

# Unemployment During the Great Recession ... and After

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# Outline

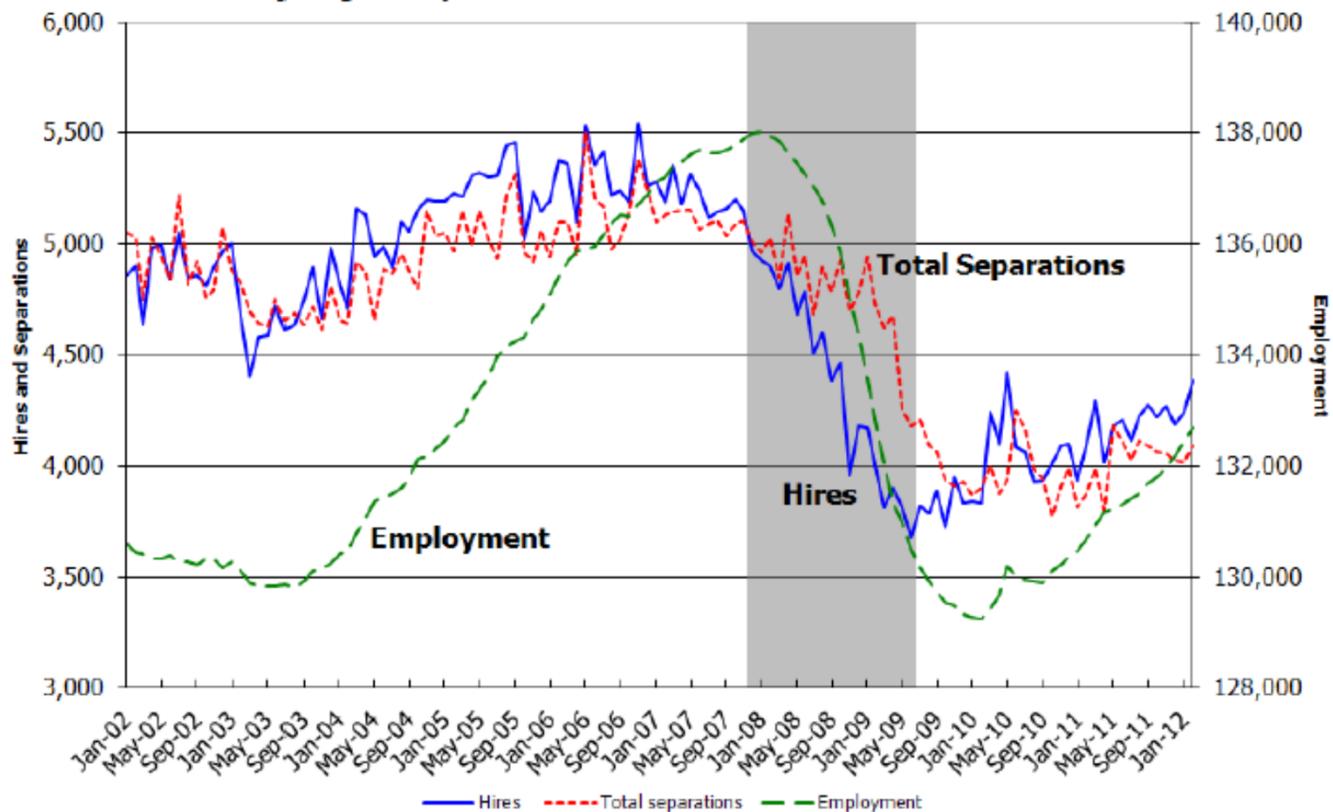
- ▶ Introduction
- ▶ The Flows Approach to Unemployment Analysis
- ▶ The Role and Determination of Job Openings
- ▶ The Great Recession ... and after
- ▶ Conclusions

# The Flows Approach

- ▶ The labor market is dynamic. Large flows of workers are finding (losing) jobs...in both 'good' and 'bad' times.
- ▶ The simultaneous existence of unemployment and job openings reflect search friction (the time it takes to form a mutually acceptable match.)
- ▶ Unemployment (employment) is a stock of workers that tends toward a level that balances large inflows (separations) with large outflows (new hires).
- ▶ Movements in unemployment reflect movements in job openings.

# Labor Market Flows

**Chart 3. Hires, total separations, and employment**  
Seasonally adjusted, in thousands



Source: Bureau of Labor Statistics, Current Employment Survey and Job Openings and Labor Turnover Survey, April 10, 2012.

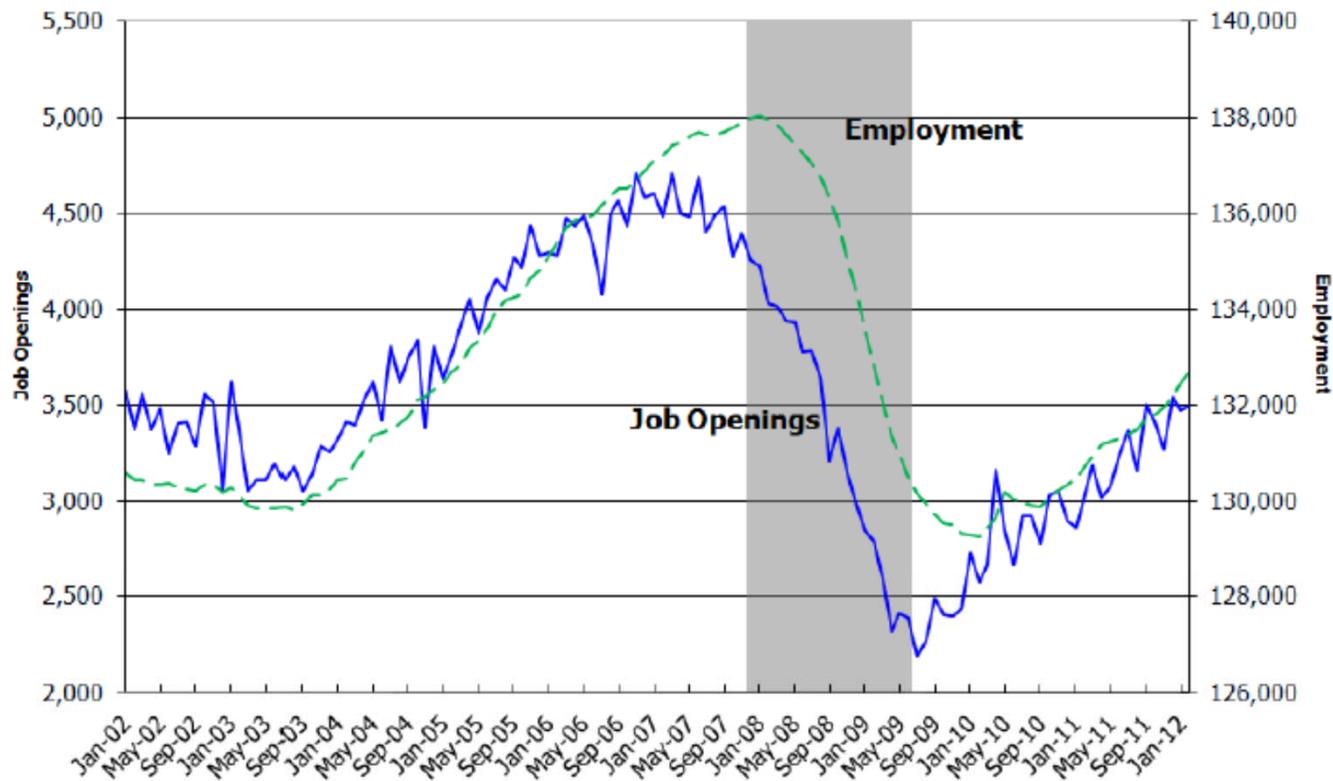
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research (NBER).

# Matching, Flow Balance, and the Beveridge Curve

- ▶ **The matching hypothesis:** The job finding probability increases with the ratio of job opening to unemployment.
- ▶ **Flow balance equation:** Unemployment (employment) tends to the value that balances inflows and outflows
- ▶ Together these explain the so-called **Beveridge Curve**, a negative association between job openings and unemployment.

# Job Opening and Employment

**Chart 2. Job openings and employment**  
Seasonally adjusted, in thousands



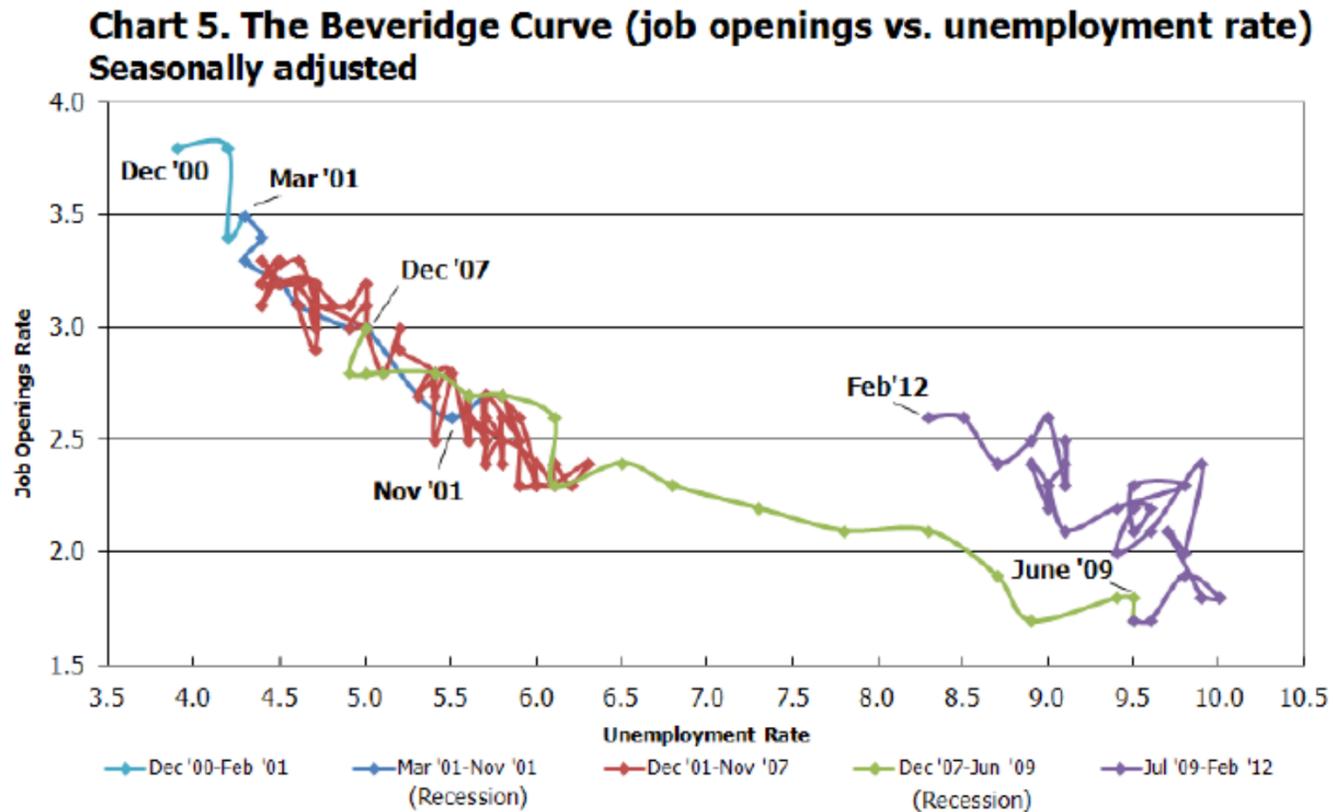
Source: Bureau of Labor Statistics, Current Employment Survey and Job Openings and Labor Turnover Survey, April 10, 2012.

Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research (NBER).

# US Beveridge Curve

## Dec 2000-Feb 2012

Job Opening Rate



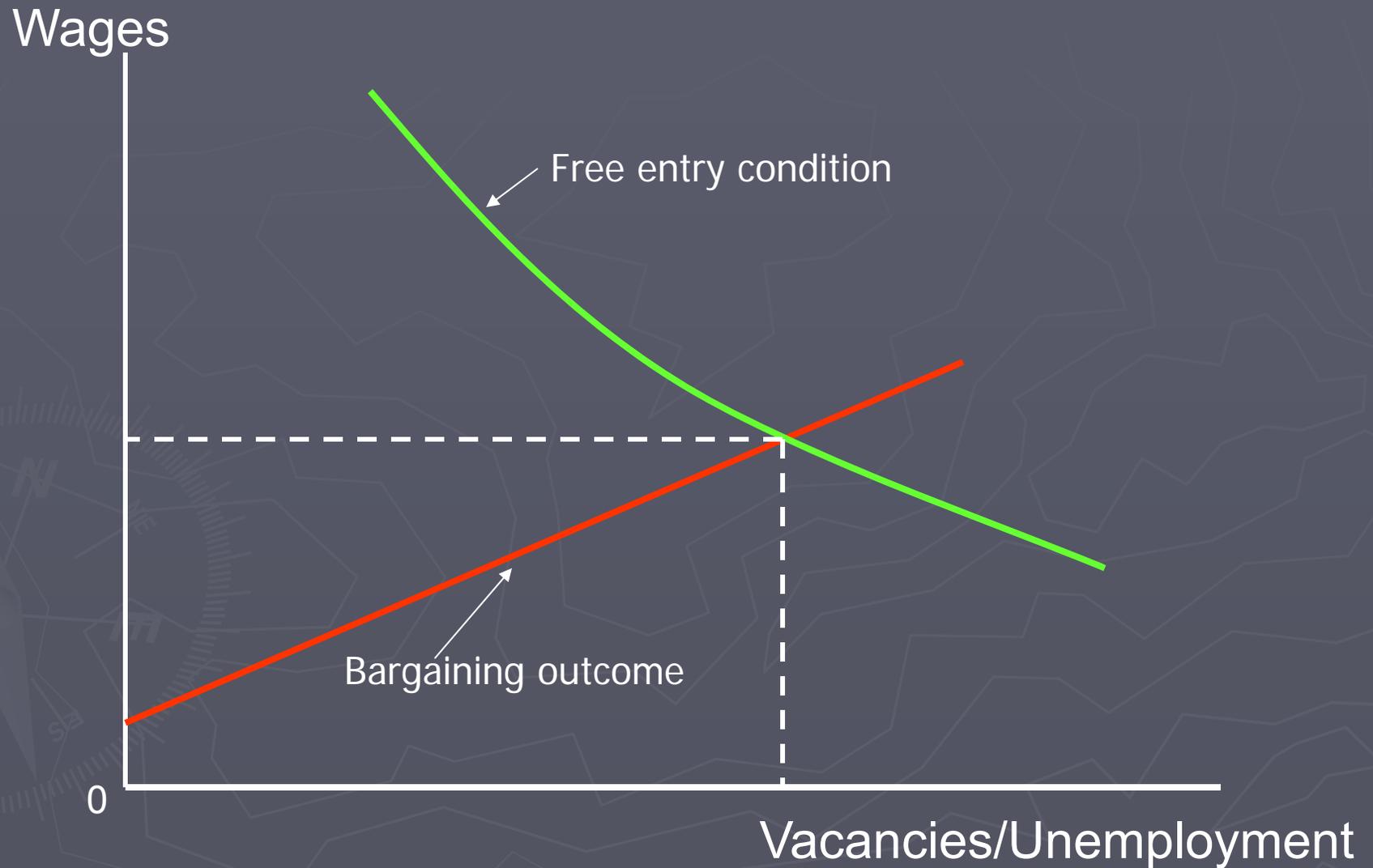
Source: Bureau of Labor Statistics, Current Population Survey and Job Openings and Labor Turnover Survey, April 10, 2012.

Unemployment rate

# Economics of Search Equilibrium

- ▶ **The 'free entry' condition:** Given expected demand for goods and services, jobs are created until the value of the marginal vacancy is zero. Implies that fewer vacancies are created per unemployed worker when the wages promised to workers are higher.
- ▶ **The bargaining outcome:** Workers and employers share the surplus value of a match. Implies that wage demands are higher when it is easier to find a job.
- ▶ A **search equilibrium** is a job openings to unemployment ratio and a wage pair that balances these two forces.

# The DMP Model



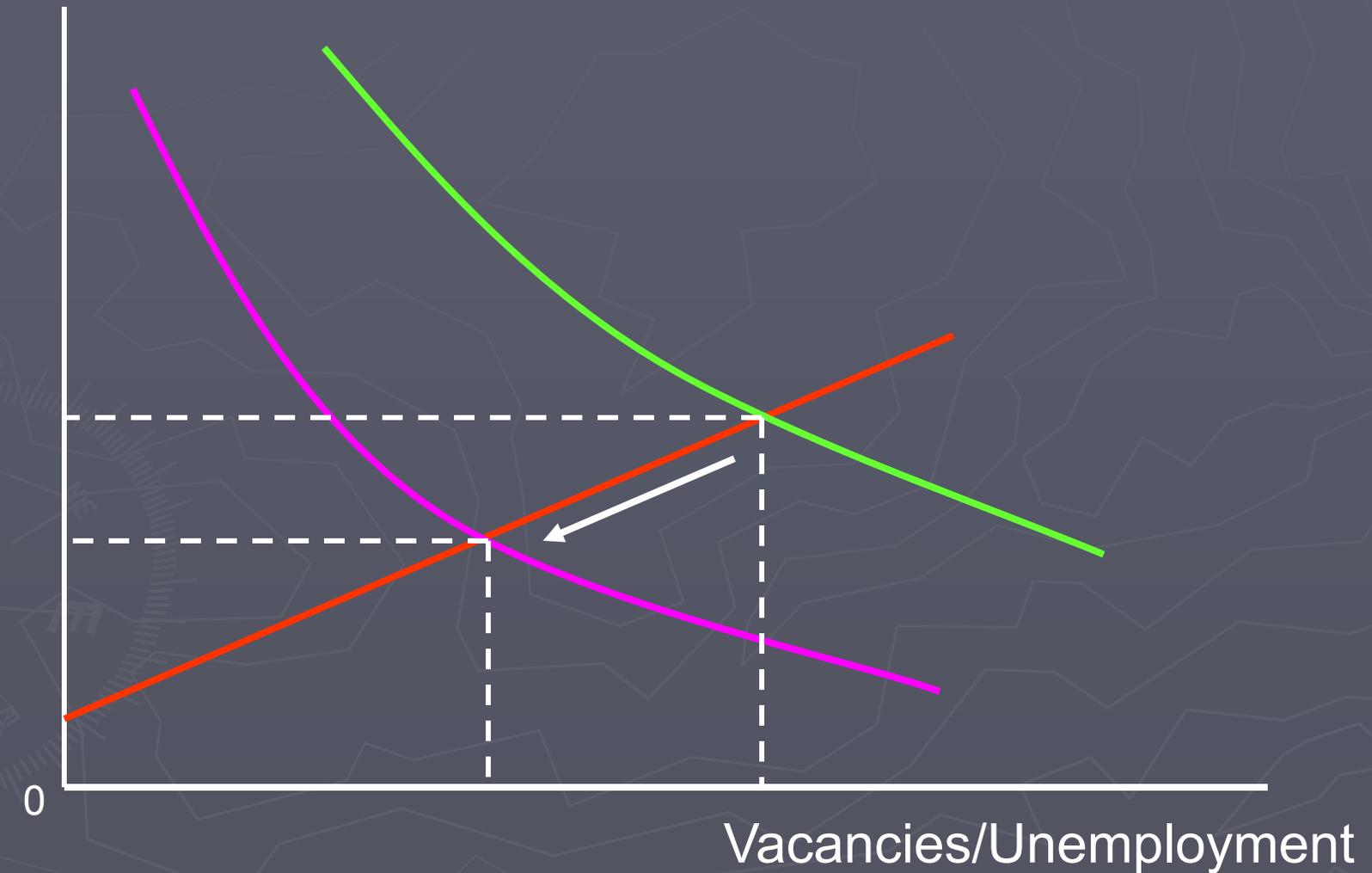
# Number of Job Openings Reflect the Value of a Match...

- ▶ Depends on two uncertain variables
  - The stream of future match revenues.
  - The rate at which this stream is discounted.
- ▶ The housing and financial crisis affected both
  - Households reduced consumption expenditure to replenish wealth.
  - Banks restricted lending and increased the effective interest rate that borrowers pay.
- ▶ The expected value of a match fell for both reasons generating a drop in the job finding probability...a move down the Beveridge curve.

# The Great Recession

## A Negative Demand Shock

Wage Promise

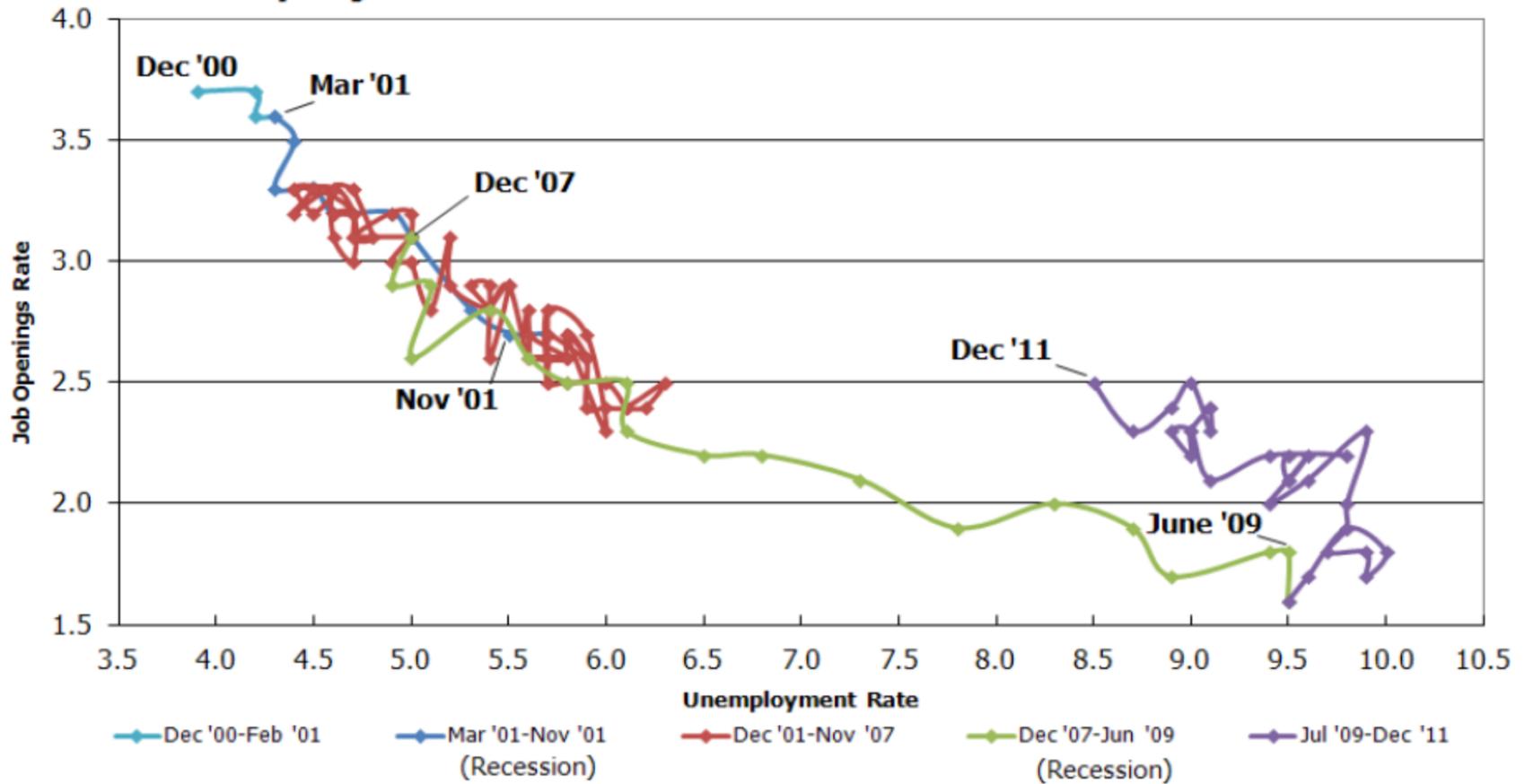


# US Beveridge Curve

Dec 2000-Dec 2011

Vacancy rate

### Chart 5. The Beveridge Curve (job openings vs. unemployment rate) Seasonally adjusted



Source: Bureau of Labor Statistics, Current Population Survey and Job Openings and Labor Turnover Survey, February 7, 2012.

Unemployment rate

# After the Recession: Has the “natural rate” of unemployment increased ?

- ▶ “What does this change in the relationship between job openings and unemployment connote. In a word, mismatch.” ...Narayana Kocherlakota (Minneapolis Fed Pres., address, 8/17/2010)
- ▶ “Instead, the elevated unemployment rate appears to reflect mainly cyclical factors, particularly the lingering shortfall of consumption spending and business investment.” ...Christina Romer (Obama’s former Council of Econ Advisors Chair, *NY Times*, 4/10/2011)
- ▶ “The high unemployment reflects the lack of demand rather than any fundamental problems with the US labour market.” ...Martin Feldstein, Reagan’s Council of Econ Advisors Chair, *Financial Times* 7/25/2011

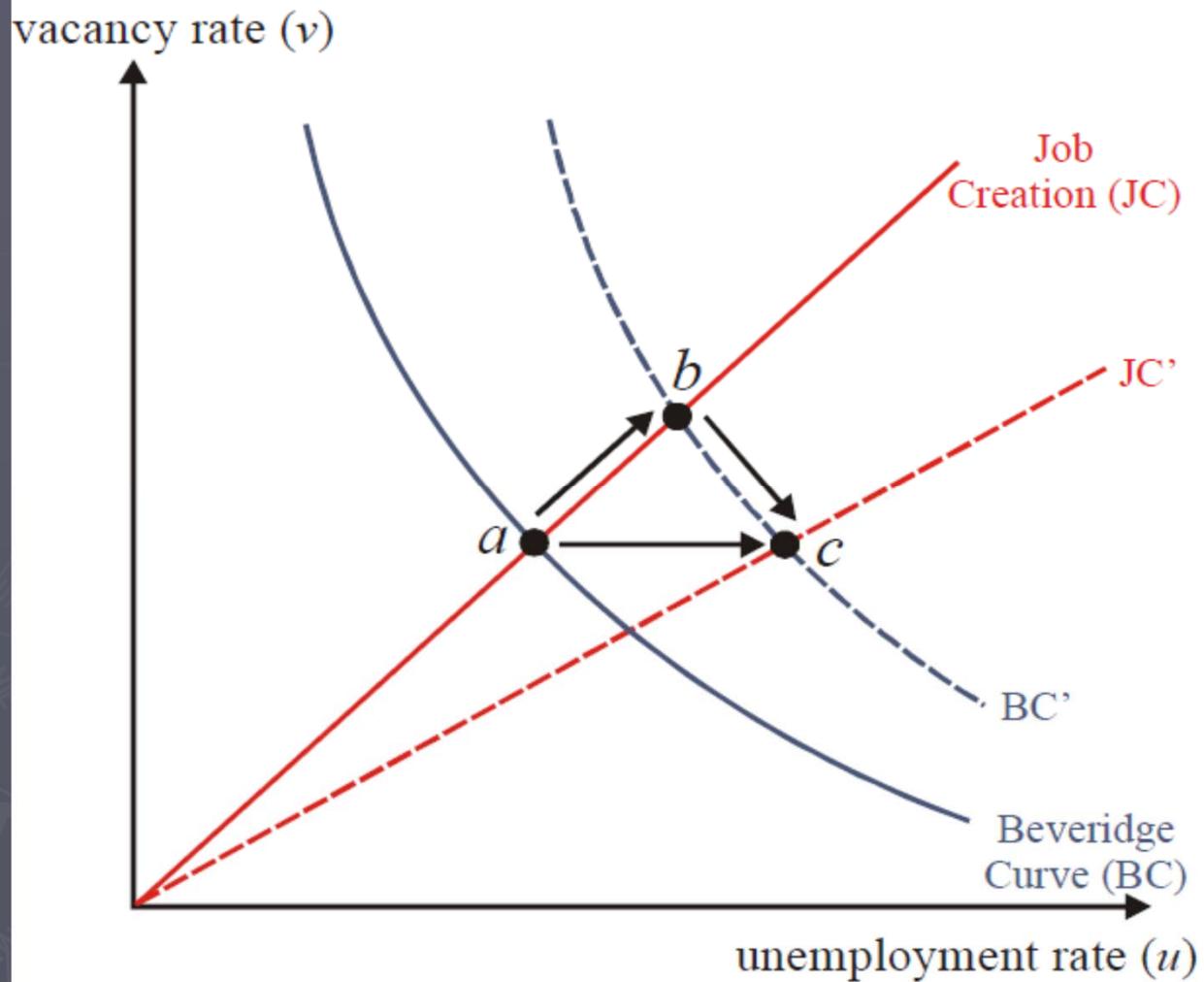
# Arguments for “Mismatch”

- ▶ The Beveridge curve has shifted out...reflecting the fact that it may have become harder to match workers and job.
- ▶ Construction and finance industries were adversely affected, employment fell by about about 1.3 million in these sectors. Most new jobs are in health services.
- ▶ Housing market “lock” (11 million mortgages “under water”) has reduced interregional mobility.
- ▶ Extended U.I. benefits (from 26 to 52+ weeks) have reduced worker search effort.

# Recent Study I

- ▶ Barlevy (Chicago FED), "Evaluating the Role of Labor Market Mismatch in Rising Unemployment." *Economic Perspectives*, Fed. Res. Bank of Chicago, QIII 2011.
  - Uses the observed outward shift in the aggregate BC and the DMP model implied response in the free entry condition to estimate the effect on unemployment.
  - Obtains an estimate of 1.5 percentage points increase.

**Figure 2.** Determinants of shifts in equilibrium unemployment.



Source: Daly, et al. (2011)

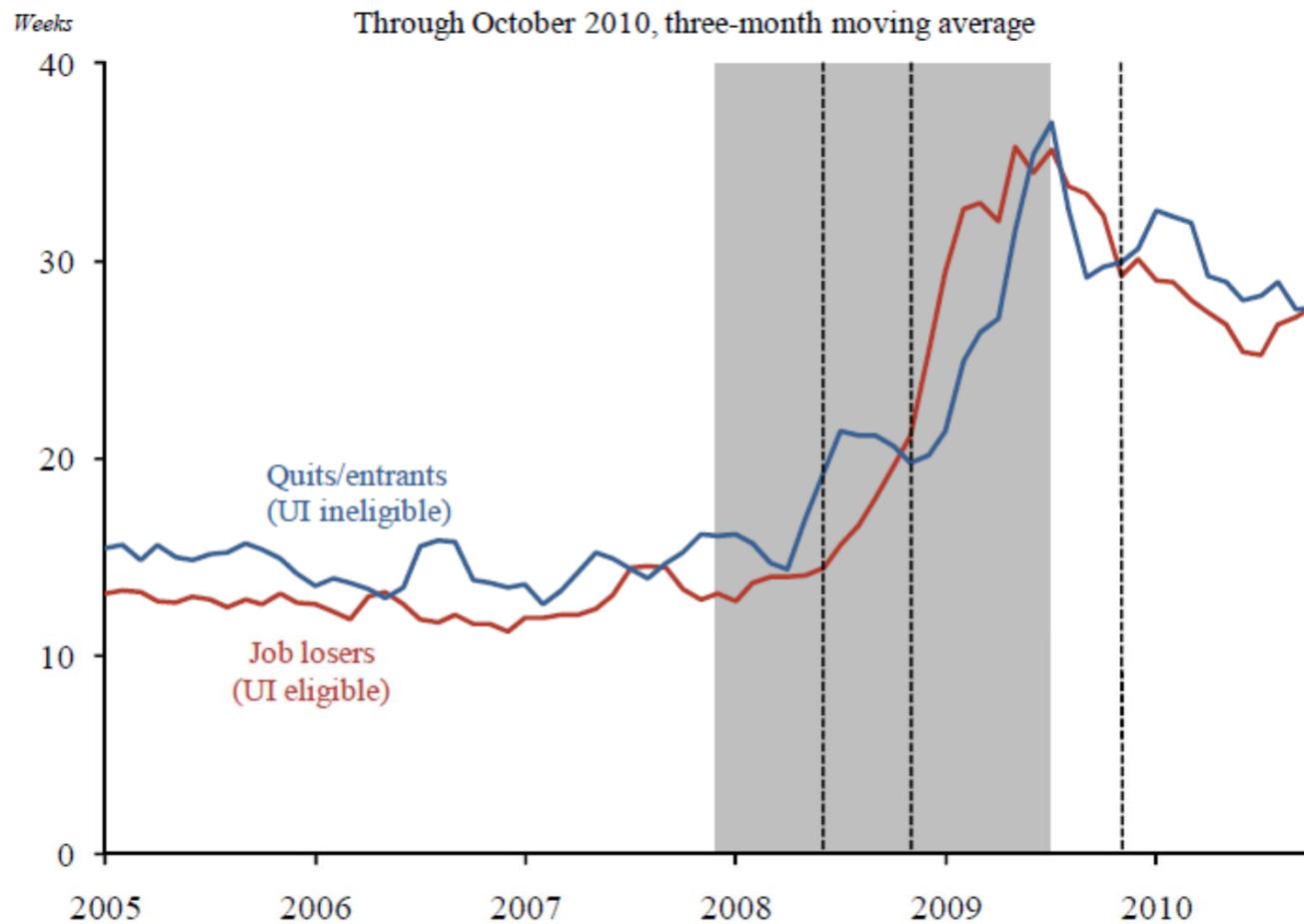
# Recent Study II

- ▶ Violante et al (NYU and NY FED),  
“Measuring Mismatch in the U.S. Labor Market,” June 2011
  - Analysis based on the fact that increased dispersion in tightness ( $v/u$ ) across submarkets will shift the aggregate BC out.
  - Use observed changes in occupation and industry tightness, to estimate the contribution of mismatch as  $+0.8$  to  $1.4$ .

# Recent Study III

- ▶ Daly et al. (SF Fed), "The Recent Evolution of the Natural Rate of Unemployment, July 2011," IZA Discussion Paper No. 5832
  - Use historical data to estimate the response of the job creation to shifts in the "natural rate".
  - Also considers the effect of extended UI benefits on worker search effort.
  - Finds that mismatch accounts no more than +0.8 percentage point and that extended UI accounts for +0.6 percentage points.

**Figure 13. Unemployment duration by reason.**



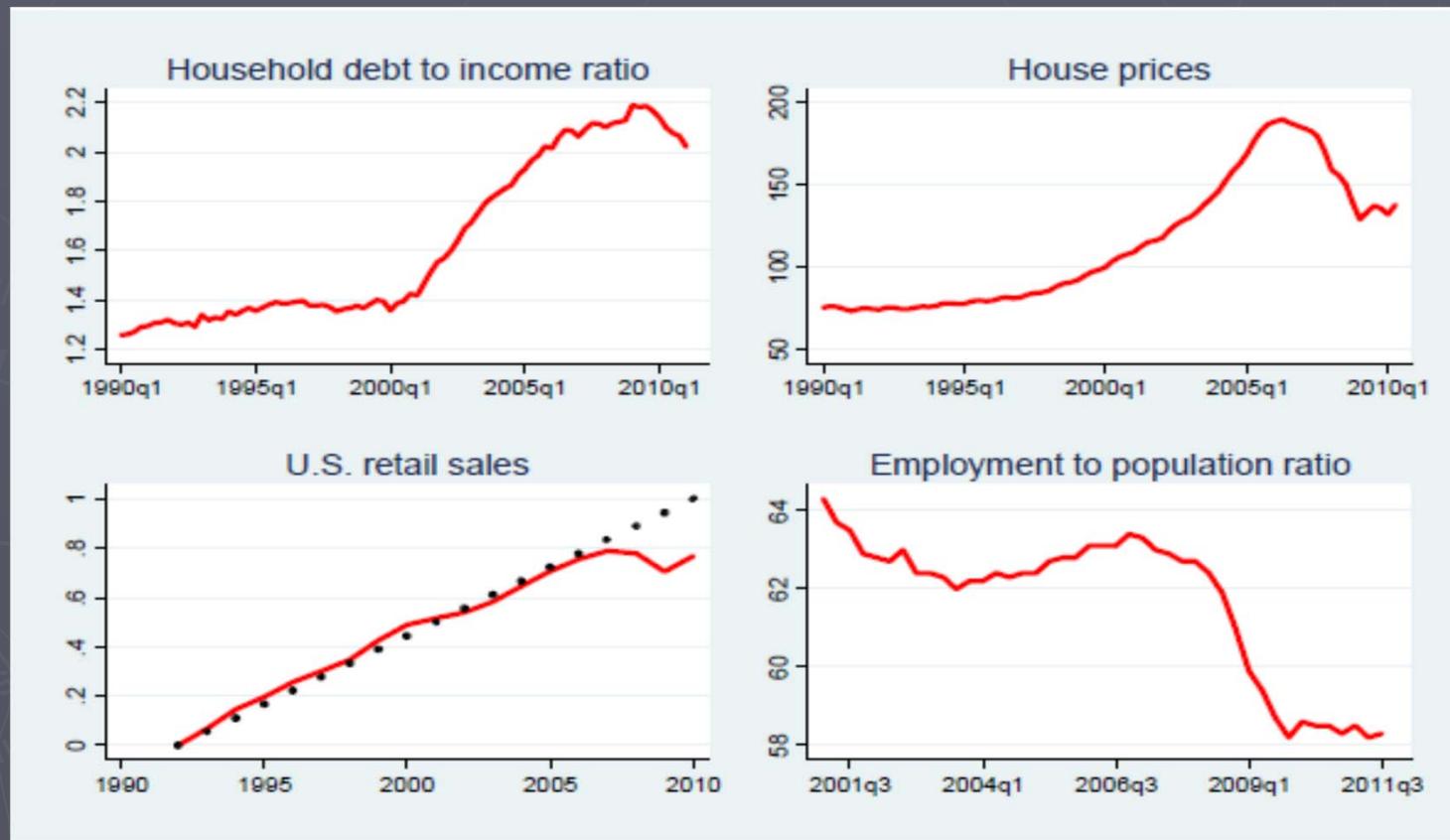
Note: Authors' calculations of expected completed duration from CPS microdata. The gray area denotes the latest recession, dashed vertical lines indicate effective dates for expansions of maximum UI duration under EUC.

# Evidence for Deficient Demand

- ▶ Households chose to reduce debt rather than buy current goods and services. They are expressing a desire to substitute future consumption for current. Although this “deleveraging process” takes a while, it will end ... upturn in auto sales.
- ▶ Employers were not investing in the factors required to satisfy that future demand. Instead, corporations accumulated 2-3 trillion dollars in idle retained earnings. There are signs of movement here too.
- ▶ These fact suggests that expectations about the future prospects were extremely depressed and will take a long time to recover.

# Amir Sufi (2011) "Household Balance Sheets and the Weak Recovery"

- ▶ Argument: Weakness in household balance sheets is the primary reason for the weak U.S. economic recovery

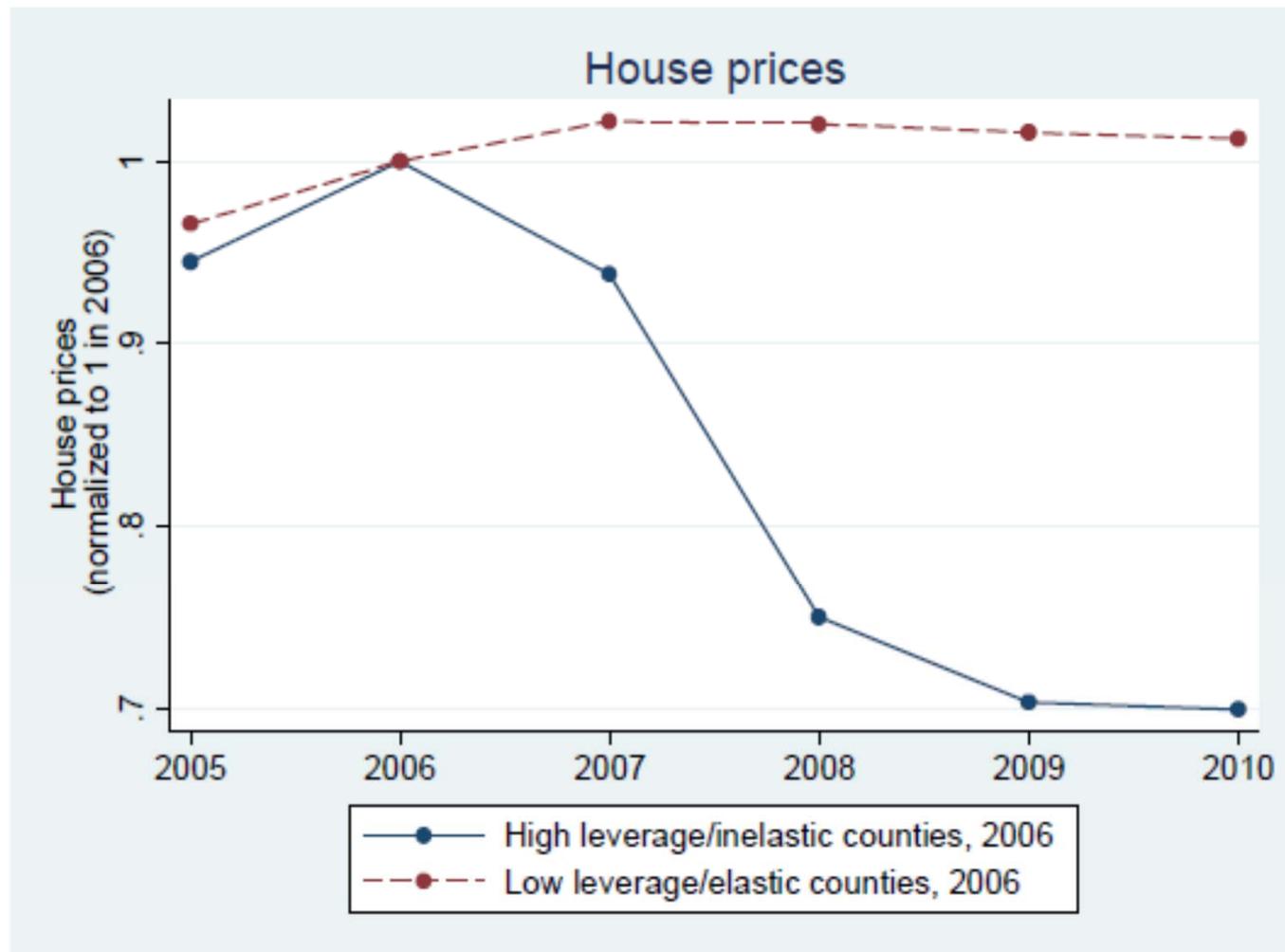


# How do weak household balance sheets lead to a prolonged downturn?

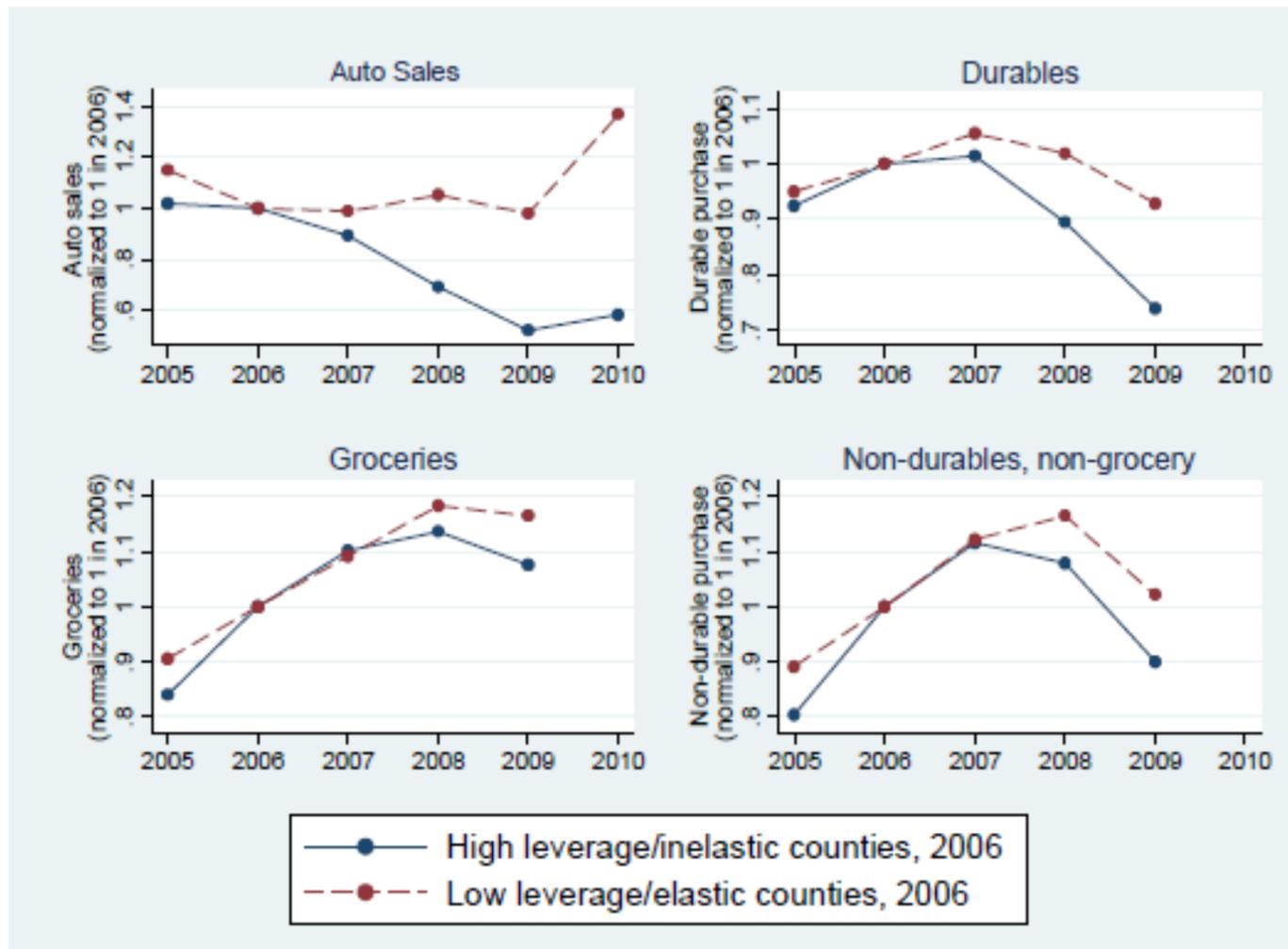
- ▶ The negative house price “shock” to household balance sheets led to a sharp drop in consumption by “levered” households.
- ▶ Frictions prevent price adjustment (interest rate and wages) required for unlevered households to take up the slack.
- ▶ Sufi et al. (2011) empirical methods take advantage of the large difference in leverage induced by differential growth in housing prices across regions.

# House Price Shock

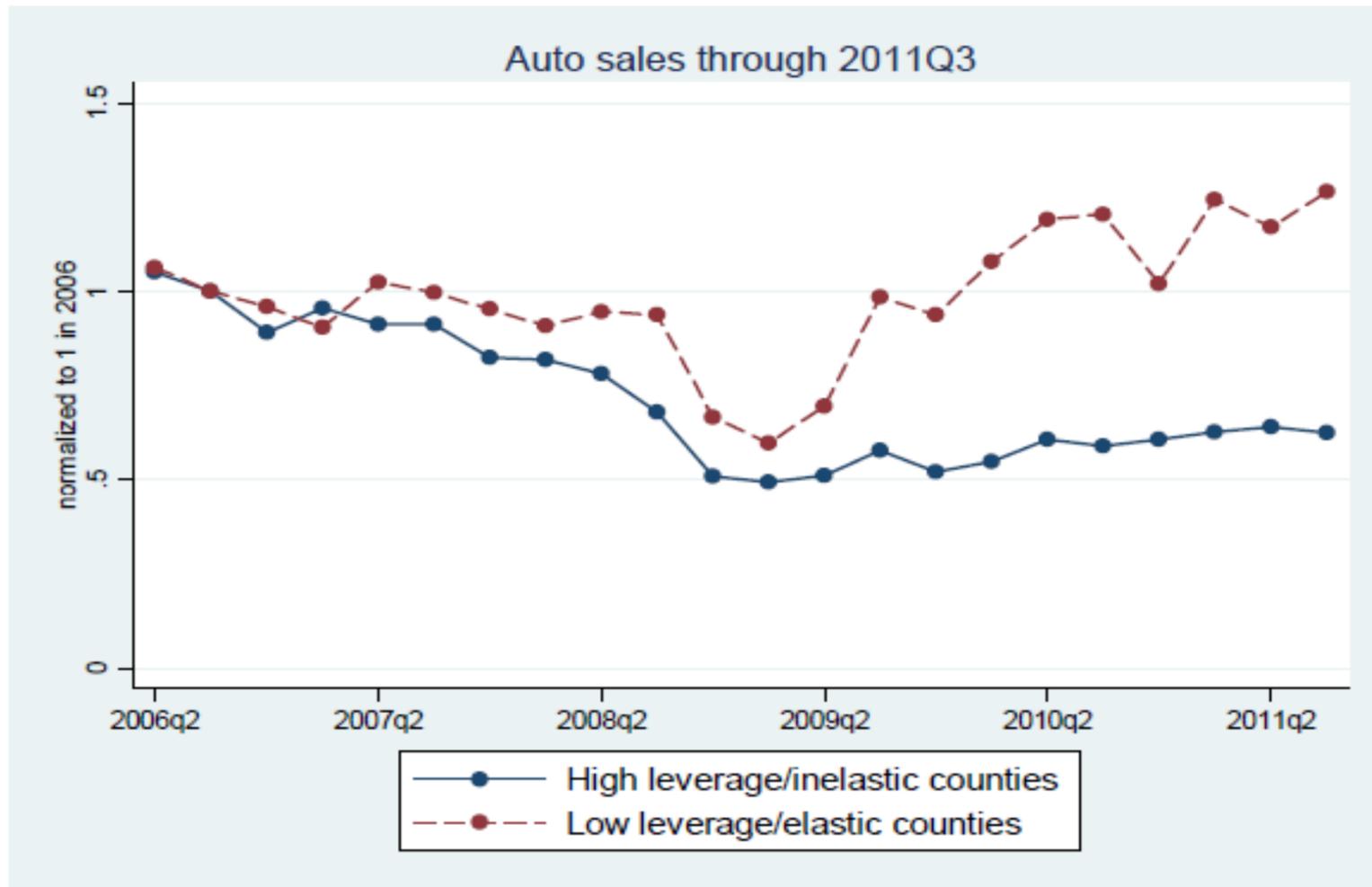
## High/Low Deciles of Household Leverage, 2006



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



# Auto Sales, through 2011Q3



# Role for Government Policy?

“Are there any policy moves available now that would speed up the slow recovery?”

- ▶ “Monetary policy has gone to its limits in pushing the interest rate down.”
- ▶ “The Government seems to lack (the will to expand government expenditures significantly and the political wind is blowing in the wrong direction to push that lever very hard.”

... Robert E. Hall, 2010 AEA Presidential Address

# Conclusions

- ▶ Some 'mismatch' seems to have developed but only explain at most 1%-1.5% points of the increase in the unemployment rate.
- ▶ The bigger problem is that consumer and private investment demand for goods and services continue to be depressed.
- ▶ Monetary policy has helped but cannot solve either problem. Additional fiscal stimulus would be more useful ... but is not politically feasible.