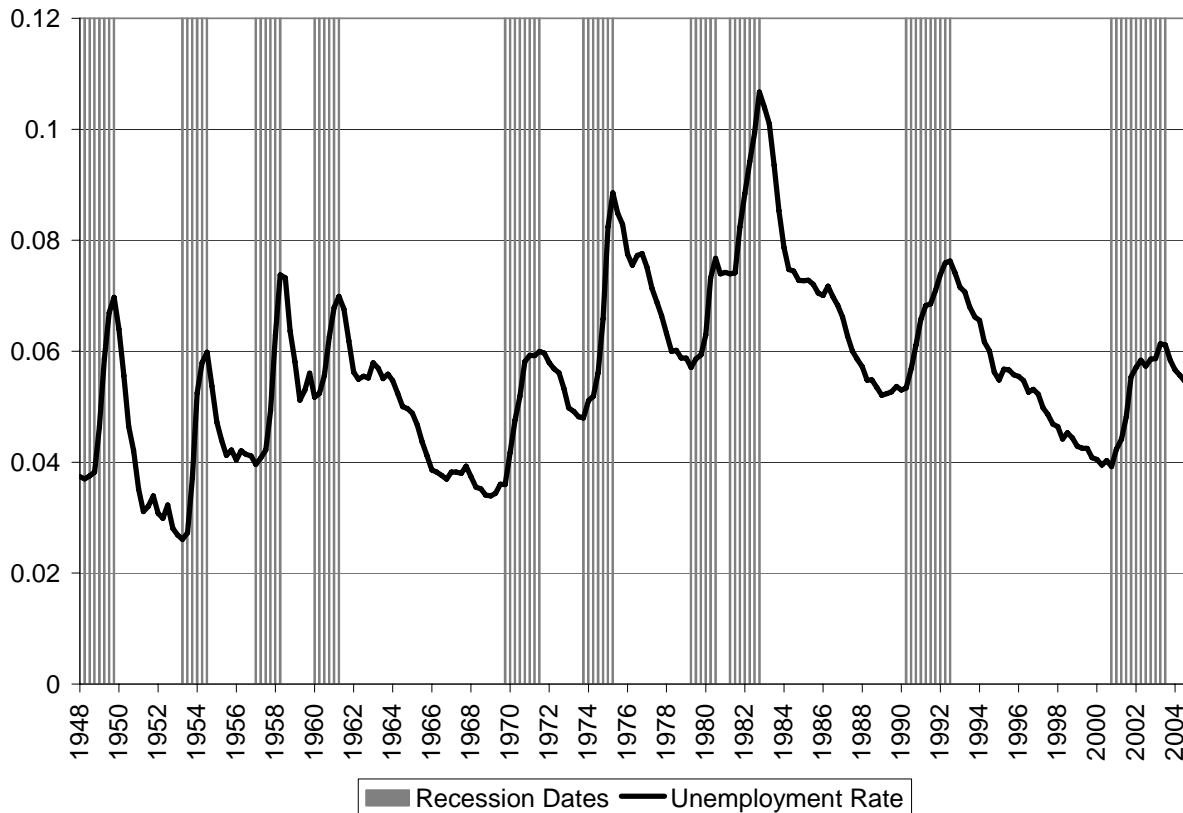Figure 0: Unemployment Rate and Recessionary Unemployment Dates Used

When the unemployment rate goes up, is it

- because there are more spells of unemployment,

- because the spells are longer,

- or both?

In other words, how much of a cyclical upswing in unemployment comes from increased inflows to unemployment vs. a decreased exit rate for outflows?

"The Ins and Outs of Cyclical Unemployment"

Michael Elsby, Ryan Michaels, and Gary Solon

Darby, Haltiwanger, and Plant (1986), "The Ins and Outs of Unemployment: The Ins Win"

Robert Shimer (2005), "Reassessing the Ins and Outs of Unemployment":
"Using United States data from 1948 to 2004, I find that there are substantial fluctuations in unemployed workers' job finding probability at business cycle frequencies, while employed workers' separation probability is comparatively acyclic."

Robert Hall's *Review of Economics and Statistics* Lecture (2005):
"In the modern U.S. economy, recessions do not begin with a burst of layoffs. Unemployment rises because jobs are hard to find, not because an unusual number of people are thrown into unemployment."

Shimer and Hall's writings had an immediate impact on macroeconomic theorists' modeling of the labor market. A couple of examples from NBER working papers:

Mark Gertler and Antonella Trigari (2006):
"… within our framework unemployment will be due to cyclical variation in hiring as opposed to separations. Both Hall (2005b, c) and Shimer (2005a, b) argue that this characterization is consistent with recent U.S. evidence."

Julio Rotemberg (2006):
"… those who have a job at t have a probability s of being unemployed at $t+1$, where this separation probability is kept constant on the grounds that Shimer (2005b) and Hall (2005b) have argued that this is a good approximation to employment dynamics."

Using the same published Current Population Survey time series used by Shimer, we reexamine the ins and outs of cyclical unemployment. Our main findings:

1. We reconfirm the finding by Shimer, Hall, and many others of important cyclicality in unemployment duration ("the outs").

2. We find cyclicality in inflows also is important in most recessions.

3. We uncover strong regularities in the timing of inflow and outflow effects. High inflows are relatively important early in a recession; low outflow hazard rates are increasingly important later on.

4. Our disaggregation by "reason for unemployment" reveals a particularly important role for the <u>job-loser</u> inflow to unemployment (as distinct from job leavers and entrants to the labor force).

Shimer's Analytic Framework

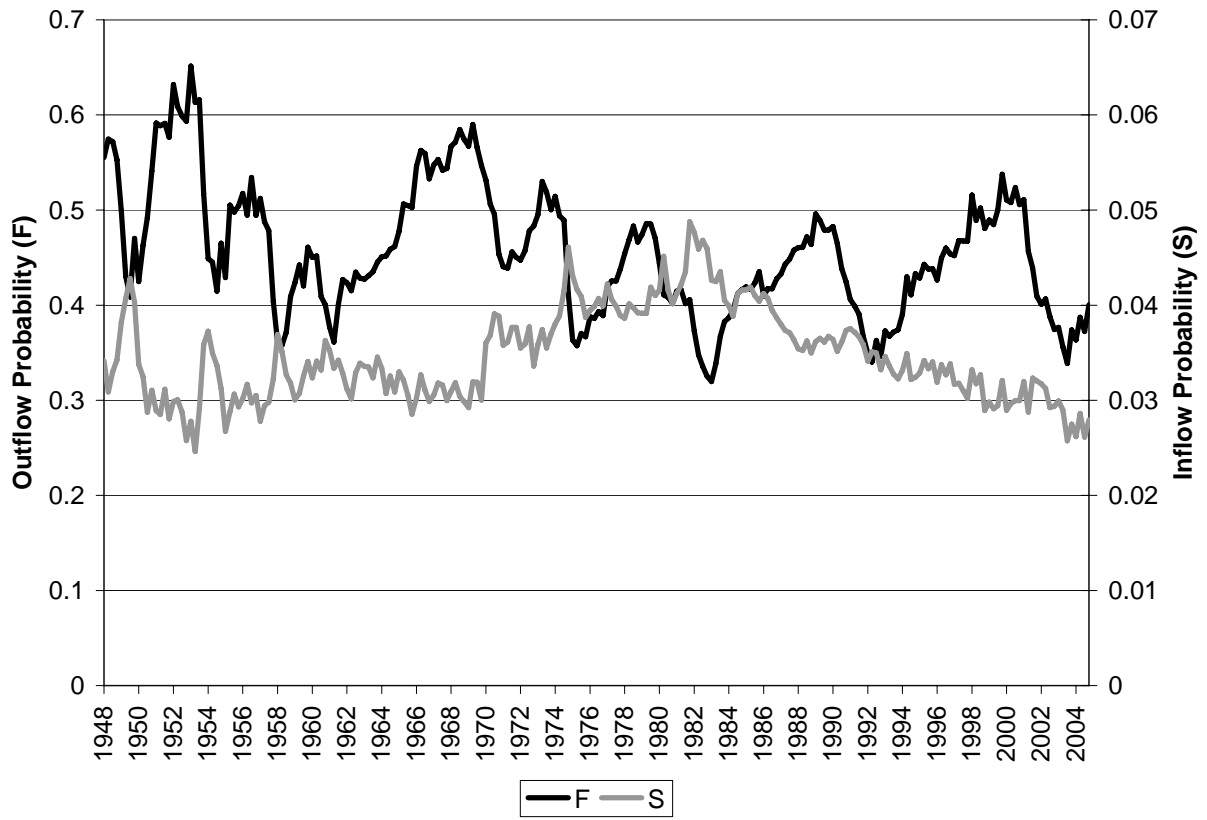u(t) = unemployment rate

s(t) = hazard rate for entering unemployment

f(t) = hazard rate for exiting unemployment

(2) $u(t) \approx s(t)/[s(t) + f(t)]$

Shimer shows how to estimate both s(t) and f(t) on the basis of three monthly time series from the CPS:

- the number employed
- the number unemployed
- the number unemployed less than 5 weeks

Figure 1: Replication of Shimer's Figure 1

Our Decomposition Framework

(2) $u(t) \approx s(t)/[s(t) + f(t)]$

(3) $d \log u \approx (1 - u) [d \log s - d \log f]$

Equivalently, multiplying (3) through by u,

(4) $du \approx u (1 - u) [d \log s - d \log f]$

Either way, it is the <u>log</u> change in the flow rates s and f that puts them on the same footing with respect to impacts on unemployment.

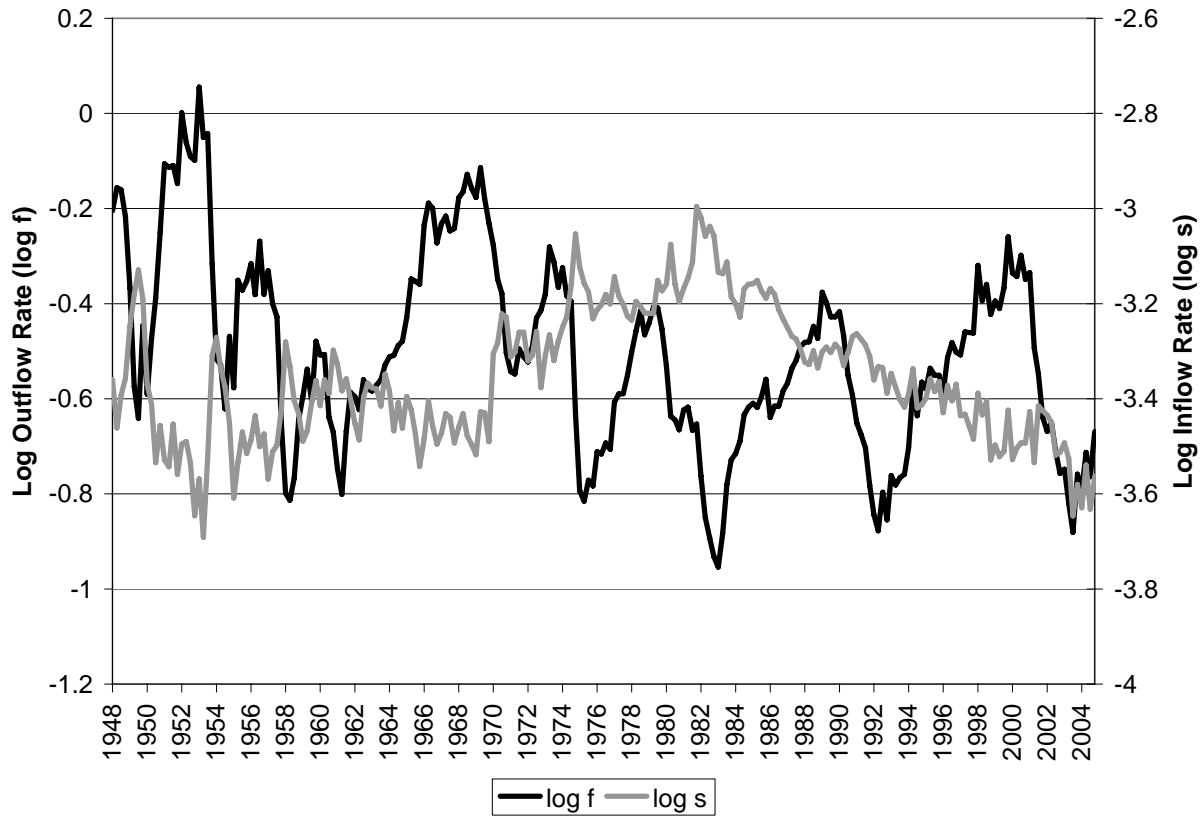Figure 2: Log Inflow and Outflow Hazard Rates Using Replication of Shimer's Data

Figure 3: Changes in Log Inflow and Outflow Rates by Recession, 1948–2004
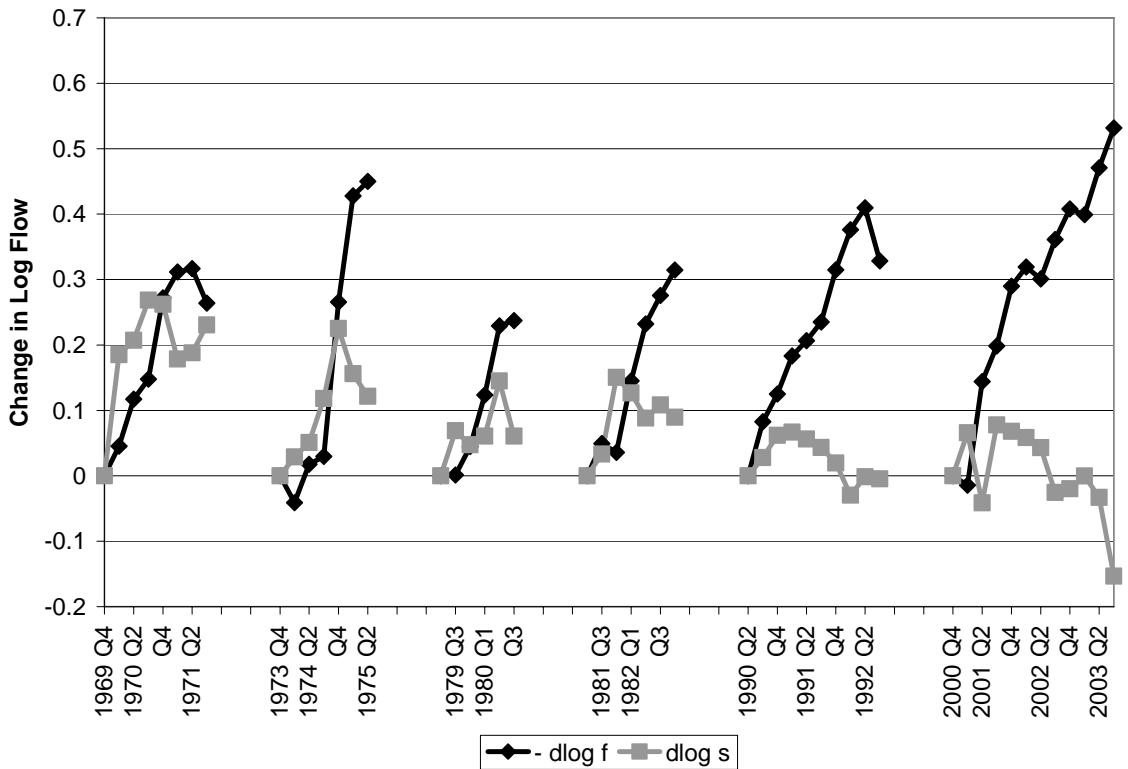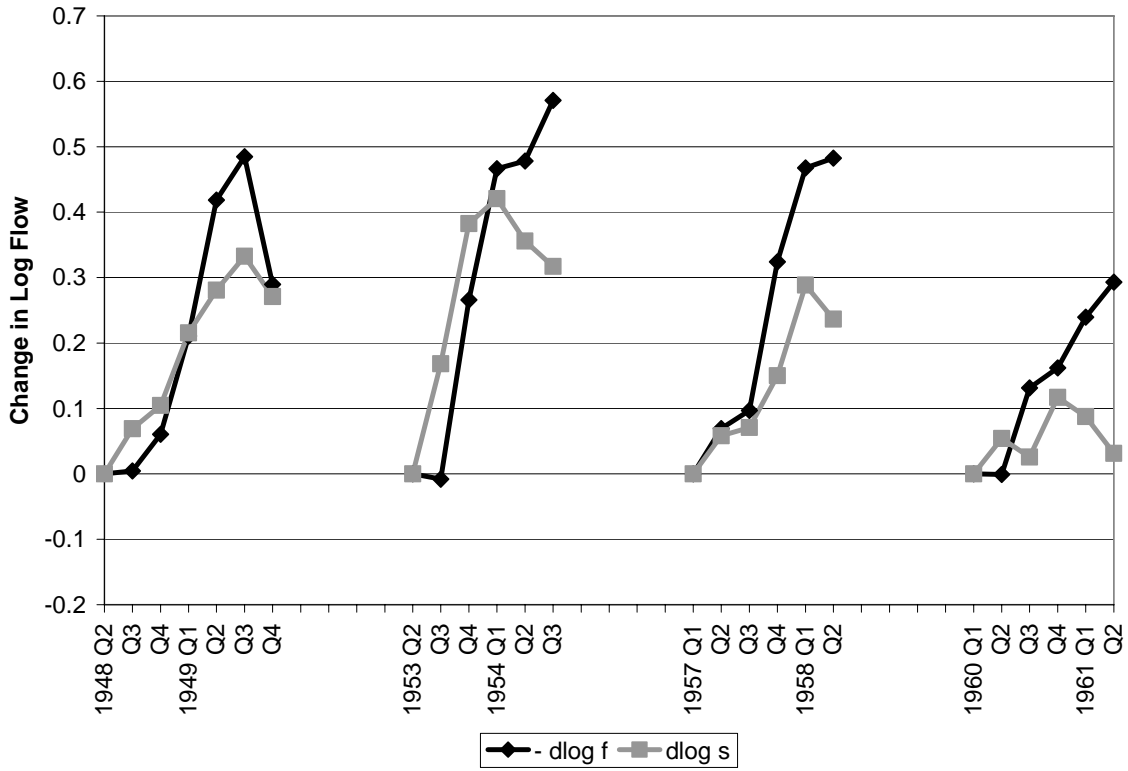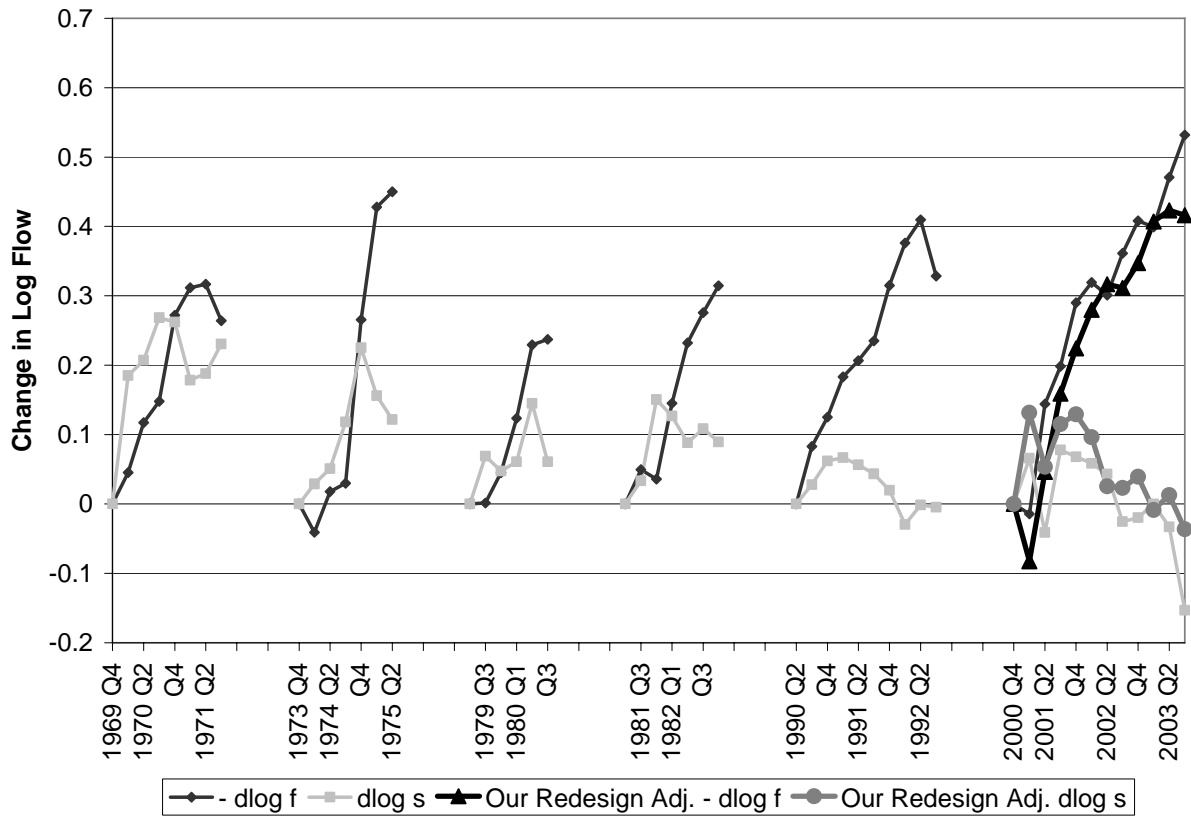
Figure 5: Effect of Our Alternative Redesign Correction on the 2000-2001 Recession
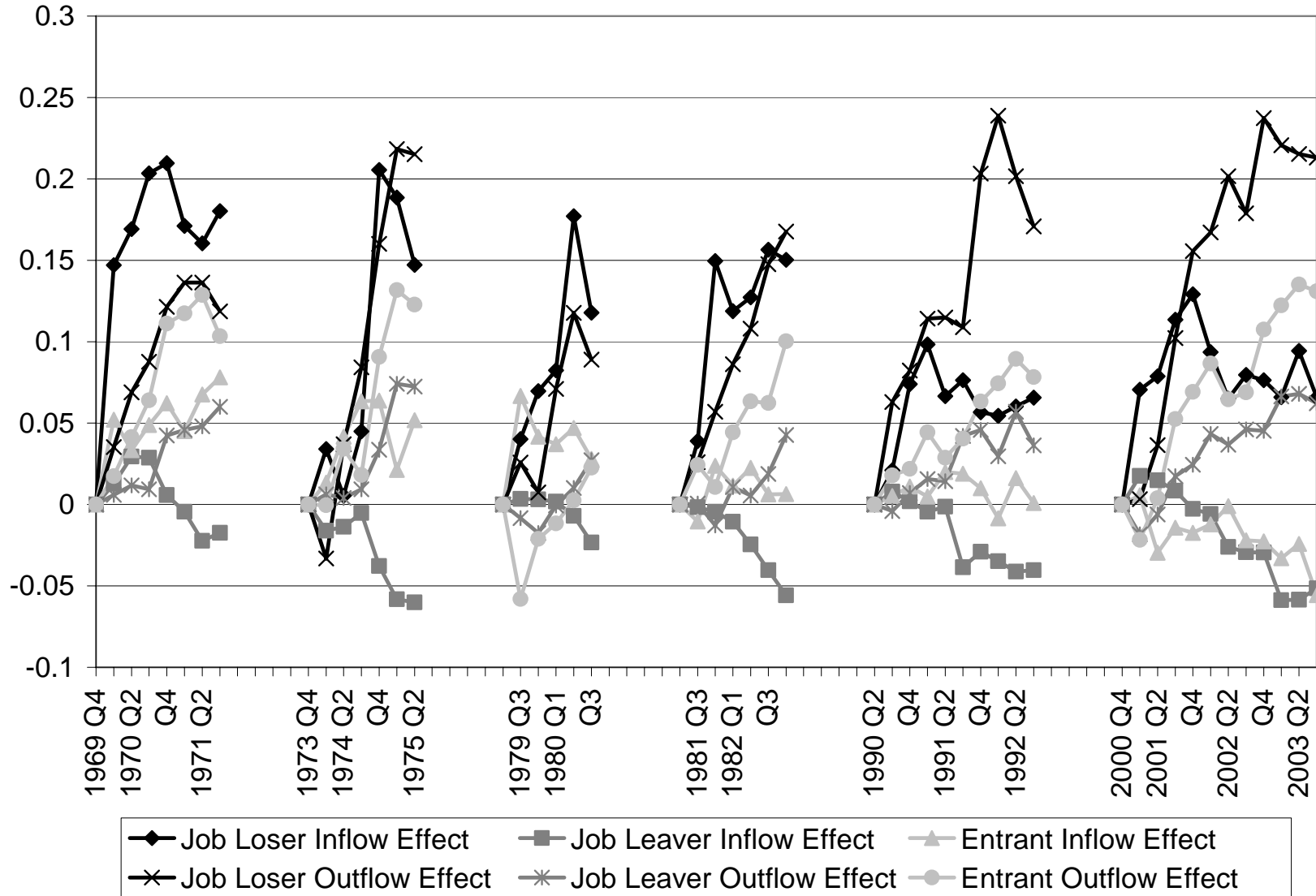
Our Disaggregated Analysis

Shimer's main analysis assumes that inflows to unemployment come entirely out of employment. Actually, many come from entry into the labor force.

One of our main contributions is to extend the methodology so we can disaggregate the inflows to unemployment into those coming from labor force entry, job losing, and job leaving (published by BLS as "reasons for unemployment").

Figure 11: Decomposition of Increase in Unemployment into Effects of Flows by Reason for Unemployment

Using the same published Current Population Survey time series used by Shimer, we reexamine the ins and outs of cyclical unemployment. Our main findings:

1. We reconfirm the finding by Shimer, Hall, and many others of important cyclicality in unemployment duration ("the outs").

2. We find cyclicality in inflows also is important in most recessions.

3. We uncover strong regularities in the timing of inflow and outflow effects. High inflows are relatively important early in a recession; low outflow hazard rates are increasingly important later on.

4. Our disaggregation by "reason for unemployment" reveals a particularly important role for the job-loser inflow to unemployment (as distinct from job leavers and entrants to the labor force).

Accordingly, macroeconomic theorizing about the labor market should attend to both:

- why job-loser inflows to unemployment increase at the outset of recessions, and

- why the number flowing out of unemployment does not increase enough to prevent an increase in unemployment duration.