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Comment Robert E. Hall

Though this chapter presents itself as a technical treatise on correcting some serious biases in the Job Openings and Labor Turnover Survey (JOLTS), it actually has important lessons for labor mobility and aggregate labor-market fluctuations. I've learned a lot over the years from the Davis-Haltiwanger team and appreciate the relentless pressure that they, especially Steve, have applied to me to correct my ways.

In this literature, there is something called the "hiring-driven view." According to this view, firms adjust employment mainly by varying their hiring rates. Separation rates are constant. Research on JOLTS has voided this view, which never had any factual support and is not an intrinsic part of the Hall-Shimer position on aggregate fluctuations. The hiring-driven view is an incorrect extrapolation from the correct proposition that separations, in the aggregate, are close to a constant fraction of employment.

The team's work with JOLTS demonstrates a simple proposition: firms raise employment by increasing hiring and cut employment by increasing layoffs or other separations. The micro relation between employment growth and hires has a beautiful kink right at zero—see panel A of figure 5.4 in the chapter. The layoff rate has a similar kink (panel D of figure 5.4). Interestingly, the quit rate also has a kink (panel C of figure 5.4). Workers figure out that it is time to quit when firms downsize or their employers take actions that make them decide to quit.

I have a particular interest in aggregate fluctuations. Now that I'm fully indoctrinated by the Davis-Haltiwanger team, my view is that aggregate fluctuations have little effect on the separation rate and large effects on the job-finding rate. This view is validated by this chapter and the body of Davis-Haltiwanger research.

Panel D of figure 5.7 shows the layoff rate in the corrected JOLTS. It shows no particular bulge during the large decline in employment in the recession that began in early 2001. There is a small spike associated with 9/11. The explanation for the large role of layoffs in contractions at the firm level and the complete unimportance of layoffs in aggregate contractions is simple: aggregate employment contractions are tiny, in the range of

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0.1 percent per month, while the layoff rate is above 2 percent per month at all times.

My worst error, which I now confess, has been to downplay the significance of the Davis-Haltiwanger measures of job destruction and job creation. Earlier I had said unfortunate things like "job destruction is just the negative part of employment growth and we don't know if it occurs because of layoffs or reduced hiring, so we can't relate it to worker flows." The work on micro-JOLTs data makes it clear that job destruction and job creation are useful measures. When establishment-level employment rises, it is almost entirely the result of hires; when employment falls, it is almost entirely the result of separations. Thus, adding up all of the establishment-level employment increases tells us gross hiring and adding up all decreases tells us gross separations. JOLTS has informed us that we don't really need a survey for gross flows because we can infer them quite accurately from establishment-level employment changes, following the idea that Davis and Haltiwanger pioneered.

One of the many benefits of the Davis-Haltiwanger research program has been the Business Employment Dynamics (BED) program at the Bureau of Labor Statistics (BLS). Now that I have realized that job destruction is a reasonable proxy for separations and job creation for hires, I can study them for aggregate movements, as in figures 5C.1 and 5C.2. The job-destruction rate has a little bump upward during the recession of 2001, shaded, and job

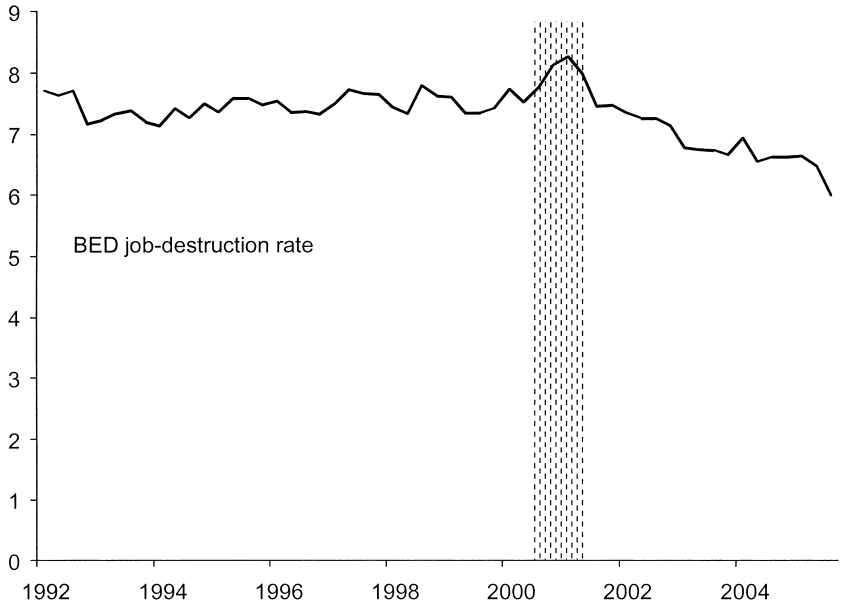

Fig. 5C.1 BED job-destruction rate

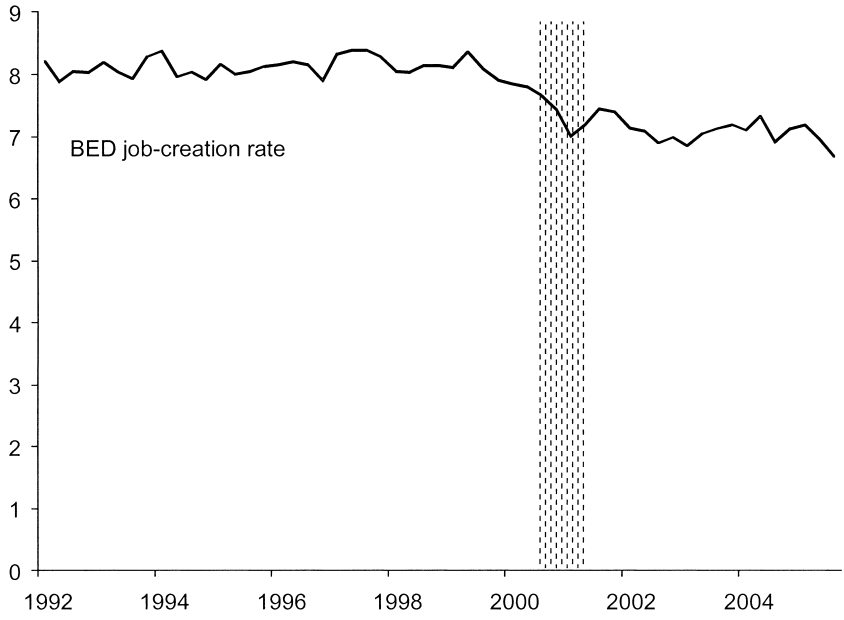

Fig. 5C.2 BED job-creation rate

creation a similar bump downward, but the view of general cyclical stability is confirmed.

The Davis, Faberman, Haltiwanger, and Rucker chapter is a big step toward reconciling worker flow rates and employer flow rates. Figure 5C.3 shows the separation rate in the Current Population Survey (CPS) since the 1994 improvements. It confirms the rise in separations in 2001, though the bump is not nearly as pronounced. The adjusted JOLTS separation rate in this chapter, the BED job-destruction rate, and the CPS rate are now within a reasonable range of each other.

As the chapter makes clear, the measurement of separations is tricky because they are concentrated among certain categories of firms and certain occupations. The median duration of a job in the United States is one day. Lots of separations occur in areas involving day work and highly transitory jobs, despite the low share of employment of those areas. Table 5C.1 shows the wide range of quarterly separation rates from different sources with different conceptual bases (this is from my 1995 Brookings paper, "Lost Jobs," so the CPS number does not include job-to-job separations).

Let me now turn to the theory of separations. One attractive hypothesis—to a follower of Ronald Coase—is that separations occur if and only if they are bilaterally efficient. Let J_t be the joint value achieved from the employment relationship by employer and worker, and let U_t be the value if they separate. I use U for unemployment on the supposition that the employer's

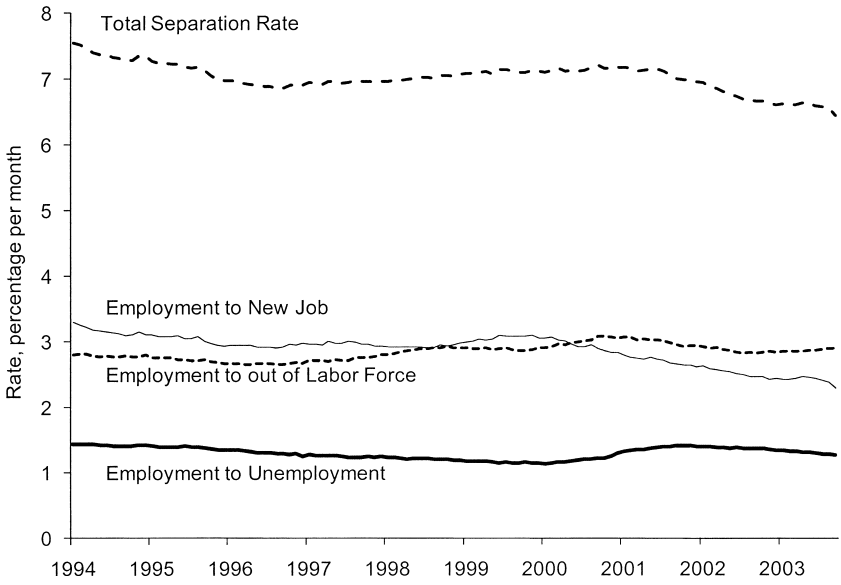

Fig. 5C.3 Separation rate in the Current Population Survey

breakup value is zero, a standard assumption in the matching literature. The Bellman equation for the employer-worker pair is

$$J_t = \max\left(a_t + \varepsilon_t + \frac{1}{1+r} J_{t+1},\ U_t\right).$$

Here a_t is an aggregate influence on the worker's productivity, and ε_t is the large idiosyncratic component, r is the discount rate. Let F be the cumulative distribution function of ε_t. Then the separation rate is

$$s = F\left(U_t - a_t - \frac{1}{1+r} J_{t+1}\right),$$

and its response to an aggregate disturbance x is

$$\frac{ds}{dx} = f\left(U_t - a_t - \frac{1}{1+r} J_{t+1}\right)\left(\frac{dU_t}{dx} - \frac{da_t}{dx} - \frac{1}{1+r}\frac{dJ_{t+1}}{dx}\right).$$

This equation identifies two factors that could make the effect of x on separations fairly small, as we find in the data. One is that the density f could be small. This would imply that fairly few workers are close to the margin of separation. A low value of f would naturally occur if the dispersion of the idiosyncratic component is high. Davis, Faberman, Haltiwanger, and Rucker have demonstrated exactly that proposition in their work on microdata.

The other factor is that the aggregate influence on the unemployment

Table 5C.1 Measures of separation rates

Measures	Rate of job loss
Permanent separations, UI system data[a]	17.23
Current Population Survey (CPS) tenure survey, 1981[b]	10.04
All separations, CPS[c]	8.29
Gross employment reductions[d]	5.66
Permanent layoffs, PSID, 1985[e]	1.81
Displaced Workers Survey, all workers, 1991–1993[f]	0.61
Displaced Workers Survey, workers on the job for at least 3 years, 1991–1993[g]	0.59

[a]Anderson and Meyer (1994, table 2). Measured directly from unemployment insurance records.

[b]U.S. Bureau of Labor Statistics (1983, table 1, 1). Fraction of workers on the job for six months or less, stated at quarterly rate (unadjusted rate is 18.2 percent per six months).

[c]Blanchard and Diamond (1990, figure 1). Average monthly flows out of employment, 1968 to 1986, divided by civilian labor force for 1977 (Economic Report of the President, 1995, table B-33), stated at quarterly rate (unadjusted rate is 2.7 percent per month).

[d]Davis, Haltiwanger, and Schuh (1995, table 2.1) using the Longitudinal Research Database (LRD). Quarterly flow of "job destruction" in manufacturing, with adjustment for compounding (unadjusted rate is 5.5 percent per quarter).

[e]Topel (1990, figure 1). Annual frequency of job loss from employer going out of business, layoff or firing, and completion of job reported in Panel Study of Income Dynamics (PSID), stated at quarterly rate (unadjusted rate is 7.0 percent per year).

[f]U.S. Bureau of Labor Statistics (1994, table 8). Total number of workers displaced between January 1991 and December 1993, divided by the civilian labor force for 1992 (Economic Report of the President, 1995, table B-33), stated at quarterly rate (unadjusted rate is 7.1 percent per three years).

[g]U.S. Bureau of Labor Statistics (1994, table 1). Number of workers with tenure of at least three years displaced between January 1991 and December 1993, divided by the civilian labor force for 1992 (Economic Report of the President, 1995, table B-33), divided by the fraction of the labor force with tenure of at least three years (51.5 percent), (U.S. Bureau of Labor Statistics 1983, table 1, 1), stated at quarterly rate (unadjusted rate is 6.8 percent per three years).

value U and on the continuation value may be about the same. For example, if x is productivity, an increase in x will raise a and J, and on that account discourage separation. But it will also tighten the labor market, lower unemployment, and increase U because the next job is found faster. Or, if wages respond to productivity, U will rise on that account. The effect of aggregate shocks on separations is ambiguous and should be small.

Notice that this view makes no assumption about how employment changes are implemented—it is a true theory of separations. Robert Shimer and I have promoted the view that fluctuations in separations are not an important factor in the aggregate. This derivation shows that the view is completely consistent with the micro facts about labor market dynamics, where separations are highly volatile and important at the establishment level.

Ever since I first read the Davis, Faberman, Haltiwanger, and Rucker chapter, I've been urging everybody in labor macro, especially those interested in search and turnover issues, to read it carefully. The chapter has already changed the standard figure for the basic turnover rate,

from the unadjusted figure in JOLTS of around 3.7 percent per month to 5 percent.

I've also come up with a two-sentence summary of the basic points of the chapter: (a) the person responsible for filling out the JOLTS questionnaire is the first person to be laid off when a company cuts back; (b) the BLS doesn't ask anyone to fill out a JOLTS questionnaire for new establishments.

References

Anderson, Patricia M., and Bruce D. Meyer. 1994. The extent and consequences of job turnover. *Brookings Papers on Economic Activity, Microeconomics:* 177–236.

Blanchard, Olivier Jean, and Peter Diamond. 1990. The cyclical behavior of the gross flows of U.S. workers. *Brookings Papers on Economic Activity,* Issue no. 2:85–155.

Davis, Steven J., John C. Haltiwanger, and Scott Schuh. 1995. *Job creation and destruction.* Washington, DC: Department of Commerce, Bureau of the Census, Center for Economic Studies.

Hall, Robert E. 1995. Lost jobs. *Brookings Papers on Economic Activity* 1:221–73.

Topel, Robert. 1990. Specific capital and unemployment: Measuring the costs and consequences of job loss. *Carnegie-Rochester Conference Series on Public Policy* 33:181–214.

U.S. Bureau of Labor Statistics. 1983. *Job tenure and occupational change, 1981.* Special Labor Force Report Bulletin no. 2162. Washington, DC: Department of Labor.

———. 1994. Worker displacement during the early 1990s. USDL no. 94-434. Washington, DC: Department of Labor.