

# “Gross Worker Flows over the Business Cycle” by Krusell, Mukoyama, Rogerson and Sahin

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# Preview of Remarks

1. Importance of modeling the participation margin and gross worker flows – I'm sold.
2. Idiosyncratic labor demand and supply shocks
3. Model performance in recessions
4. Importance of time aggregation for cyclical fluctuations in measured  $E \rightarrow U$  flows
5. Model structure and intertemporal substitution in labor supply behavior

# Importance of Idiosyncratic Labor Supply and Demand Shocks

The model (substantially) understates average  $E \rightarrow U$  flows. It also overstates  $E \rightarrow N$  flows.

Table 3

Gross Worker Flows in the Data and the Model							
US 1968-2009				Model			
FROM	TO			FROM	TO		
	<i>E</i>	<i>U</i>	<i>N</i>		<i>E</i>	<i>U</i>	<i>N</i>
<i>E</i>	0.954	0.016	0.030	<i>E</i>	0.954	0.007	0.039
<i>U</i>	0.270	0.508	0.222	<i>U</i>	0.396	0.505	0.099
<i>N</i>	0.048	0.027	0.925	<i>N</i>	0.035	0.044	0.921

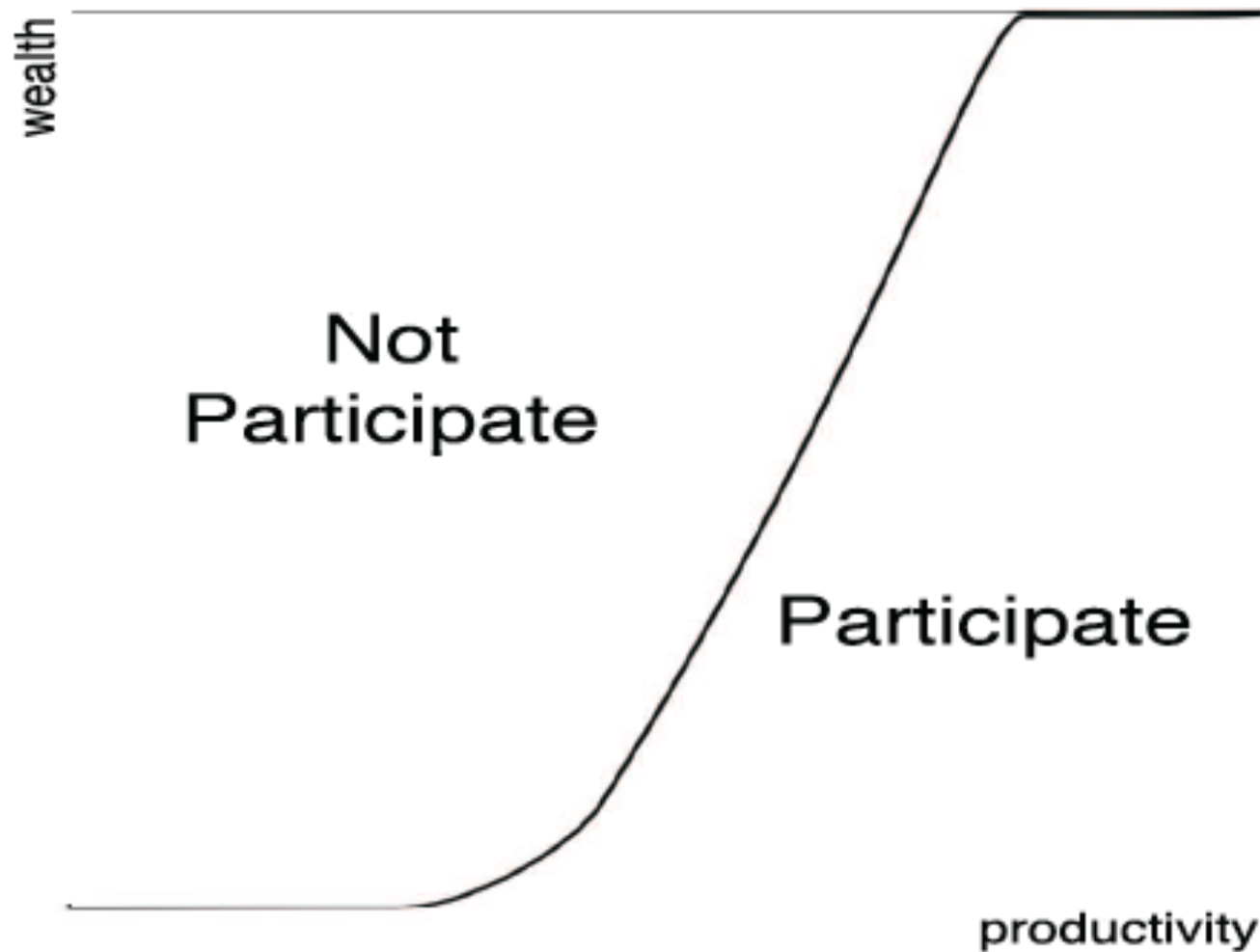
# Importance of Idiosyncratic Labor Supply and Demand Shocks

- An artifact of classification error? Perhaps. The authors address the role of classification error for  $U \rightarrow N$  flows. It would be good to do so for the  $E \rightarrow U$  flows as well.
- Taken at face value, the understatement of  $E \rightarrow U$  flows and overstatement of  $E \rightarrow N$  flows indicate that the model delivers too little job loss due to idiosyncratic labor demand shocks and too much due to idiosyncratic labor supply shocks.

# Importance of Idiosyncratic Labor Supply and Demand Shocks

- Does a misstatement of the relative importance of idiosyncratic demand and supply shocks matter (much) for the cyclical properties of the model?
- Yes, because the idiosyncratic supply shocks greatly influence the mass of individuals near the participation boundary in Figure 1. Hence, they determine the size of worker flow responses to changes in aggregate market conditions.

Figure 1: Stylized optimal decision rule for participation.

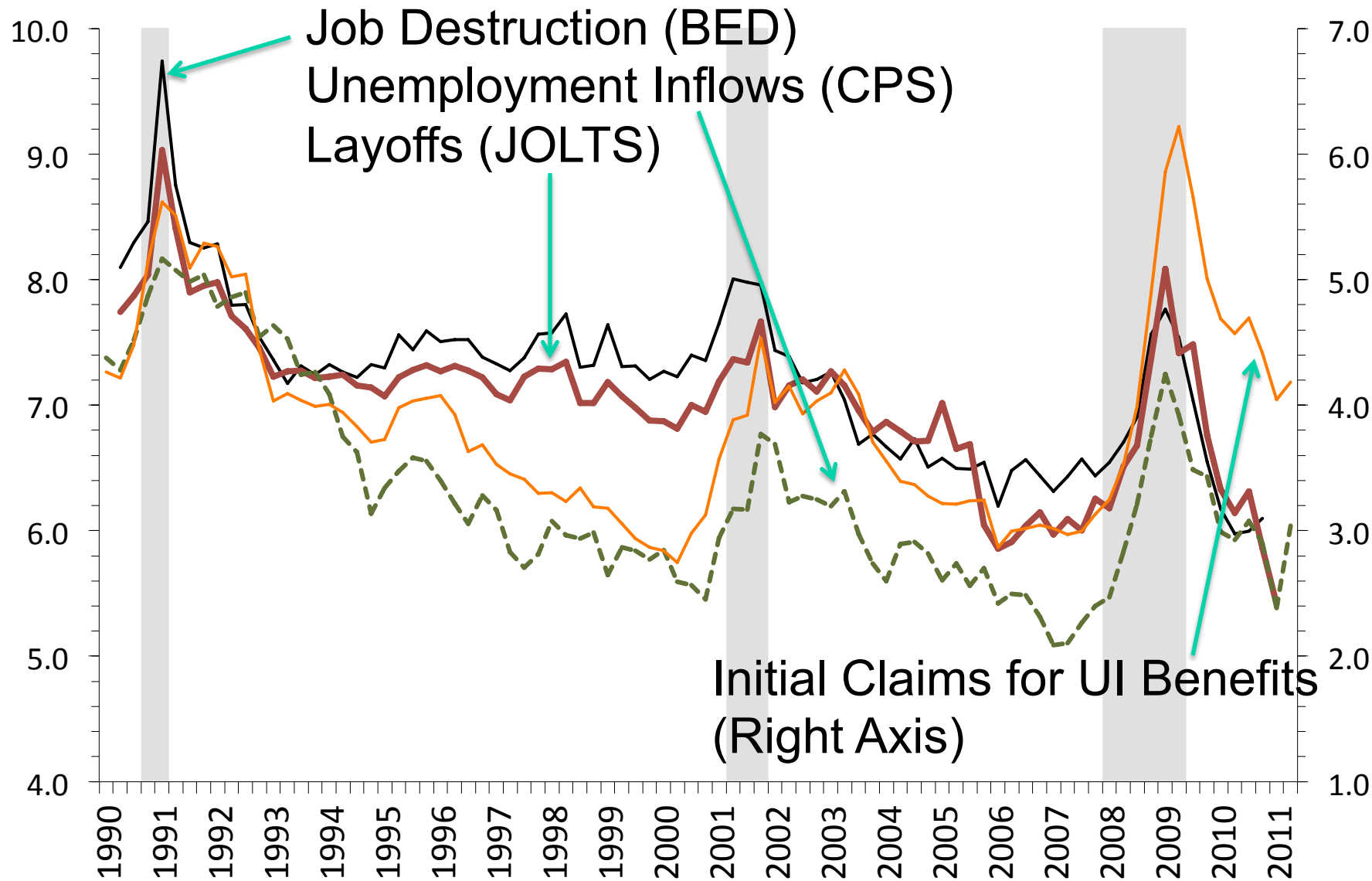


# Model Performance in Recessions

In characterizing the quantitative properties of their model, the authors postulate a symmetric, two-state Markov process that governs transitions between “Good” and “Bad” aggregate market conditions.

- Parsimonious
- Transparent
- Facilitates a straightforward calibration
- Useful for understanding mechanisms in model
- Probably not adequate to deliver a satisfactory account of worker flows during and around recessions.

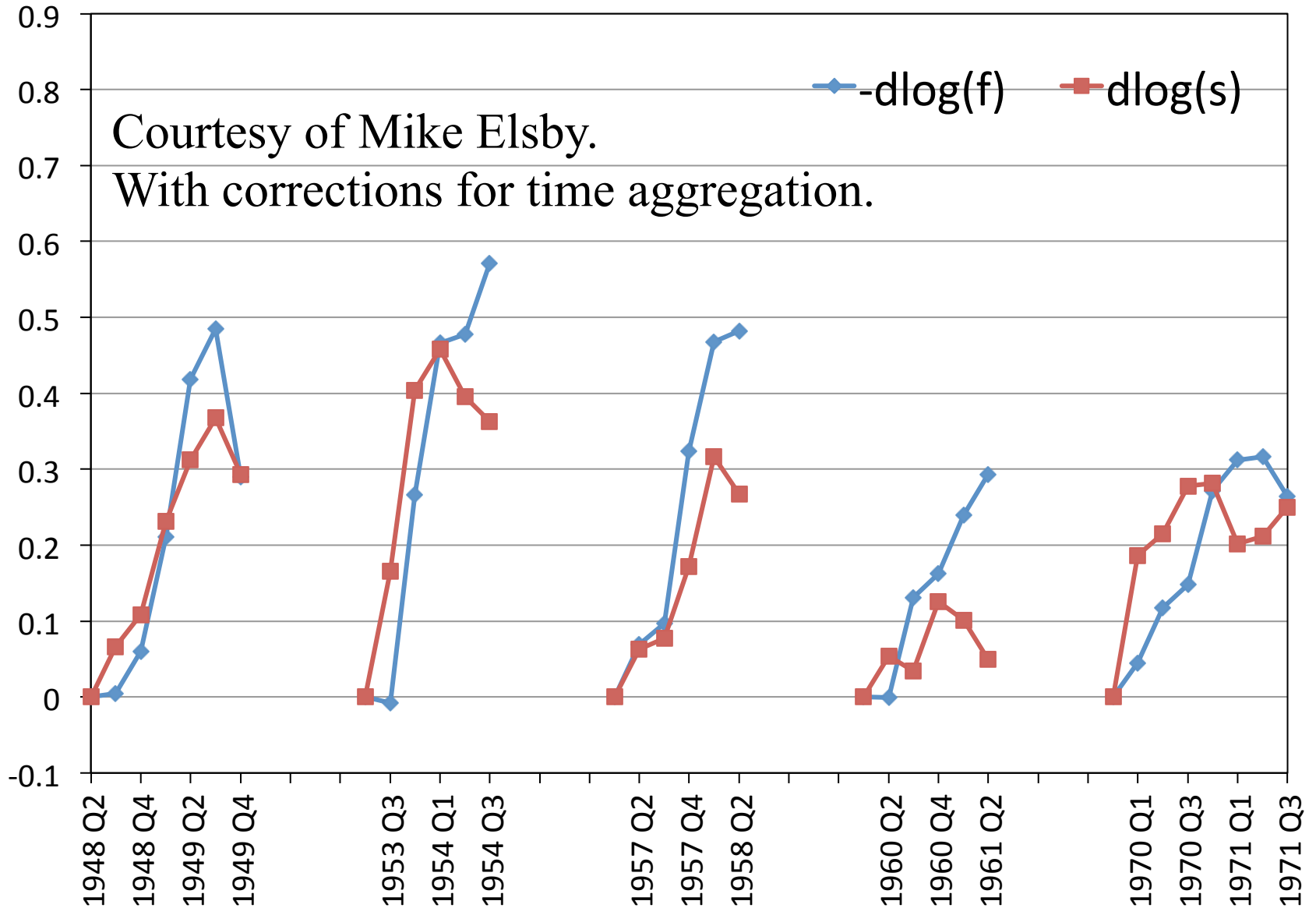
# Job Loss Indicators, Quarterly, % of Employment



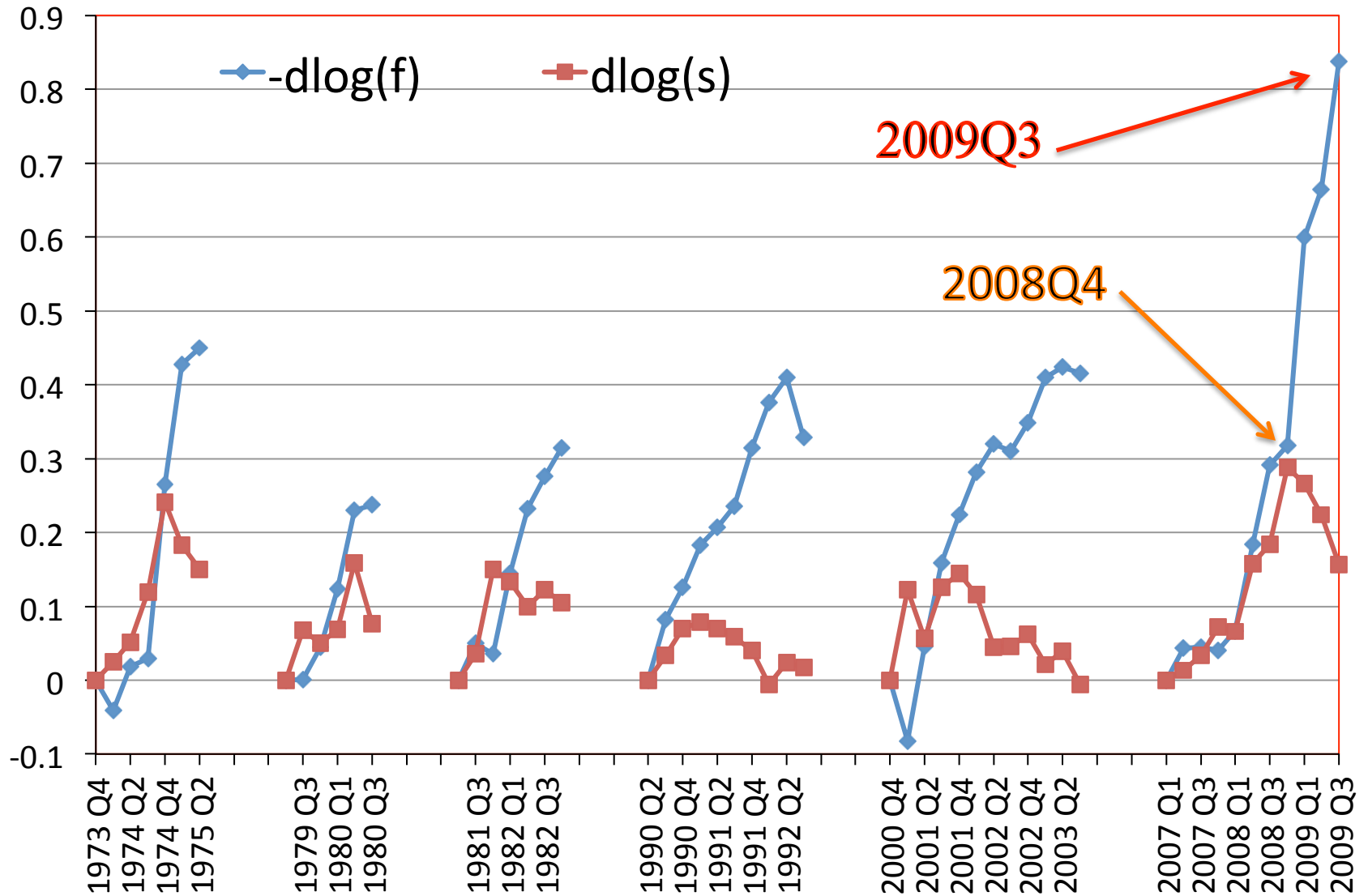
Reproduced from Davis and von Wachter (2011).



# Decomposition of log unemployment rate rises in postwar U.S. recessions



# Decomposition of log unemployment rate rises in postwar U.S. recessions



Extending results in Elsby, Michaels and Solon (2009).

# Model Performance in Recessions

- The (current version of the) model fails to reproduce the characteristic spike in  $E \rightarrow U$  flows at the onset of recessions.
- Almost by construction, the model also misses the distinct cyclical dynamics of  $E \rightarrow U$  and  $U \rightarrow E, N$  flows during recessions and their near-term aftermath.

# Model Performance in Recessions

- Adding a third aggregate state (and dropping the symmetry assumption on the transition matrix) would allow for “strong”, “recession onset” and “weak” aggregate market conditions.
  - Enriching the state space in this way may allow the model to adequately capture the recessionary dynamics in worker flows.
  - It would also mean a greater computational burden and a somewhat different approach to calibration.
  - Maybe for the next paper in the series.

# Model Performance in Recessions

- How does wage behavior differ between the “recession onset” and “weak” states in the data?
- To the best of my knowledge, previous work on wage cyclicalities has not addressed the question.
- The question is interesting, aside from the analysis in this paper, because it turns partly on whether wages display distinct relationships to job-availability and job-loss shocks.
- Should we devote extra attention to the performance of the model around recessions?

# Importance of Time Aggregation

- Table 7: “[E]ven when there are only shocks to  $\lambda$  [job availability], ... the model accounts for roughly 80% of the volatility in  $f_{EU}$ . This reflects the time aggregation that is implicit in our model...”
- But time aggregation effects are too small to account for more than a modest fraction of the typical recessionary spike in  $E \rightarrow U$  flows. See the calculations and discussion in Davis (2005).

# Intertemporal Substitution in Labor Supply Behavior

- The model overstates the scope for intertemporal substitution responses in labor supply behavior, in my view, because it assumes that all households face the market rate  $r$  at all times.
  - No role for borrowing constraints, borrowing costs that exceed  $r$ , impatient agents who mostly operate where borrowing is costly or difficult, etc.
  - A richer model with more realistic asset accumulation behavior would offer less scope for intertemporal substitution in labor supply and a larger role for near-static substitution responses.

# Intertemporal Substitution in Labor Supply Behavior

- Consider a polar alternative to the current model: individuals can neither borrow nor save.
  - Does that model perform notably better or worse than the current model?



# References

- Davis, Steven J., 2005. “Comments on ‘Job Loss, Job Finding, and Unemployment in the U.S. Economy over the Past Fifty Years’ by Robert E. Hall,” *NBER Macroeconomics Annual*.
- Davis, Steven J. and Till von Wachter, 2011. “Recessions and the Costs of Job Loss,” *Brookings Papers on Economic Activity*.
- Elsby, Michael, Ryan Michaels and Gary Solon. 2009. “The Ins and Out of Cyclical Unemployment,” *American Economic Journal: Macroeconomics*, 1(1), 84-110.