Job-to-Job Flows in the Great Recession*

Henry Hyatt
Center for Economic Studies, U.S. Census Bureau

Erika McEntarfer
Center for Economic Studies, U.S. Census Bureau

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Introduction

Labor market conditions have devolved rapidly since December 2007. More than two years following the official end of the recession in June 2009, unemployment remains persistently high and the duration of unemployment historically long. Underlying this surge in joblessness is a rich degree of heterogeneity in labor market outcomes as workers and firms adjust to the crisis, which existing public use statistical datasets only partially address. In this paper, we construct and examine new measures of labor market adjustment, the flows of workers between jobs, including both direct employer-to-employer flows and employer-to-nonemployment-to-employer changes, to generate a fuller portrait of labor market adjustment during the Great Recession.

Numerous studies, including Jacobson, Lalonde and Sullivan (1993), have documented persistent wage declines following job separations, while a separate literature that includes Topel and Ward (1992) has documented that job change, especially for young workers, is one of the main avenues for wage growth. An emerging literature on job-to-job flows, for example, Fallick and Fleishman (2004), Golan et al. (2007) and Bjelland et al. (2011), ties these literatures together. As job flows and wage changes are rooted in the same process, an understanding of job-to-job flows is key for understanding employment and earnings dynamics, as well as the winners and losers from the expansion and contraction of different industries.

Using our multi-state pilot measures of job-to-job and job-to-nonemployment-to-job flows, we find a sharp fall in direct job-to-job flows in the Great Recession. We find that earnings changes associated with job change are procyclical, with marked penalties for nonemployment. Earnings changes for all types of job change are at a series low in the Great Recession, with both greater shares of workers separating to long nonemployment spells and greater penalties associated with nonemployment in this period. We also take a closer look at labor market

adjustment in one of the principal industries affected by the housing bust, residential building construction. We find a drop in flows across employers and an increase in the frequency with which these flows are associated with industry change and earnings declines.

The Creation of National Job-to-Job Flow Statistics

The Census Bureau plans to develop a new set of national job-to-job flow statistics derived from the Longitudinal Employer-Household Dynamics (LEHD) infrastructure files, which are described in detail in Abowd et. al (2006). Measures of transitions across jobs and industries represent one of the major opportunities for development of new employment statistics. The LEHD data, a linked employer-employee dataset, provide a unique opportunity to trace the flows of workers across employers, industries, and geographies. The results described here are generated from a multi-state pilot database of job-to-job and job-to-nonemployment-to-job flow statistics. [1]

The previous literature on job-to-job flows has informed the construction of our series in several important ways. Fallick and Fleischman (2004) and Bjelland et al. (2011) have demonstrated that direct job-to-job flows are a large and important component of worker flows. In particular, Bjelland et al. (2011) found that most direct job-to-job flows are between primary jobs, thus we restrict our analysis here to flows between primary jobs. Examining flows to nonemployment and back to employment again, Fallick, Haltiwanger and McEntarfer (2011) find that presence of nonemployment between job spells is associated with weaker earnings gains from job change, compared to direct job-to-job flows. The importance of nonemployment in earnings outcomes influenced our inclusion of job-to-nonemployment-to-job flows in addition

[1] In Hyatt and McEntarfer (2011) we provide precise definitions for our job-to-job and job-to-nonemployment-to-job measures. We differ from Bjelland, et al. primarily in that we construct flows between primary jobs, and we include flows to jobs that include a nonemployment spell.

to direct job-to-job flows in our pilot project.

We use LEHD data from 1998-2010 to generate job-to-job and job-to-nonemployment-to-job transitions between primary jobs. We use nine states as the frame for our analysis: California, Florida, Georgia, Illinois, Kansas, Michigan, Nevada, North Carolina, and North Dakota.[2] Our job-to-job flow measures offer rich detail in the flows of workers across employers and industries, as well as in and out of nonemployment. Note that it is impossible to directly observe unemployment, so we do not distinguish between those who are unemployed and those not in the labor force. Furthermore, nonemployment durations are only approximately observed in of the quarterly administrative data. For example, a job-to-nonemployment-to-job transition with one full-quarter of nonemployment between jobs has a minimum nonemployment spell of three months and a maximum of eight months.

Job-to-Job Flows and the Business Cycle

Business cycle changes in labor turnover are important because declines in the rate in which workers are reallocated across jobs impacts the efficiency of the labor market. As job change is an important component of earnings growth over worker careers, declines in labor turnover also have implications for life-time earnings. Young workers entering labor markets in recessions might experience lower wage growth in part because of lower gains from job change. Figure 1 shows seasonally adjusted primary job separations along with job-to-job and job-to-nonemployment-to-job flows for our LEHD sample from 1998-2010. Our dominant jobs separations are modestly procyclical, with a much sharper decline in the Great Recession compared to the 2001 recession. Job-to-job flows occurring within the same quarter and those

[2] Specifically, the frame for our analysis is all workers who held at least one job in these nine states during this time period. We then construct national job histories for these workers so that flows across states are included (jobs from over 40 states are thus represented in our sample).

where the new job began in the subsequent quarter demonstrate very similar cyclical patterns, and so are combined in Figure 1.

Figure 1 demonstrates several interesting facts about job-to-job flows and their relation to worker flows generally. First, both job-to-job flows involving little or no nonemployment are procyclical, while job-to-nonemployment-to-job spells that involve at least one full quarter of nonemployment demonstrate either no cyclical pattern or in the case of those involving longer nonemployment spells, a slight countercyclical pattern. Thus the procyclicality of dominant job separations appears to be driven entirely by those first two types of job flows. These two types of flows begin to fall in early 2007, preceding the official start of the Great Recession by a quarter or two and drop to a series (at least 12-year) low by early 2009. The spike in separations to longer nonemployment spells in late 2008 is driven almost entirely by a spike in separations to nonemployment spells lasting one year or more, consistent with the persistently high unemployment rate and long unemployment durations during this recession. Interestingly, this series declines to a new low by 2010, but whether that is driven by a drop in exits (deferred retirements, for instance) or a drop in separations to nonemployment generally, we cannot tell.

Figure 2 shows seasonally adjusted median earnings changes from job change for the time period. Because we can compare quarterly wages only for jobs where we observe wages for a full quarter, we restrict the analysis here to job changes where we observe a full-quarter of wages prior to the job separation and also on the new job, excluding dominant job transitions that involve very short jobs. Similar to Fallick, Haltiwanger, and McEntarfer (2011), we find that earnings changes associated with job change decrease with both the presence and duration of a nonemployment spell between jobs. For example, in the second quarter of 2006, workers with direct job-to-job flows experienced a 9% earnings gain, those with flows to a new job starting in

the following quarter experience a 3.8% earnings gain, while those with one or two-three quarters nonemployment experience a 0% and -1.2% earnings change, respectively. Here we also find procycliality in earnings changes associated job flows that include a nonemployment spell. What is perhaps most interesting about Figure 2 is the procyclical co-movement of earnings changes associated with most types of job flows. There is also some evidence here of an increased 'penalty' for nonemployment in the Great Recession, while earnings gains for direct job-to-job flows are similar to the last recession (6% compared a low of 6.5% in the last recession), earnings losses are greater (-6.4% compared to a low of -4.0% in the previous recession for those with 2-3 quarters nonemployment).

Labor Market Adjustment and the Housing Bust

One of the most interesting applications of a job-to-job flows series is the ability to examine how labor associated with a particular industry adjusts to a demand shock. In this section we provide one example of this type of analysis, examining the recent downsizing of the residential building construction industry (NAICS 2361). The decade-long boom in housing generated enormous demand for labor in construction. With the collapse of the housing market beginning in 2006, the residential construction industry exhibited a steep decline in employment. As demand fell in residential construction before the start of the recession, this market has a somewhat longer window of adjustment relative to other sectors impacted by the recession.

Table 1 shows employment and earnings outcomes for residential construction separators who experienced less than a full quarter of nonemployment, and whose new jobs survive the quarter. The third column of Table 1 shows a sharp decline in both job-to-job flows that originate from residential construction and the share of those flows that are to another employer

in the construction sector in the Great Recession. Relative to the 2004-2006 period, in 2007-2010, job-to-job flows decline to about 70% of their previous level, and conditional on taking place, nearly two-thirds of flows are to destinations outside construction. Given the cyclicality in wage gains shown in Figure 2, it is not surprising that earnings gains associated with job change also decline markedly in the Great Recession. Movements within the residential construction industry are associated with wage gains in the 2001-2006 period, but the median earnings change in the most recent recession is -0.6%. Median earnings change associated with movement to another industry is also lower. In 2007-2010, the median earnings change is -3.4%, but the two prior periods have small positive earnings changes. This mostly reflects both a decline in median earnings across sectors, but it is also the result of movement toward sectors that tend to be associated with earnings declines: among all NAICS sectors, the largest increase between 2004-2006 and 2007-2009 is a more than two percentage point increase in the share of flows into the Accommodation & Food Services sector, which are associated with large (13%-21%) downward movements in earnings.

Conclusion

This paper serves two purposes. First, it demonstrates how linked employer-employee data can be used to construct a series of flows across jobs that can shed light on employment and wage dynamics and provide new information about the economy. Second, it provides some new evidence on labor turnover and earnings dynamics in the Great Recession.

Decomposing job separations by flows directly into new jobs vs. flows involving a nonemployment spell, we find evidence that the fall in dominant job separations is driven primarily by a fall in direct job-to-job flows and those with very short intervening spells of

nonemployment. We find pro-cyclicality in earnings changes associated with job change, with a earnings penalty for job change including a nonemployment spell that increases in recessions. Together these indicate that both job mobility and earnings gains associated with job mobility are on a marked decline in this recession. Taking a close look at one particular industry, residential construction, we find evidence that even separators who did not experience nonemployment have experienced earnings losses, due in part to much higher rates of industry change in this recession.

REFERENCES

Abowd, John, Bryce Stephens, Lars Vilhuber, Fredrik Andersson, Kevin L. McKinney, Marc Roemer, and Simon Woodcock. 2009. "The LEHD Infrastructure Files and the Creation of the Quarterly Workforce Indicators" in T. Dunne, J.B. Jensen and M.J. Roberts, eds., *Producer Dynamics: New Evidence from Micro Data* (Chicago: University of Chicago Press for the National Bureau of Economic Research), pp. 149-230.

Bjelland, Melissa, Bruce Fallick, John Haltiwanger and Erika McEntarfer. 2011. "Employer-to-Employer Flows in the United States: Estimates Using Linked Employer-Employee Data", *Journal of Business and Economic Statistics*, 29(4): 493-505.

Fallick, Bruce and Charles A. Fleischman, 2004, "Employer-to-Employer Flows in the U.S. Labor Market: The Complete Picture of Gross Worker Flows," Finance and Economics Discussion Series #2004-34, Federal Reserve Board, Washington, DC.

Fallick, Bruce, John Haltiwanger, and Erika McEntarfer "Nonemployment Duration and the Consequences of Job Separations," unpublished working paper 2011 (available at: http://www.sole-jole.org/11156.pdf)

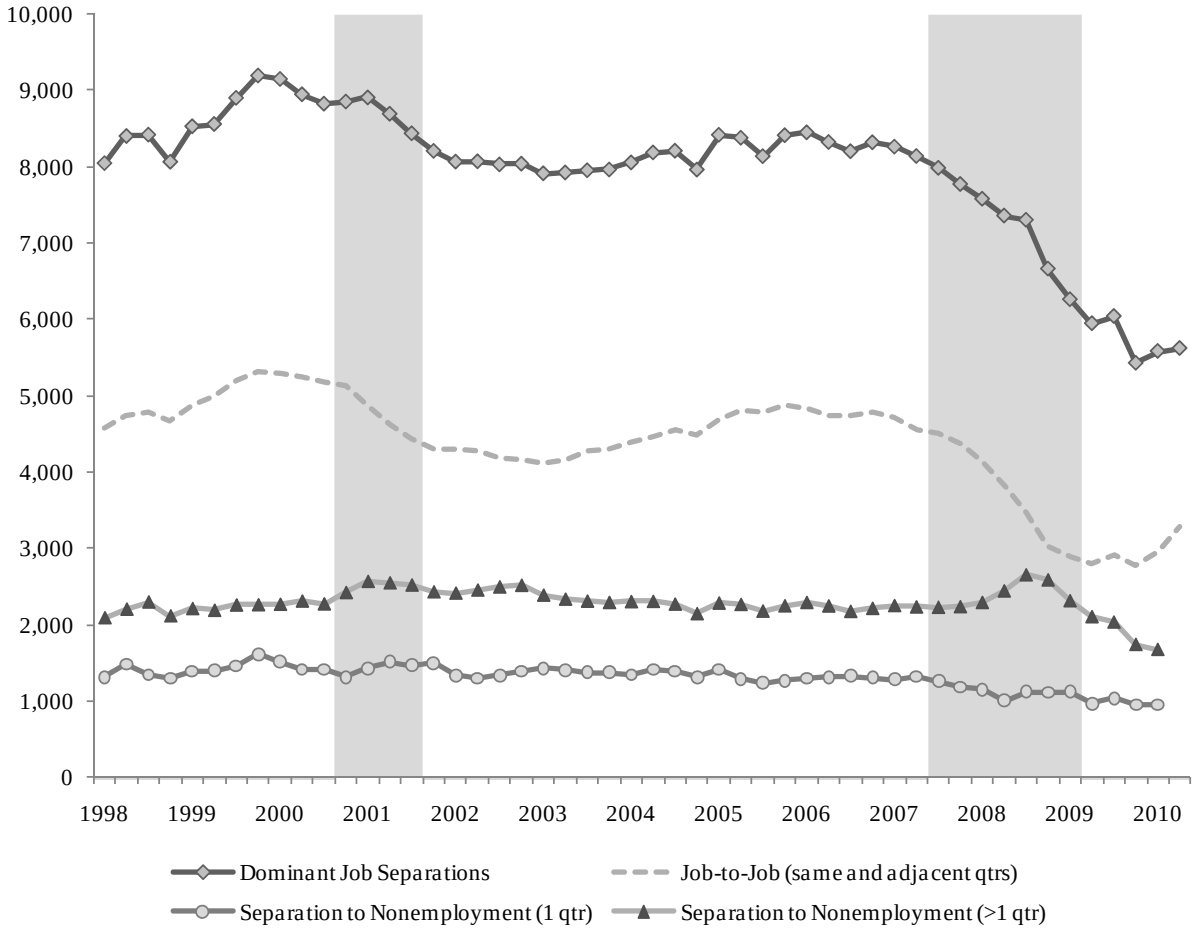
Golan, Amos, Lane, Julia I. and McEntarfer, Erika, 2007. "The Dynamics of Worker Reallocation Within and Across Industries", *Economica*, 74(1): 1-20.

Henry Hyatt and McEntarfer, Erika "Job-to-Job Flows, Job-to-Nonemployment-to-Job Flows, and the Business Cycle," unpublished working paper 2011.

Jacobson, Louis, Robert LaLonde and Daniel Sullivan. 1993. "Earnings Losses of Displaced Workers", *The American Economic Review*, 83(4): 685-709.

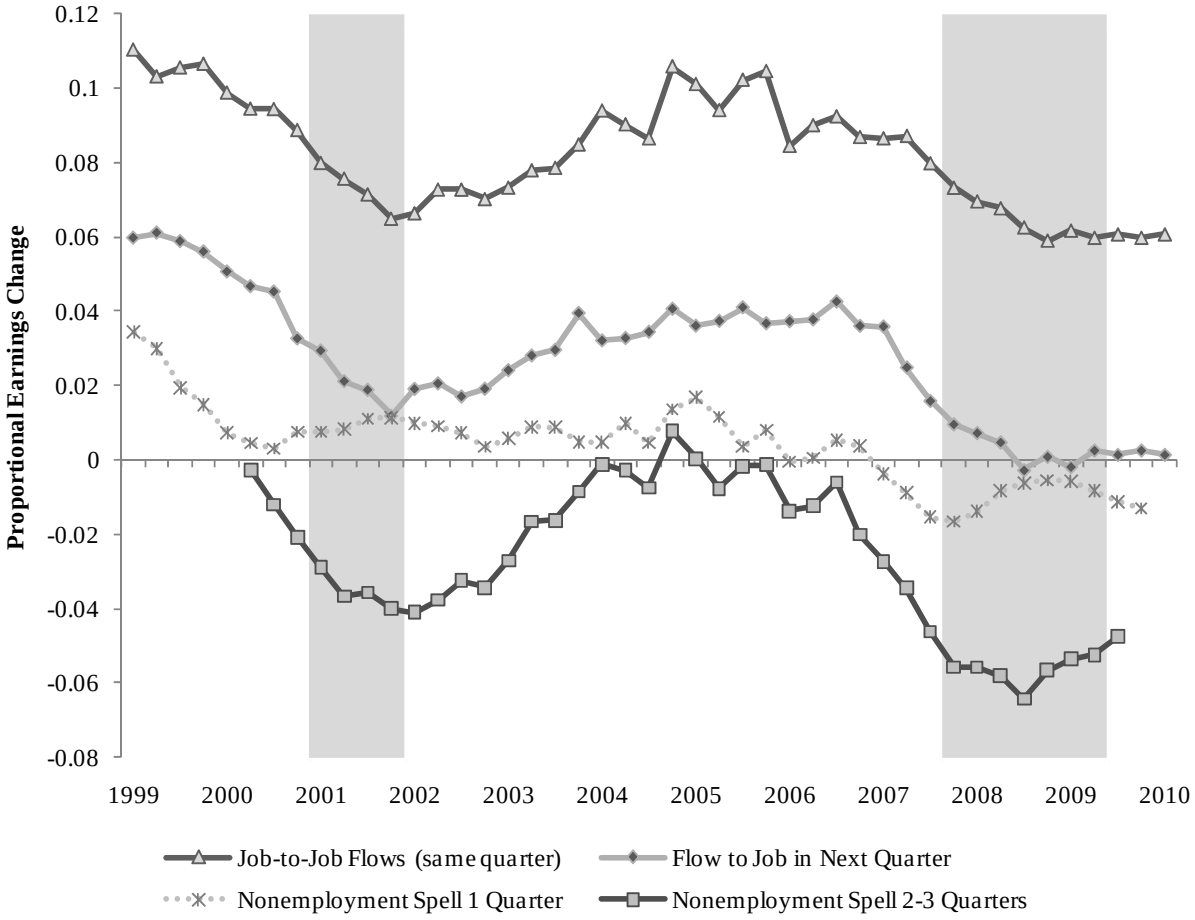
Topel, Robert and Michael Ward. 1992. "Job Mobility and the Careers of Young Men", *Quarterly Journal of Economics* 107(2): 439-479.

Figure 1: Quarterly Dominant Job Separations, Job-to-Job, and Job-to-Nonemployment Flows: 1998:2-2010:3, Calculated from LEHD Data, In Thousands



Notes: Shaded areas indicate quarters of NBER recessions. Data are seasonally adjusted.

Figure 2: Proportional Change in Real Quarterly Earnings from Job Change, New Jobs that Survive the Quarter, Relative to Last Full-Quarter of Earnings Before Separation



Notes: Shaded areas indicate quarters of NBER recessions. Data are seasonally adjusted.

Table 1: Destinations & Wage Changes for Job-to-Job Flows Originating in Residential Construction

	Frequency of Destinations			Wage Change (Median)		
	2001-03	2004-06	2007-09	2001-03	2004-06	2007-09
Construction	43.2	41.4	36.5	5.1	6.9	1.1
Residential Building Construction	15.6	14.9	11.0	3.9	5.2	-0.6
Other Construction Industy Groups	27.6	26.6	25.4	6.2	8.4	2.7
Sectors other than Construction	56.8	58.6	63.5	1.7	2.7	-3.4
Admin., Suppt. & Waste Mgmt.	13.3	14.5	13.3	-0.8	0.5	-3.9
Retail Trade	7.6	7.3	7.7	0.0	0.0	-10.6
Accommodation & Food Services	7.7	7.9	10.0	-17.8	-13.5	-20.2
Manufacturing	5.2	5.4	5.0	10.5	10.3	4.8
Prof., Sci. & Tech. Services	3.2	3.4	4.0	6.5	6.9	2.5
Health Care & Social Assistance	2.4	2.2	3.1	-0.1	4.1	-3.4
Other Services (except Publ. Admin.)	2.3	2.4	3.0	-2.4	-2.6	-6.6
Wholesale Trade	2.3	2.5	2.8	8.3	8.7	2.2
Agric., Forestry, Fishing & Hunting	1.7	2.0	2.7	-3.6	-1.4	-8.1
Any Other Sector	11.1	10.9	11.9	4.3	4.8	-1.2
Job-to-Job Flows (thousands)	455.3	650.9	463.5	118.5	191.4	142.4

Notes: Calculated from the set of all job-to-job flows which are within-quarter or in adjacent quarters, in which the origin industry is in Residential Building Construction (NAICS Industry Group 2361). Associated median wage changes are available for the subset of job-to-job flows in which both the separation is from and accession is to full-quarter employment, see text for details. Wage changes are calculated for full-quarter earnings of separation job S and accession job A according to (A-S)/((A+S)/2).