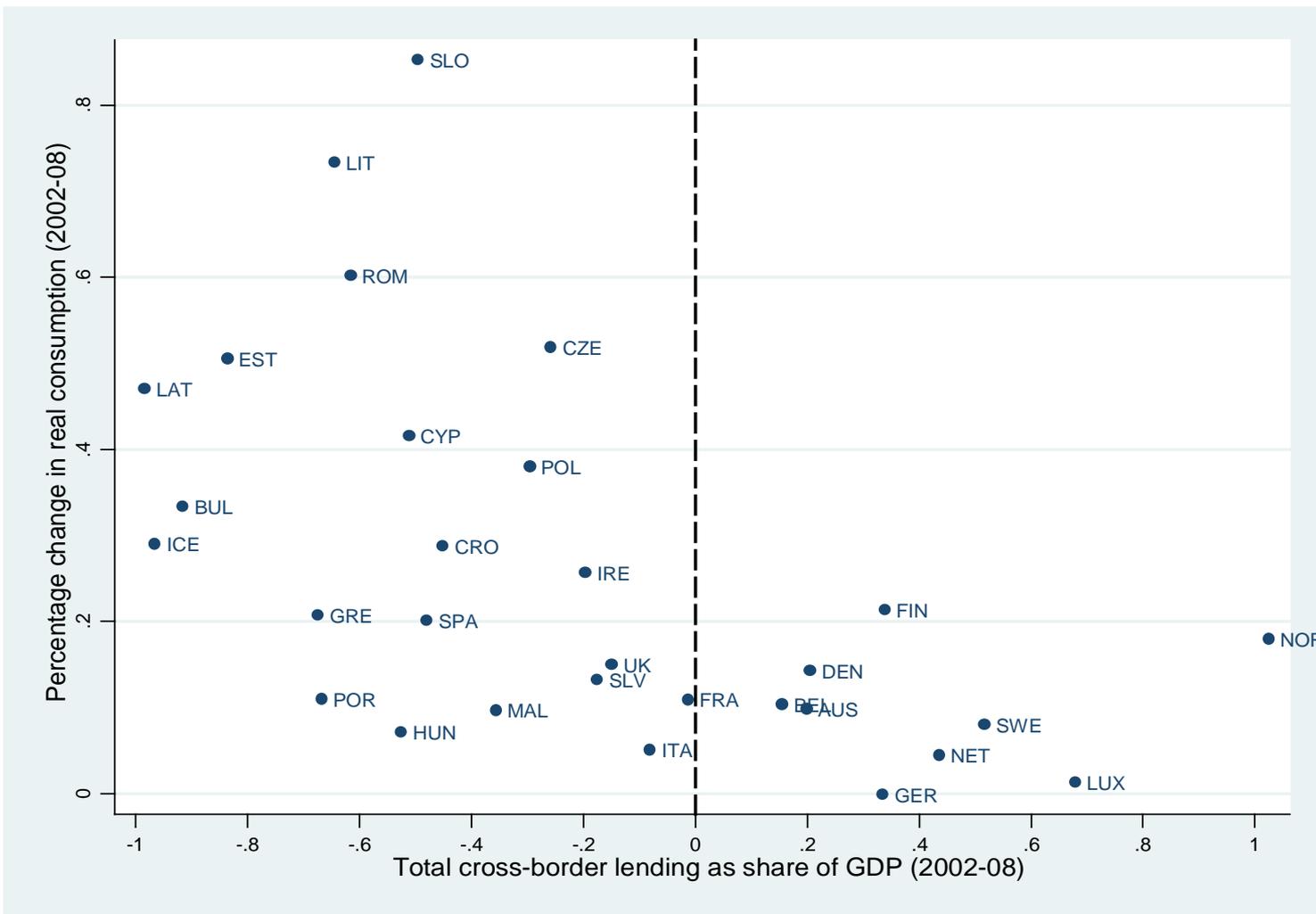
European bust
(~0% annual GDP growth)
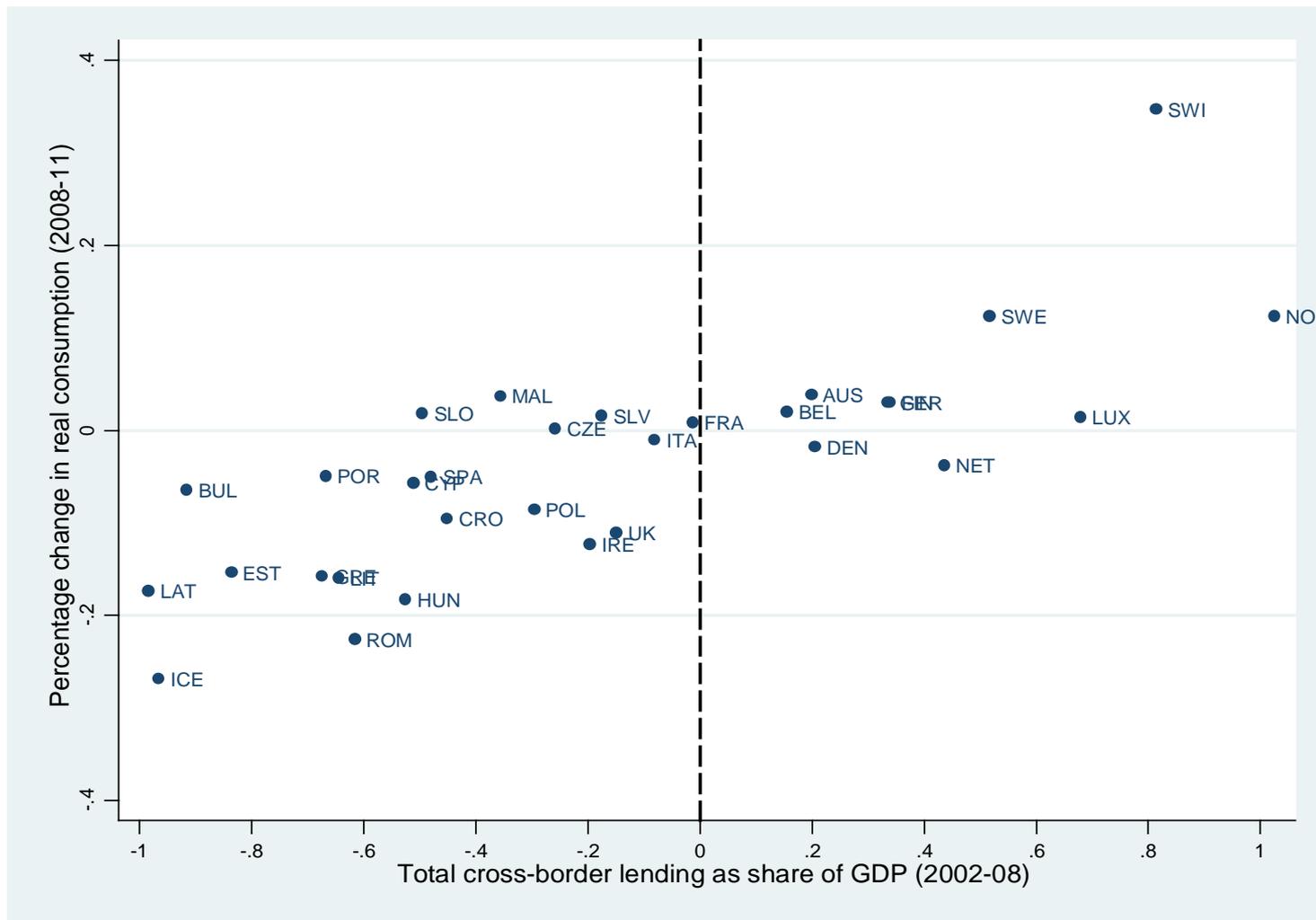
Poor risk-sharing as the cause?

1. Risk-sharing failed miserably

2. And output declined substantially from trend

- Is this a coincidence, or does #1 imply #2?

- Quite strong evidence that it is the latter.
  - ➢ The correlation shows up everywhere
  - ➢ Evidence from the U.S.
  - ➢ The Aggregate Demand Externality

Private Debt and Recessions

Real GDP per capita (% deviation by year)

Normal recessions (conditional):
+ Excess credit
+ 1,2,3 %GDP/year

Financial recessions (conditional):
+ Excess credit =
+ 1,2,3 %GDP/year
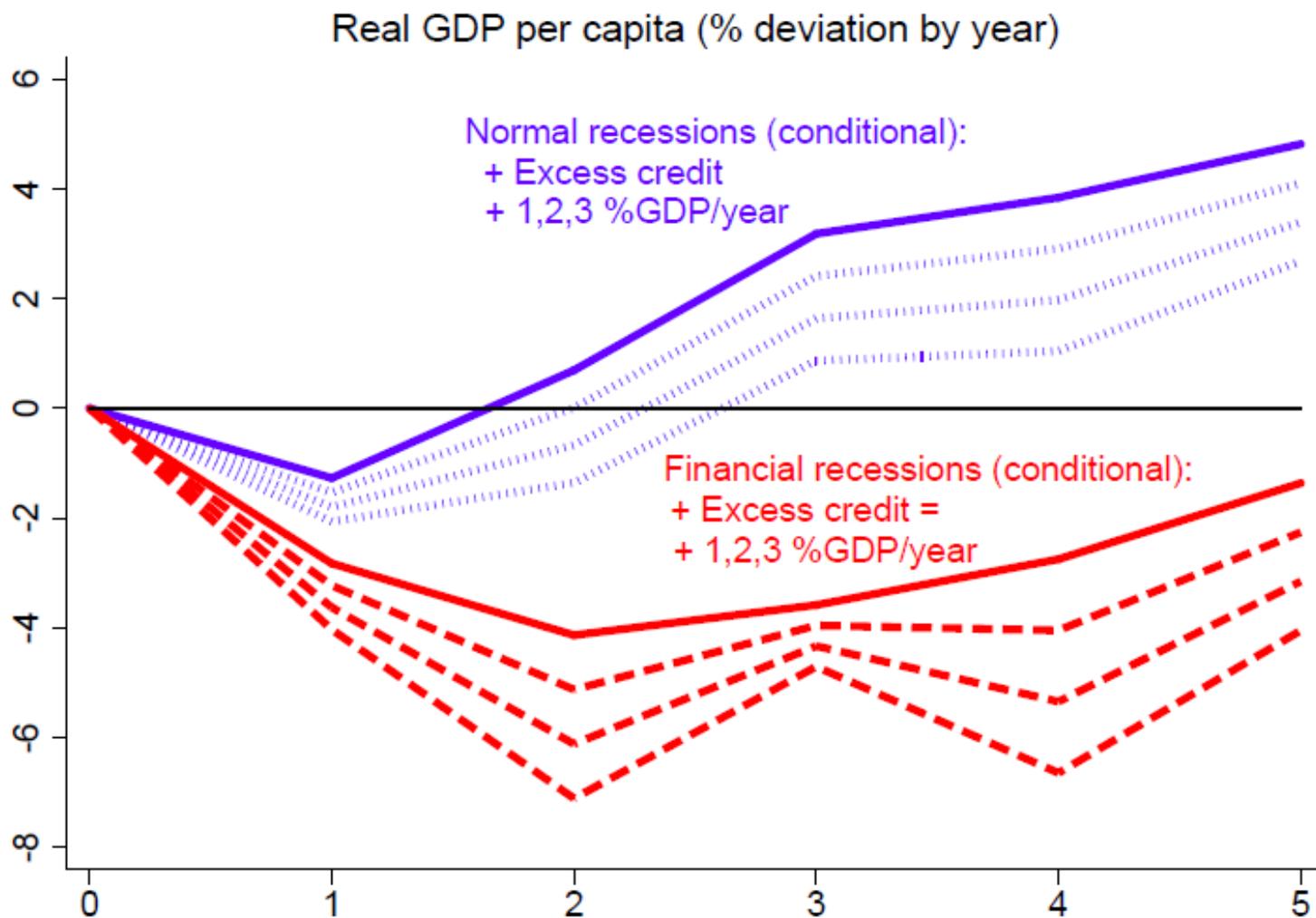
Debt and Redistribution
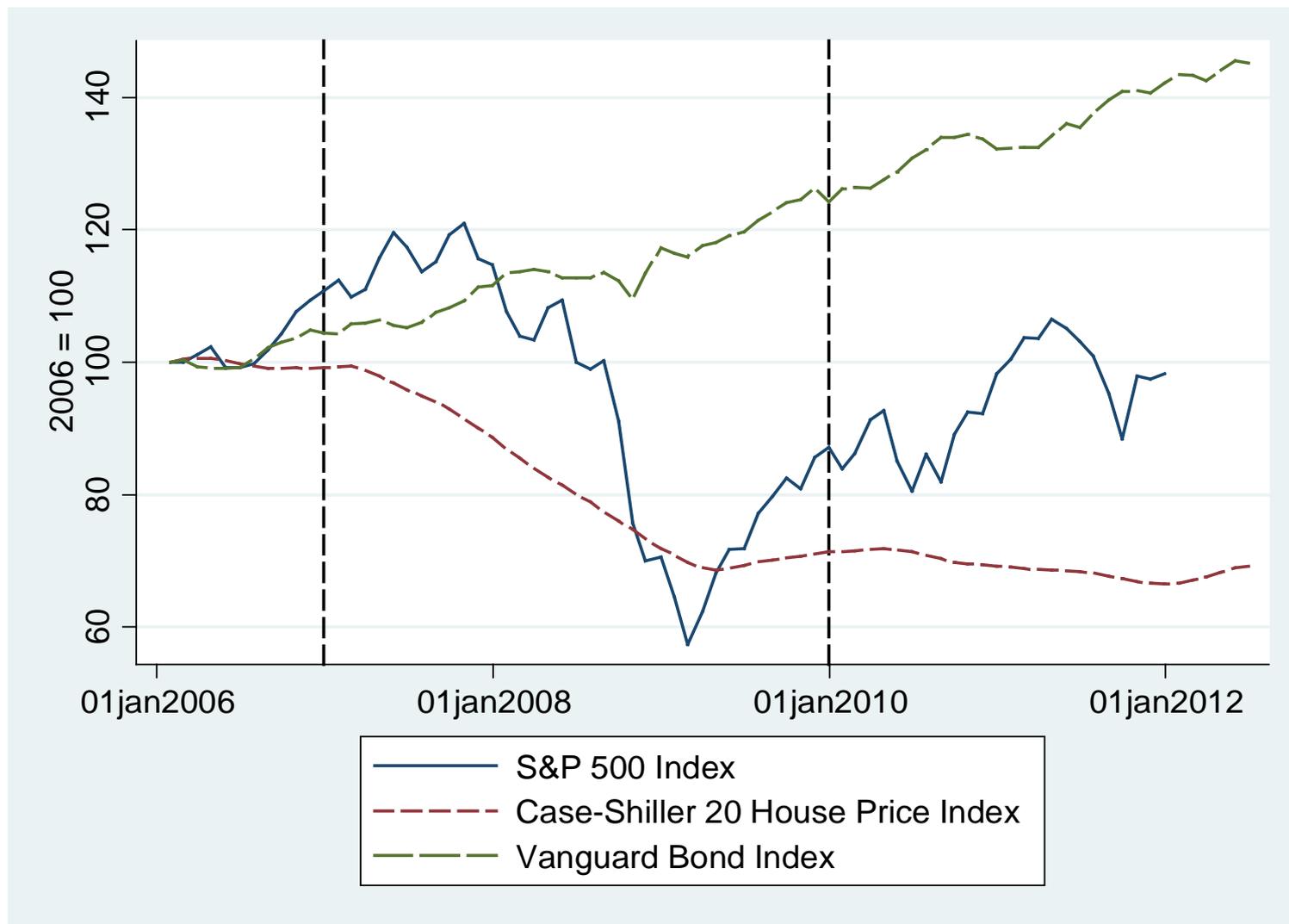
(1) Poor more levered *and* exposed to housing

Chart 1.1: Leverage Ratio for Homeowners By Net Worth Quntile

Legend: Debt (black), Net Worth (gray)

X-axis: Poorest 20%, 2, 3, 4, Richest 20%
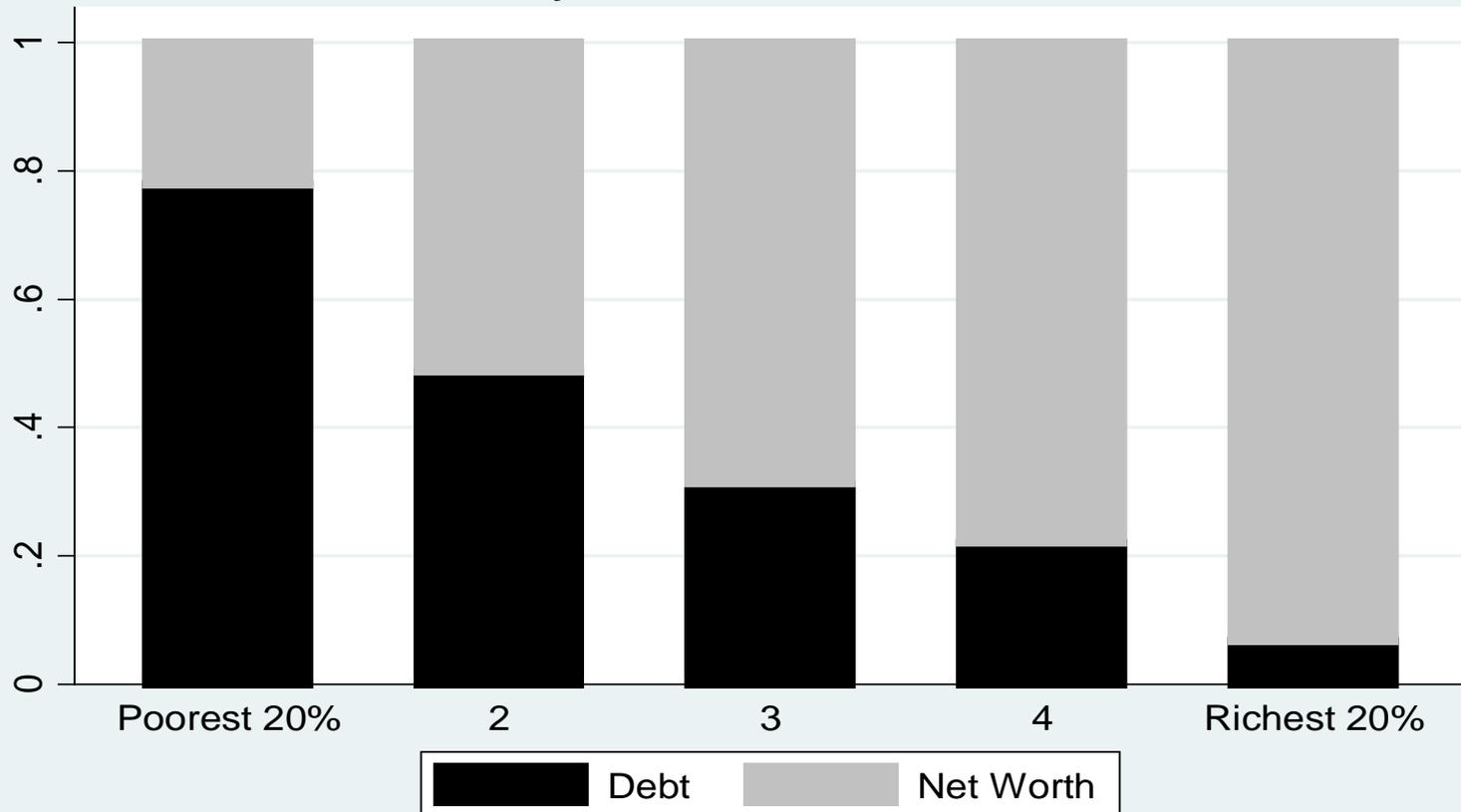
(2) More leverage => large house price decline

Correlation between house price shock and leverage

Distribution of housing net worth shock by decile
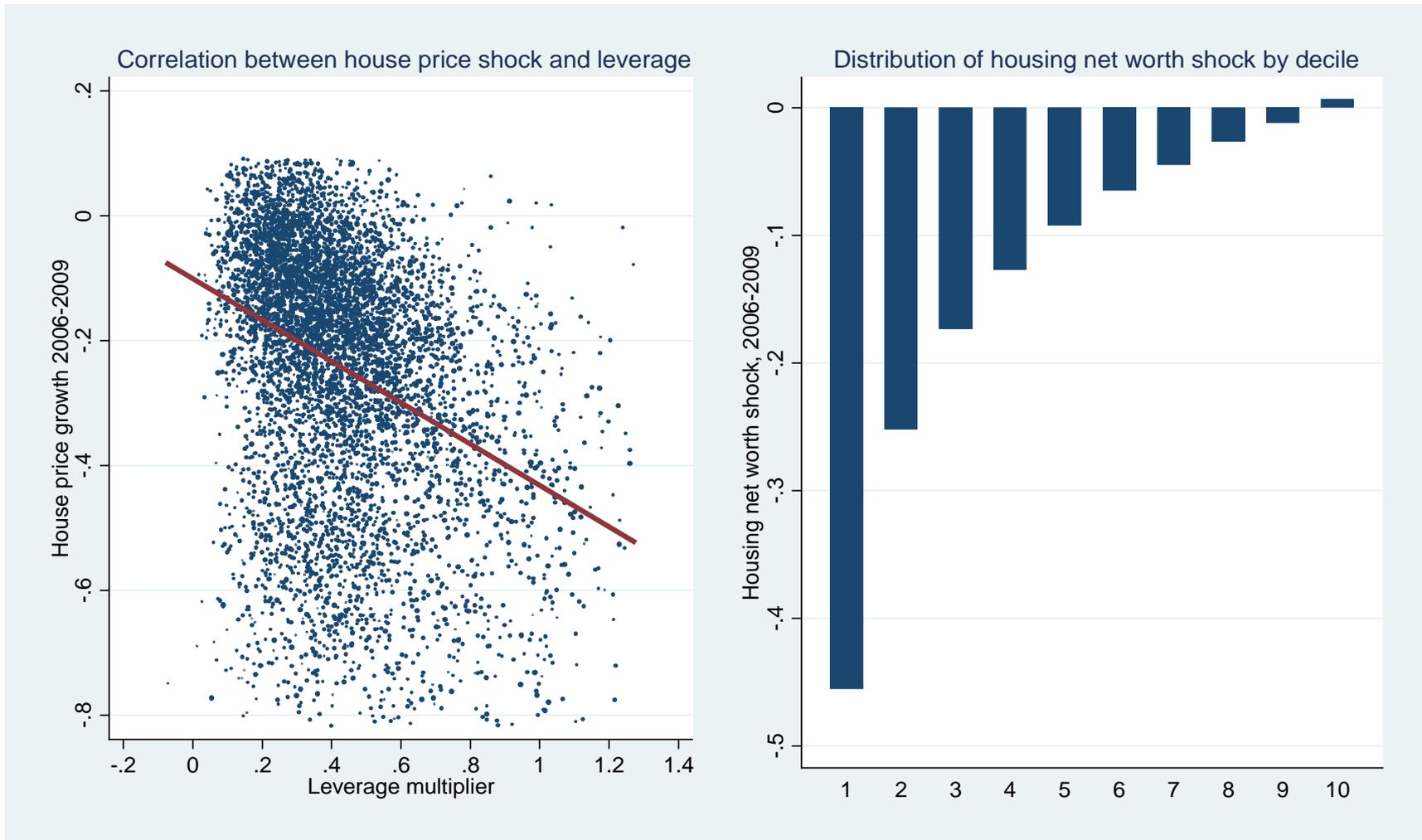
Aggregate demand externality

- Losses fall disproportionately on the debtors
- Debtors have a significantly higher MPC – hence *distribution* of aggregate nominal losses matters
- Creditors have low MPC to begin with, *and* their real consumption is quite insensitive to interest rate movements
  - ➢ Plus debtors are rationed out of the credit market
  - ➢ … monetary policy stuck at the ZLB
- These "demand shocks" propagate and amplify through the trade and employment channels.

Chart 3.2
Spending in Large and Small Net Worth Decline Counties

Legend:
- Large net worth decline counties
- Small net worth decline counties

x-axis: year

MPC

Marginal propensity to consume out of housing

MPC by type of spending
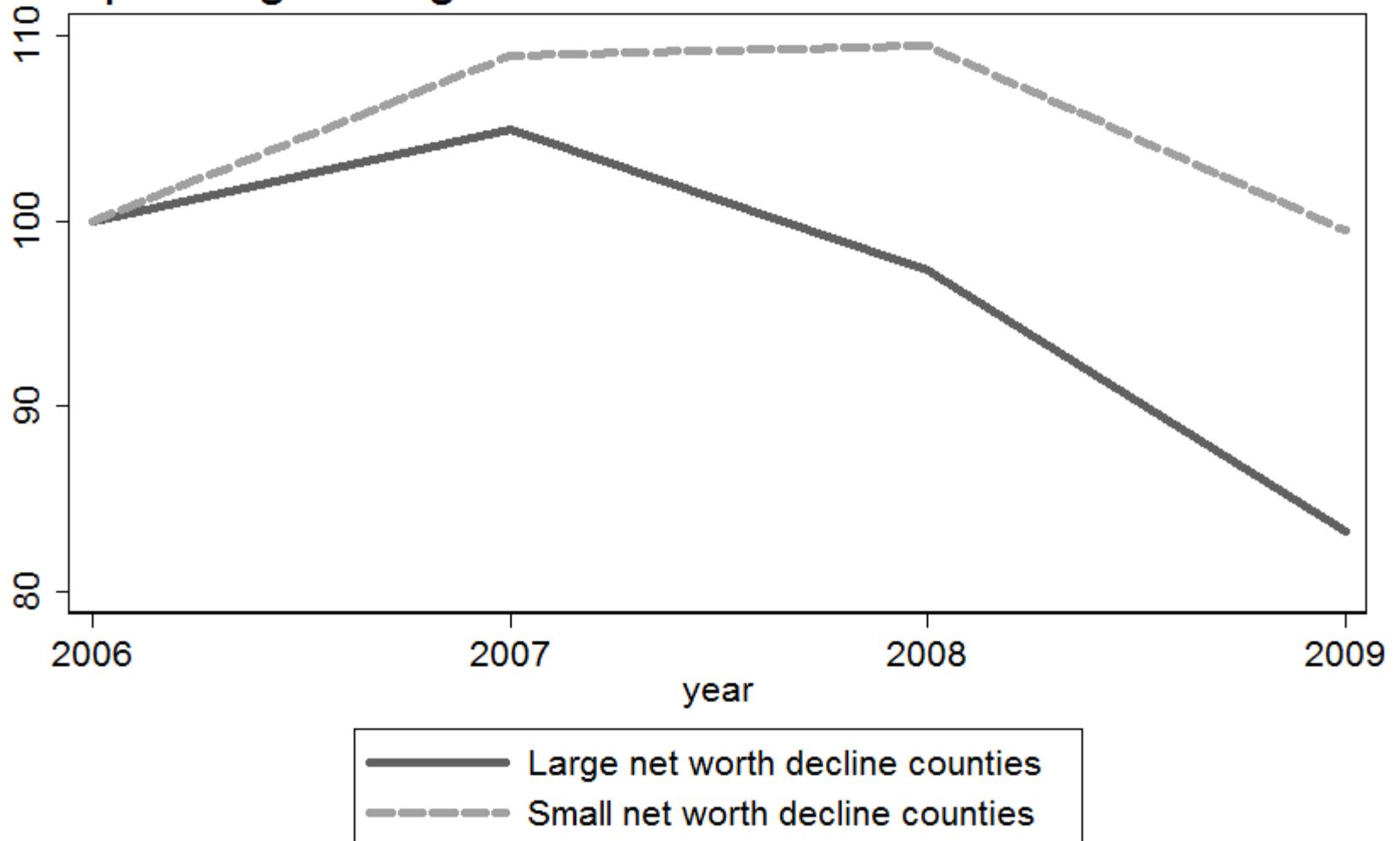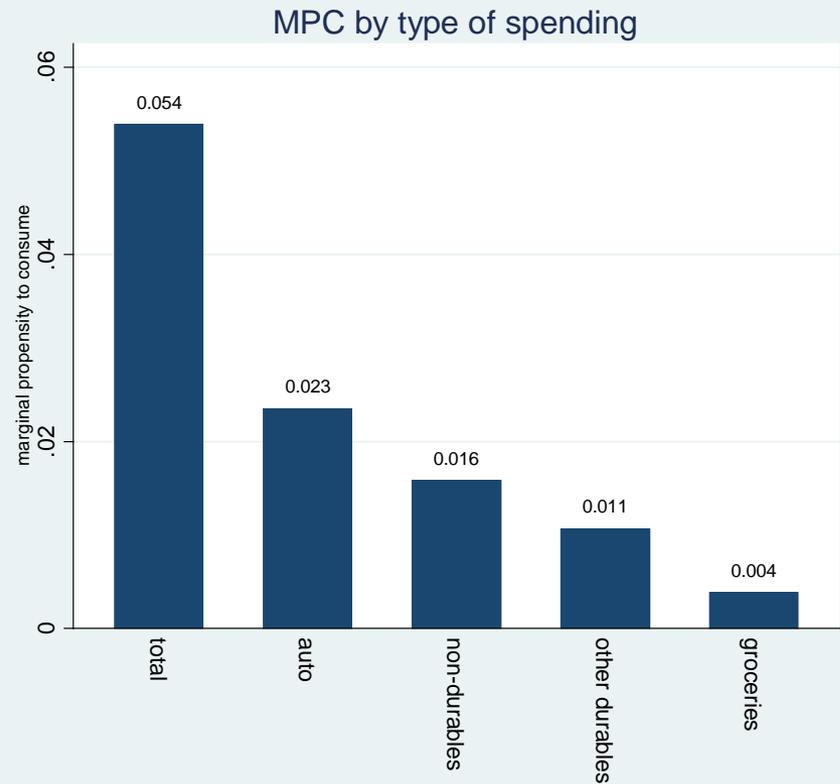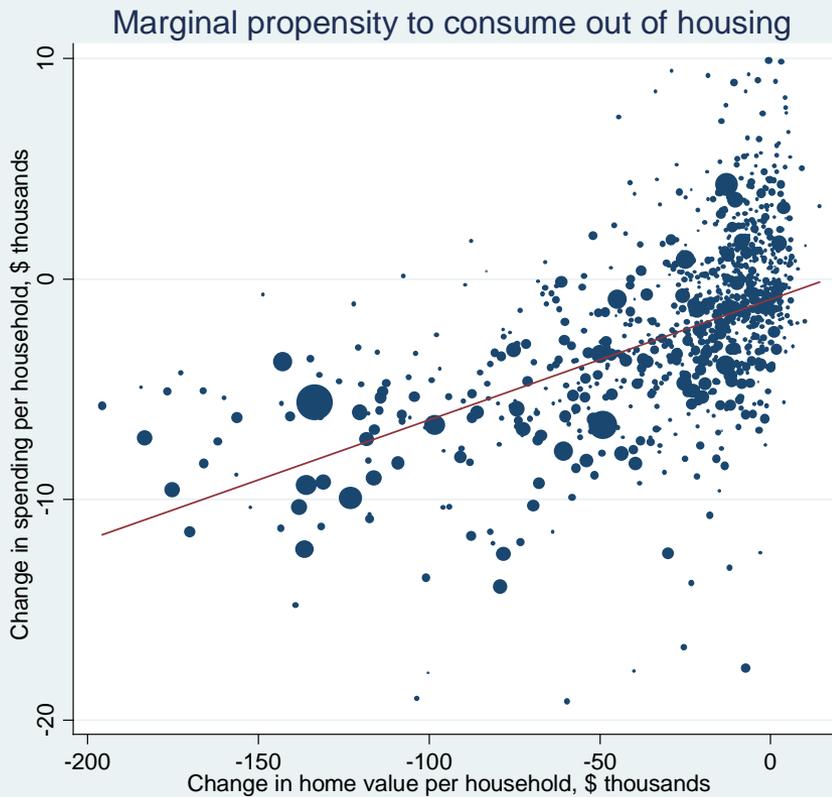
MPC by Income
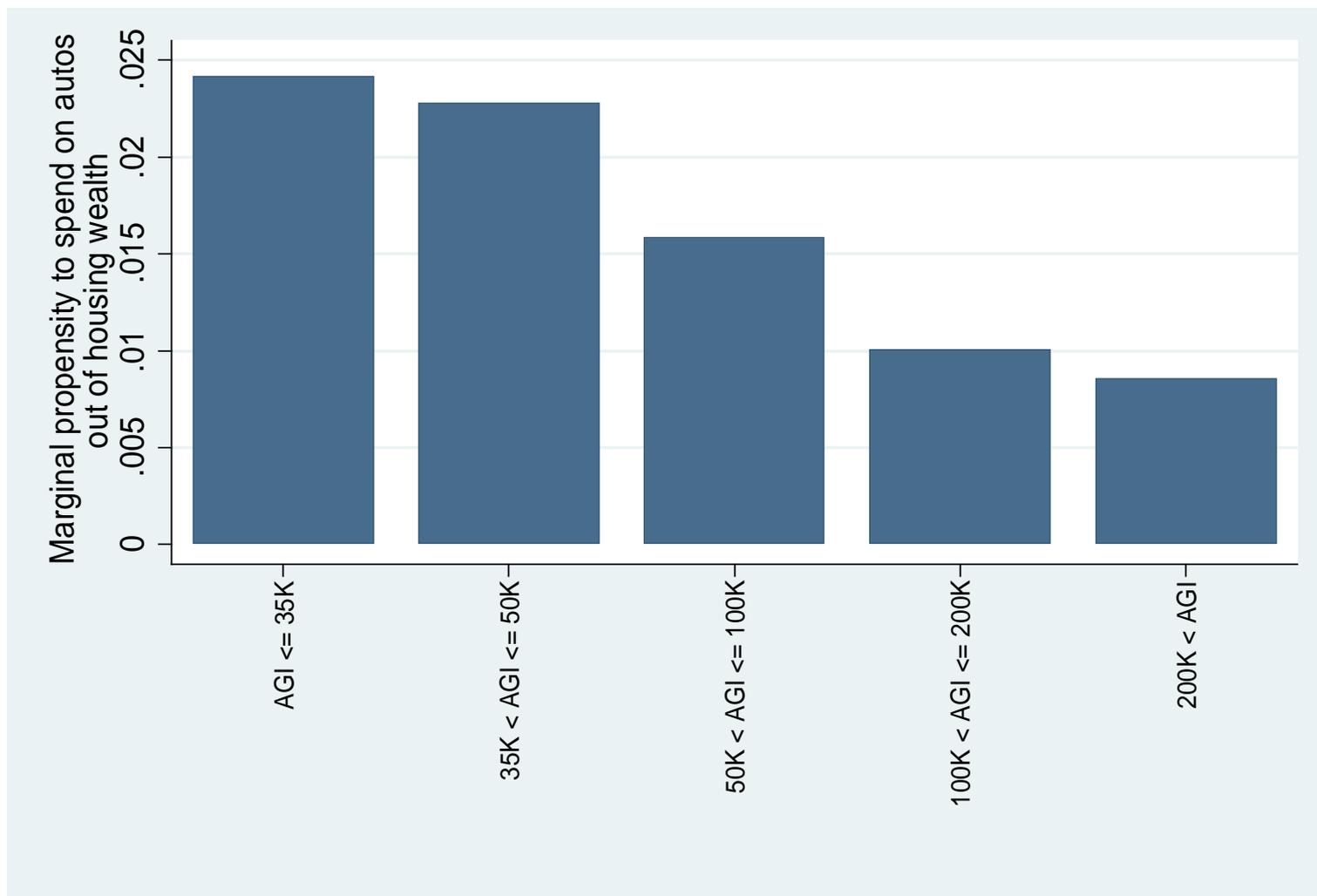
MPC by Leverage
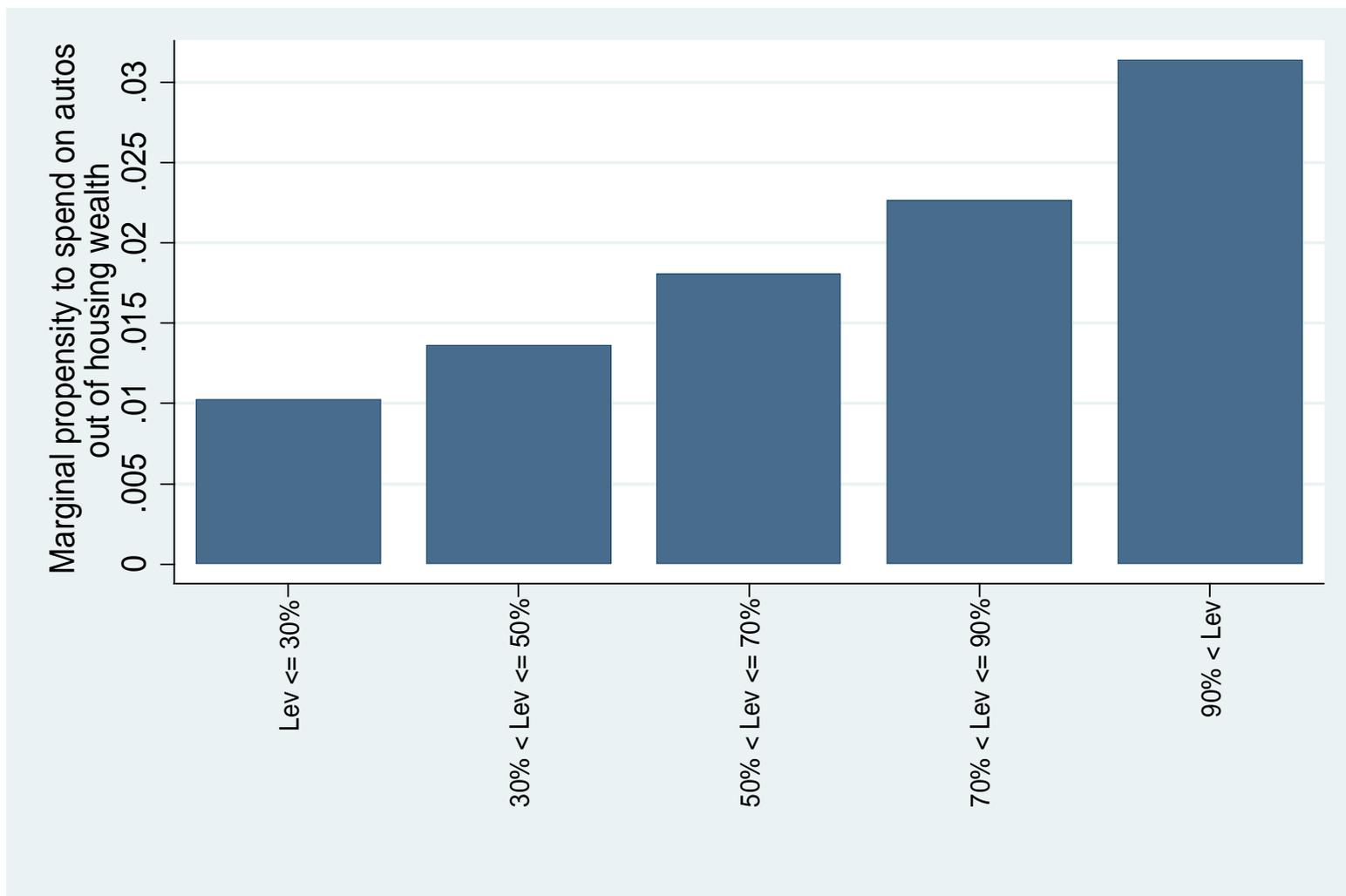
Chart 5.1
Employment Decline during Great Recession

Princeton University
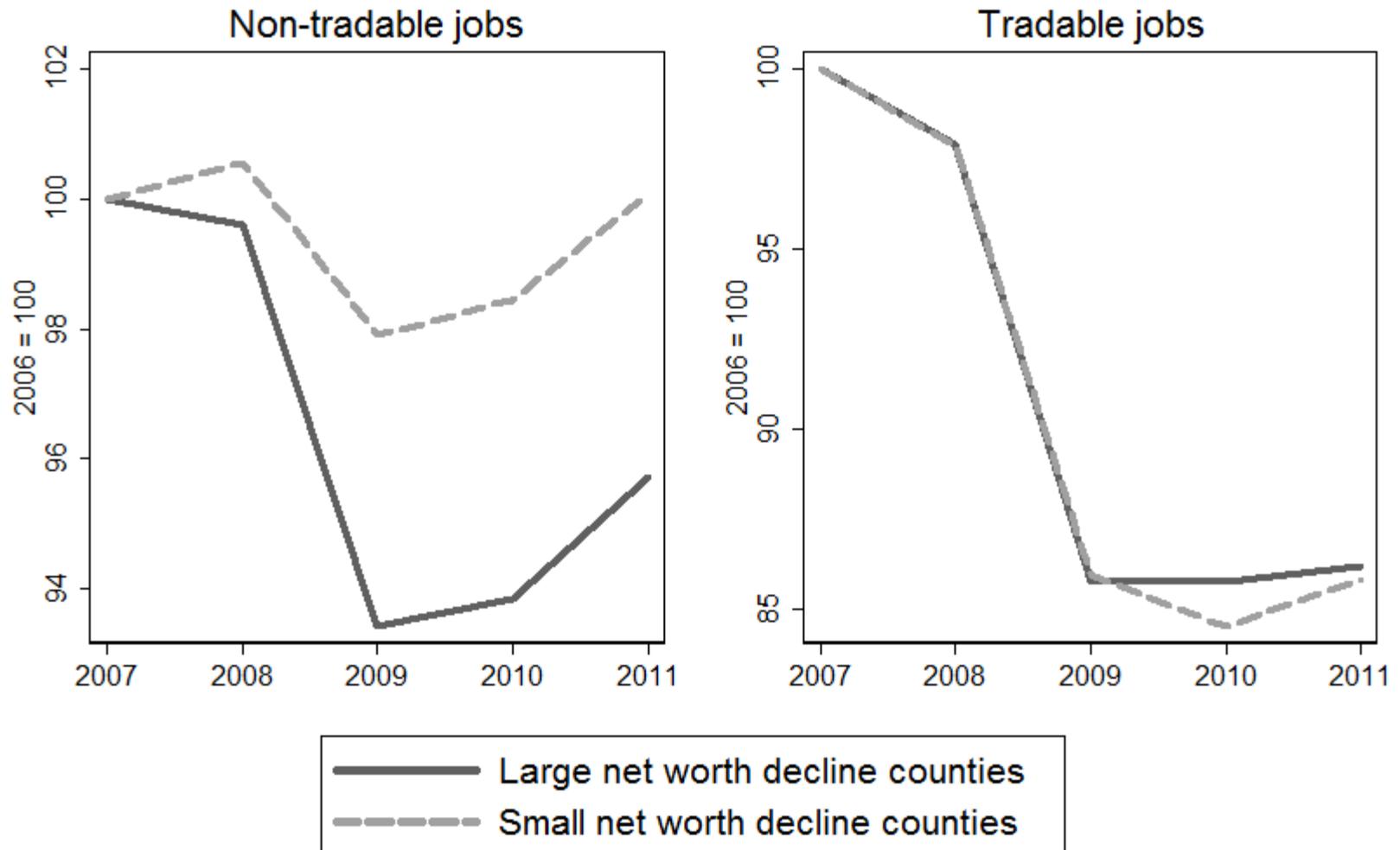
The Employment Kickback
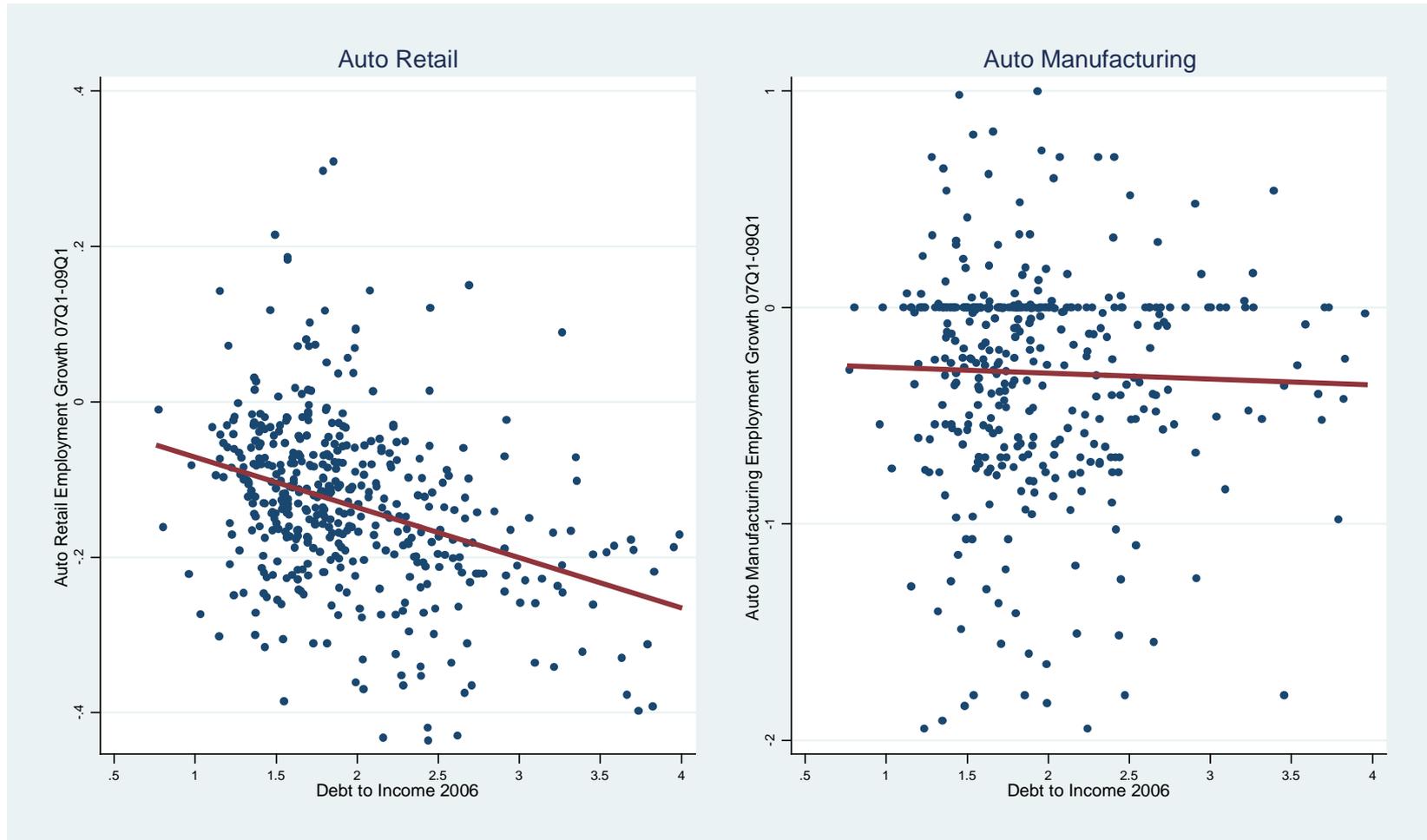
We are in this together
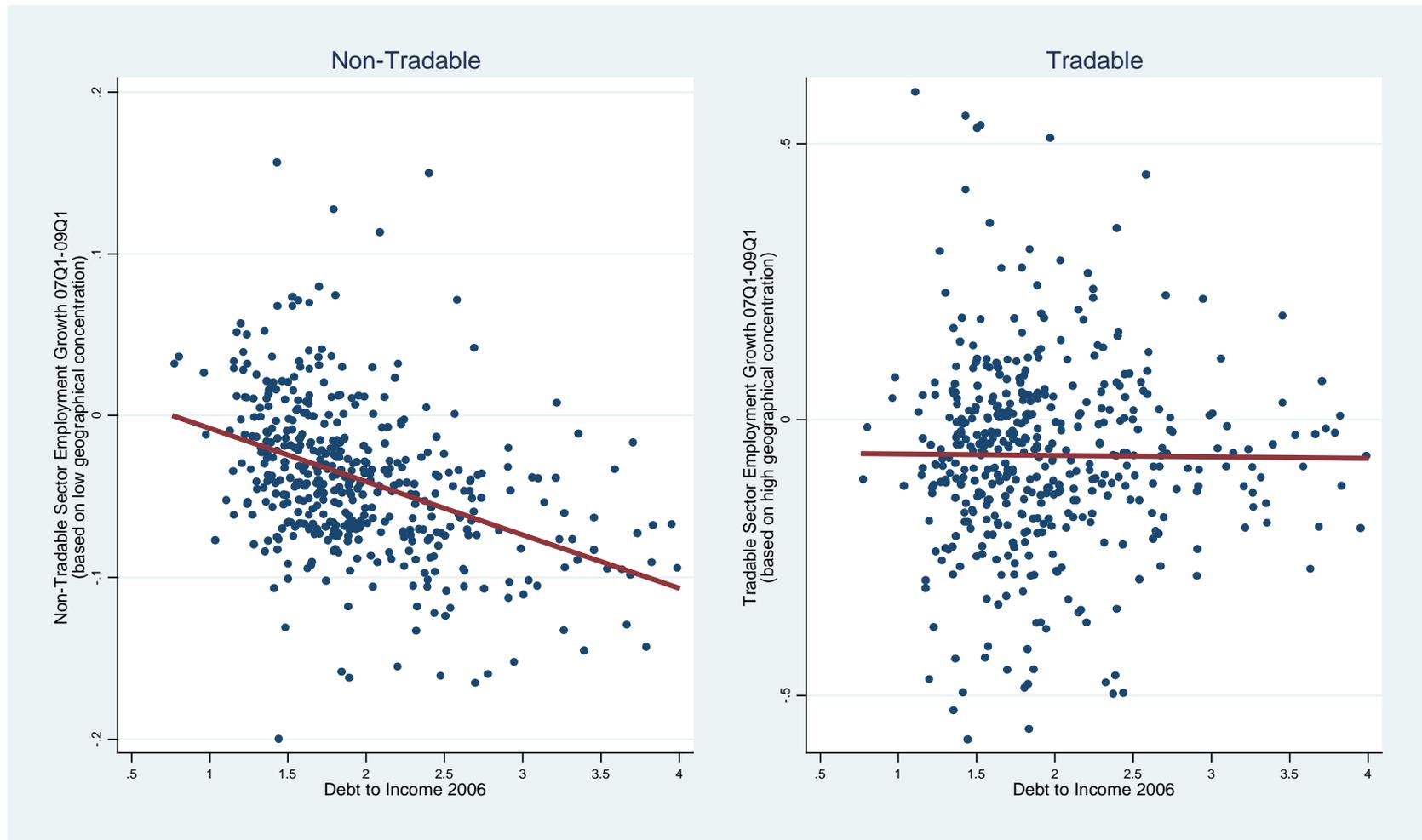
The trade channel: Stumpner (2013)

Table 3: The Effect of the Trade Demand Shock on Industry Growth

	(1)	(2)	(3)	(4)	(5)	(6)
	Employment 2007-09		Earnings 2007-09		Av. Wage 2007-09	
TDS	-0.090***	-0.095***	-0.115***	-0.135***	-0.025	-0.040***
	(0.027)	(0.017)	(0.032)	(0.023)	(0.021)	(0.014)
Observations	1,519	1,519	1,519	1,519	1,519	1,519
R-squared	0.402	0.568	0.428	0.548	0.232	0.280
Industry FE	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓
Specification	OLS	WLS	OLS	WLS	OLS	WLS

Why is risk-sharing so hard?

- We understand the natural agency problems associated with insuring idiosyncratic risk at the individual level.
  - ➤ But here we are talking about macro risks that are in no individual person's control
  - ➤ Moreover, it is easier to observe and contract upon these risks
  - ➤ But we still fail miserably.

- Why is risk-sharing poor?
  - ➤ It is not necessarily the *absence* of necessary financial contracts.
  - ➤ Instead it is the *proliferation* of the wrong kind of financial contracts – namely non-contingent debt.

The need to move away from non-contingent debt

- Why does non-contingent debt exist?
  - The positive theories highlight idiosyncratic risk – but again that is not the issue here.
  - What can we not make contracts contingent on *macro* states of the world?
  - Some natural externalities, some political economy, some tax subsidies
  - But wise policy should realize the collective benefits and internalize the externalities.

What we need

- We need *state-contingent*, *market-based*, *self-executing* contracts that are *credible,* do not involve bureaucratic discretion, and explicitly target the macroeconomic externalities.

- The appropriate mechanism often does not need to be triggered on the equilibrium path. The threat of a credible mechanism is sufficient to reduce financial fragility, and real economic volatility.

- I present an example from the mortgage market.

Shared Responsibility Mortgages (SRM)

- Standard mortgage payment (say 30-year fixed), except:
  - (i)   lender offers *downside protection*
  - (ii)   borrower gives up *5% capital gain* when house sells.
- 30-year FRM @ 5%
- Annual mortgage payment of $5,204 based on 100K house bought today and 80K mortgage.
- Assume local (e.g. zip code) house price index LHPI= 100 today.
- Year 1 payment = $5,204
- However, year 2 payment depends on LHPI at the beginning of year 2.

SRM Example

- If LHPI>=100, nothing happens. Year 2 payment remains $5,204 and standard amortization schedule applies.

- If LHPI<100, say 90, then mortgage payment declines by 10%.

- Key: *amortization schedule remains the same* despite lower payment.

- As long as LHPI is below 100 by X%, total annual mortgage payment falls by X%.

SRM Characteristics

- Automatic principal write down since amortization remains the same. For example, if prices remain down by 10% forever, 10% of principal is written down over the remaining life of the mortgage.

- No moral hazard since borrower does not control LHPI.

- Local index easy to construct off of public records (Case-Shiller, CoreLogic etc.) and can be overseen by the government for credibility.

SRM stress testing

- Is costly for lender relative to FRM. How high is the cost? Can we do something to neutralize the cost?

- Avg. house price growth = 3.7%
  Annual volatility = 8.3%
  Simulate house prices => 1.4% of initial mortgage amount is cost for lender.

- Can we make SRM cost neutral?

- Yes, with a 5% capital gain at point of sale / refinance

SRM characteristics

- 4 to 5% of housing stock turns over each year
- Securitization to give a stable flow of capital gain cash to the lenders.
- House price growth and volatility implies that lender comes out 0.8% of loan amount ahead.
- So on average the cost is same as FRM ex-ante.

Additional G.E. benefits

- In the SRM-world, there are no foreclosures by definition and no concentration of losses on borrowers => Great Recession largely avoided!

- See our forthcoming book *House of Debt*

- House price volatility is *lower* than historical (hence our net cost is even lower)

- Automatic, market-based "lean against the wind": Lender more at risk when prices are high, and hence will charge higher interest rate.

Summary

- The failure of risk-sharing in Europe, and fall in output
- Robust historical pattern
- Lack of risk-sharing leads to fall in output due to the Aggregate Demand Externality.
  - ➤ U.S. evidence on the polarizing nature of financial shock
  - ➤ Major failure of risk-sharing within the U.S.
  - ➤ Aggregate demand externality through:
  - ➤ MPC heterogeneity
  - ➤ Interest rate insensitivity (one can add nominal rigidity)
  - ➤ Employment channel
  - ➤ Trade channel
- Solution: Towards state-contingent contracts
- SRM as an example.

The curious case of China

Overcapacity worsening as debt climbs

Capacity utilisation ▬▬   Debt/GDP ▬▬

Source: CEIC, CLSA

Princeton University