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Comment

Robert E. Hall, *Hoover Institution, Stanford University, and NBER*

Moscarini and Postel-Vinay describe three new facts about U.S. firms and workers:

1. Employment in large firms is more cyclical than employment in small firms.

2. Job-to-job transitions decline following a recession and then grow toward the end of the ensuing expansion.

3. Real wage changes also decline following a recession and grow toward the end of the expansion.

The finding of greater cyclical movements of employment in large relative to small firms is challenging and interesting. I am afraid that most of us would have found it all too easy to rationalize the opposite finding of more instability in small firms. The authors begin the discussion with a body of data whose defect they cheerfully acknowledge, where firms are reclassified as they grow. They do not establish the relevance of the data. The measure embodies the same problem as testing efficient markets with a variable measured after an investment is made. But they do present, in figure 8, separate evidence on this point that overcomes the reclassification bias, where size is measured before the change occurs. Even the measure in figure 8 has problems that may exaggerate the cyclical stability of smaller firms. On the expansion side, the measure omits firms that did not exist at the starting date but entered during the year. Because new firms are more likely to have fewer than 500 employees, there may be a bias in the results toward stability for smaller firms. On the contraction side, Davis et al. (2007) have a new paper exploring the biases from nonresponse for flow measures in the Job Openings and Labor Turnover Survey (JOLTS) (not data used by Moscarini and Postel-Vinay). They find that, in effect, the person in charge of filling out the JOLTS form is one of the first to be let go in

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a contraction. The analogous problem here is that establishments that shrink a lot may not report. We know that the frequency of substantial proportional downsizing rates is much higher for small firms than for large ones, so nonresponse will damp the measured contraction of smaller firms relative to larger ones. These topics need further investigation before the new fact is declared to be a true fact.

Still, I think that there is a good chance that the new finding will hold up after correction for measurement problems. It is an interesting failure of Gibrat's law, holding that growth rates are independent of size and other conditioning variables. The finding has escaped the attention of the huge literature on Gibrat's law because the finding is time dependent. That literature has studied differences in growth rates by firm characteristics, but without interactions between characteristics and the stage of the business cycle.

Figure 10 in Moscarini and Postel-Vinay's paper presents data from the Current Population Survey (CPS) on the cyclical movement of employer-to-employer (EE) transitions. Small movements of the type the authors describe do appear, but you must keep your eye on the scale of the vertical axis. The average EE flow is 0.028. Further, there is a lot of data processing lying between the data and this figure. Figure 1 shows the data straight from the CPS with my own seasonal adjustment and 3-month moving averages. The movements are visible but are not a big deal.

The cyclical behavior of EE separations has figured in discussions of the constancy of total separations. Higher EE separations offset lower

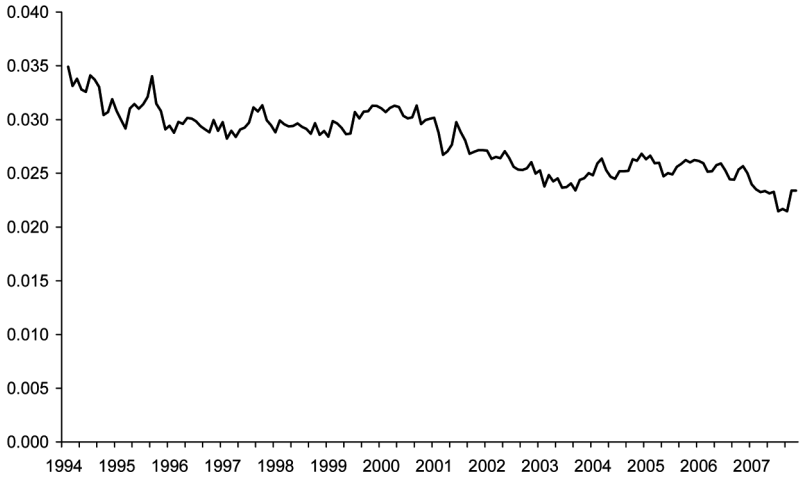

Fig. 1. The EE flow in the CPS

employment to unemployment separations in strong labor markets. That discussion has also brought out an aspect of the CPS measure of the EE flow that is only briefly mentioned by Moscarini and Postel-Vinay: workers who do not actually move from one job on Friday to a new job on Monday may still be counted as EE in the CPS provided that any period of intervening unemployment does not straddle an interview date. We know that there is a huge amount of very short-duration unemployment because the observed exit rate from unemployment is high at short durations. In the comparison of a tight labor market with one not so tight, a larger fraction of unemployment spells will straddle an interview date in the weaker market. That phenomenon seems entirely adequate to explain the small amount of cyclical variation observed in the EE rate.

In models incorporating on-the-job search, the defining feature of poaching and the relevant part of the EE flow is that a worker enjoys a stronger bargaining position because the worker has the option of remaining on the earlier job. Moscarini and Postel-Vinay speak of the EE flow as if it were entirely of this character, when an unknown fraction of workers making EE transitions were laid off from their previous jobs but had no recorded unemployment before finding a new job. We measure the poaching flow neither in the CPS nor in the Survey of Income and Program Participation. In current work, Alan Krueger and I find that about a third of newly hired workers retained the option of remaining on an earlier job at the time they negotiated with their new employers (Hall and Krueger 2008). This helps understand the importance of poaching, but it is a snapshot and does not answer the question of cyclical variations in poaching flows, which remain unmeasured.

The evidence on real wage changes is quite mixed, in my view. I think it is useful to start with a quick review of the fundamentals of real wages. A one-sector economy with constant returns and competition has a factor-price frontier—the set of real factor prices corresponding to a product price that equals unit cost:

$$1 = A^{-1}\left(\frac{w}{p}\right)^{\alpha}\left(\frac{p_x}{p}\right)^{1-\alpha}.$$

The Cobb-Douglas technology happens to have a Cobb-Douglas factor-price frontier. Solving the frontier for the real wage describes the fundamentals in a useful way:

$$\frac{w}{p} = A^{1/\alpha}\left(\frac{p_x}{p}\right)^{-(1-\alpha)/\alpha}.$$

With one other factor, we see that the real wage depends positively on productivity A and negatively on the other factor price. The price of imports relative to consumption can be called the terms of trade. Although the derivation of this relation relies on competition, whereas models with labor market frictions are inevitably not purely competitive, the usual calibration places the wage very close to the competitive level. Usually about 98% of the wage is a Ricardian rent to labor determined by forces of competition, and the remaining 2% is the worker's share of the match surplus.

I take the other factor to be imports, thinking mainly of oil. The rental price of capital also belongs in the relation but tends to be stable. Figure 2 shows the relation between the standard series for the real wage (hourly earnings of nonfarm private workers divided by the consumer price index) and the terms of trade. Most of the action in the terms of trade comes from the two big oil shocks (prior to the current one) in 1974 and 1979. The current oil shock is just beginning to show up. Declines in the real wage plainly accompanied the two oil shocks. Those declines are much larger than any from cyclical movements. Nothing visible happened to the real wage around either of the two latest recessions, the main focus of Moscarini and Postel-Vinay's paper. If you had to pick a single variable to take as the determinant of the real wage, it would be the terms of trade, not the cycle. The figure makes it particularly clear that the strategy of hoping that Hodrick-Prescott filtering will remove all but the cyclical movements in the real wage is wishful thinking.

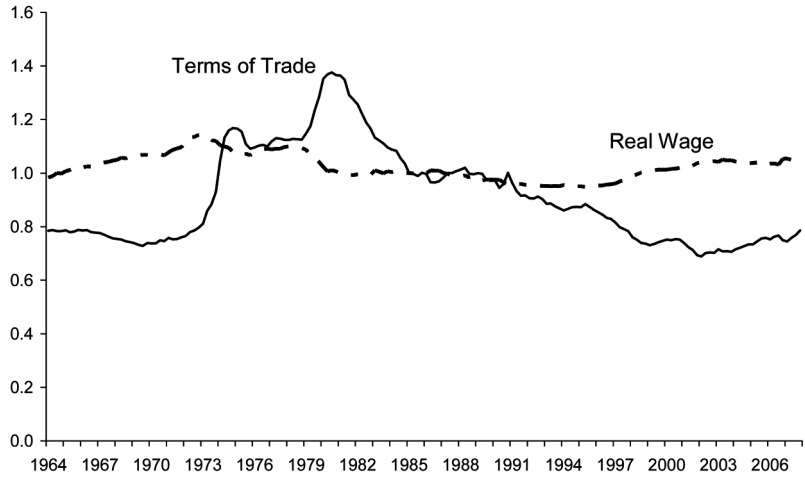

Fig. 2. Real wage and terms of trade

Another element of the wage story and a critical aspect of the model is productivity. Although Moscarini and Postel-Vinay's paper is set up so that it does not take a stand on why the labor market starts out soft, the driving force of the expansion is a 2% increase in productivity. A reasonable inference is that a decline in productivity, relative to trend, caused the recession in the first place. But one idea that fails completely is that productivity slowdown caused either of the last two recessions. Figure 3 shows output per worker (the relevant measure of productivity, I argue elsewhere). You can stare at this until blind and not see any contribution of productivity to these recessions. The case is quite different for earlier recessions.

We all know that the 1990–91 recession was caused by the savings and loan crisis, the 2001 recession by the tech crash, and the 2008 recession by the housing collapse, not by productivity disappointments; but nobody has created a workable modern model that explains why these events should cause economywide softening of the labor market.

Moscarini and Postel-Vinay's model treats smaller firms as a kind of reservoir of employment where workers park, holding low-wage jobs until big firms see fit to hire them away. That seems like an idea that is not totally crazy. I wrote a paper a while ago with a similar idea looked at just from the worker's perspective: somebody who loses a high-wage job will be willing to take an interim job until a good job becomes available (Hall 1995). Implicit in my model was the view that good jobs came along rarely. That might be the result of search frictions or because

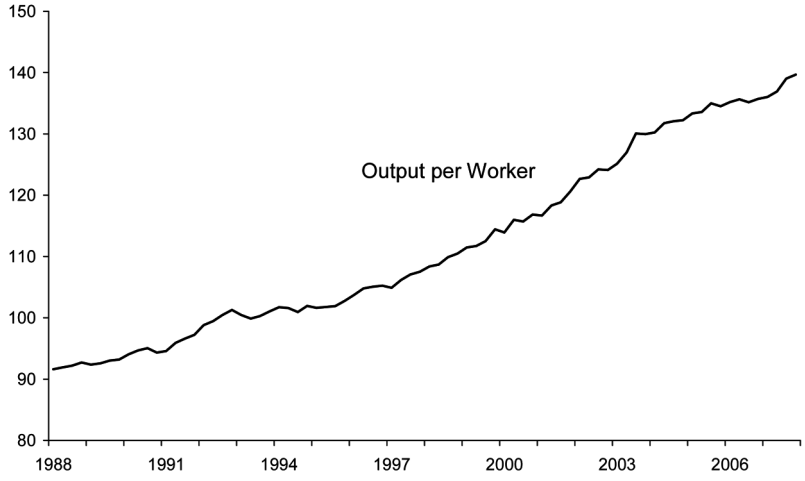

Fig. 3. Output per worker

of queuing in response to wages held above the equilibrium level by labor unions or other factors. My model was even further from a full equilibrium model than the one in this paper.

One last thought. Moscarini and Postel-Vinay enter the complex world of posted wage contracts after dismissing the standard Mortensen-Pissarides setup with a single sentence: "The search-and-matching business cycle literature commonly assumes that wages are settled through a bargaining process but does not identify the source of parties' bargaining power." Whether bargaining or posting is the appropriate model is an empirical issue with astonishingly little empirical research. I did a quick review of job listings in the *Chicago Tribune* and found that essentially none described the terms of employment. I found an advice book for job seekers that contains the passage "Congratulations! You made it through the interview process. Both you and the hiring manager agree that you are the right person for the job. Now, however, you must negotiate the terms of the job offer" (Wegerbauer 2000, 3). Krueger and I measure the fraction of newly hired workers whose wages were determined after matching and qualification as against those who were hired into jobs with predefined compensation. We find the fraction to be around a half.

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