Wage Rigidity and Job Creation

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Abstract

Shimer (2005) and Hall (2005) have documented the failure of standard labor market search models to match business cycle fluctuations in employment and unemployment. They argue that it is likely that wages are not adjusted as regularly as suggested by the model, which would explain why employment is more volatile than the model predicts. We explore whether this explanation is consistent with the data. The main insight is that the relevant wage data for the search model are not aggregate wages, but wages of newly hired workers. Preliminary results show that wages for those workers are much more volatile than aggregate wages, suggesting that other (real) frictions might be more important than wage stickiness.

1 Summary

Rigid wages can help to improve the performance of labor market search models in explaining business cycle fluctuations. In this paper, we argue however, that this modification of the standard models may not be justifiable on empirical grounds. While we do not question the observation that aggregate wages are not very volatile, we argue that the relevant wage series for a theory of job creation should be the wages for newly hired workers rather than aggregate wages.

There are many theoretical reasons why wages of *ongoing* work-relationships are relatively insensitive to productivity fluctuations at business cycle frequencies. We can think of union agreements, wage indexation, efficiency wages (Yellen 1984), implicit contract agreements or motivational considerations (Bewley 1989, 1999). In addition, there is ample empirical evidence that aggregate productivity at the time of hiring has long-lasting effects on the wage of a worker (Beaudry and Di Nardo 1991). However, none of these

arguments play a role for new hires, at least not without further assumptions. Hall (2005), for example, resorts to a social norm in order to extend wage stickiness to newly hired workers.

Beaudry and DiNardo's model of implicit wage contracts is a good illustration of the type of wage rigidity that we believe to be more plausible. Upon the start of a work-relationship the bargaining parties are relatively free in their wage determination. However, once the contract has been signed, wages can no longer be changed very much. This kind of rigidity may be sufficient to make employment more volatile in a Real Business Cycle model, where the representative agent chooses how many hours to work based on the going wage rate. It is no use however, to amplify unemployment fluctuations in a job matching model.

In Shimer (2005) and Costain and Reiter (2005), Nash bargaining is identified as the culprit why the standard Mortensen-Pissarides (1994) matching model cannot generate observed unemployment fluctuations. Shimer suggests a procyclical bargaining power for the firm as a shortcut to help firms reap more benefits from technological upswings. Hall (2005) proposes to model wage rigidity along the lines of MacLeod and Malcomson (1993) and Malcomson (1999), in addition to a social norm that assures that new jobs are paid the same wage as existing jobs. The bottom line of these and other (e.g. Kennan 2005) proposed solutions is that, for some reason or other, wages of newly hired workers are insensitive to fluctuations in the productivity of these workers. This gives firms stronger incentives to post many more vacancies in booms, which then creates the large unemployment fluctuations that we observe in the data.

In this paper we argue that the observed wages of new hires are in fact rather sensitive to cyclical changes in economic conditions. We construct quarterly wage series using earnings data from the outgoing rotation groups of the Current Population Survey (CPS). Since 1994, a separate question in the CPS asks employed workers whether they are working in the same job as last month. This question allows us to distinguish newly hired workers from workers in an older match. To obtain a longer time series, we also use employment status, industry and occupation in the previous month to identify new hires. We show that for the full sample of all workers in the CPS, our wage series looks similar to, and is highly correlated with, aggregate wages.

The main exercise is to compare the volatility of average wages for newly hired workers with the volatility of average wages of workers that have been in the same job for at least one month (job stayers). This exercise is complicated by the fact that the sample size for new hires is much smaller than that for job stayers. Therefore, sampling error will make wages for new hires look more volatile even if they are not. Clearly, a well-specified test has to account for this problem. Simple box plots provide a first glimpse of the result (see figure). The two plots represent the variability in quarterly

(HP filtered) wages for new hires (job switchers plus previously unemployed workers) and for a random subsample of job stayers, so that the sample sizes are equal for the two groups of workers. Clearly, wages of new hires are more volatile. An F-test overwhelmingly rejects the null that the two variances are equal (p-value 1.3%).

In order to get better estimates, we consider the relevant component of the volatility in both series, i.e. the part of the variance that reflects changes in economic conditions. Since the sampling error is uncorrelated over time, the elasticity of wages with respect to productivity provides a reliable measure of this component. Moreover, it is directly comparable to the predictions of a search model with stochastic match productivity. Preliminary estimates suggest that the elasticity of wages with respect to productivity is much smaller for job stayers, but close to one for new hires, as the standard search model would predict.

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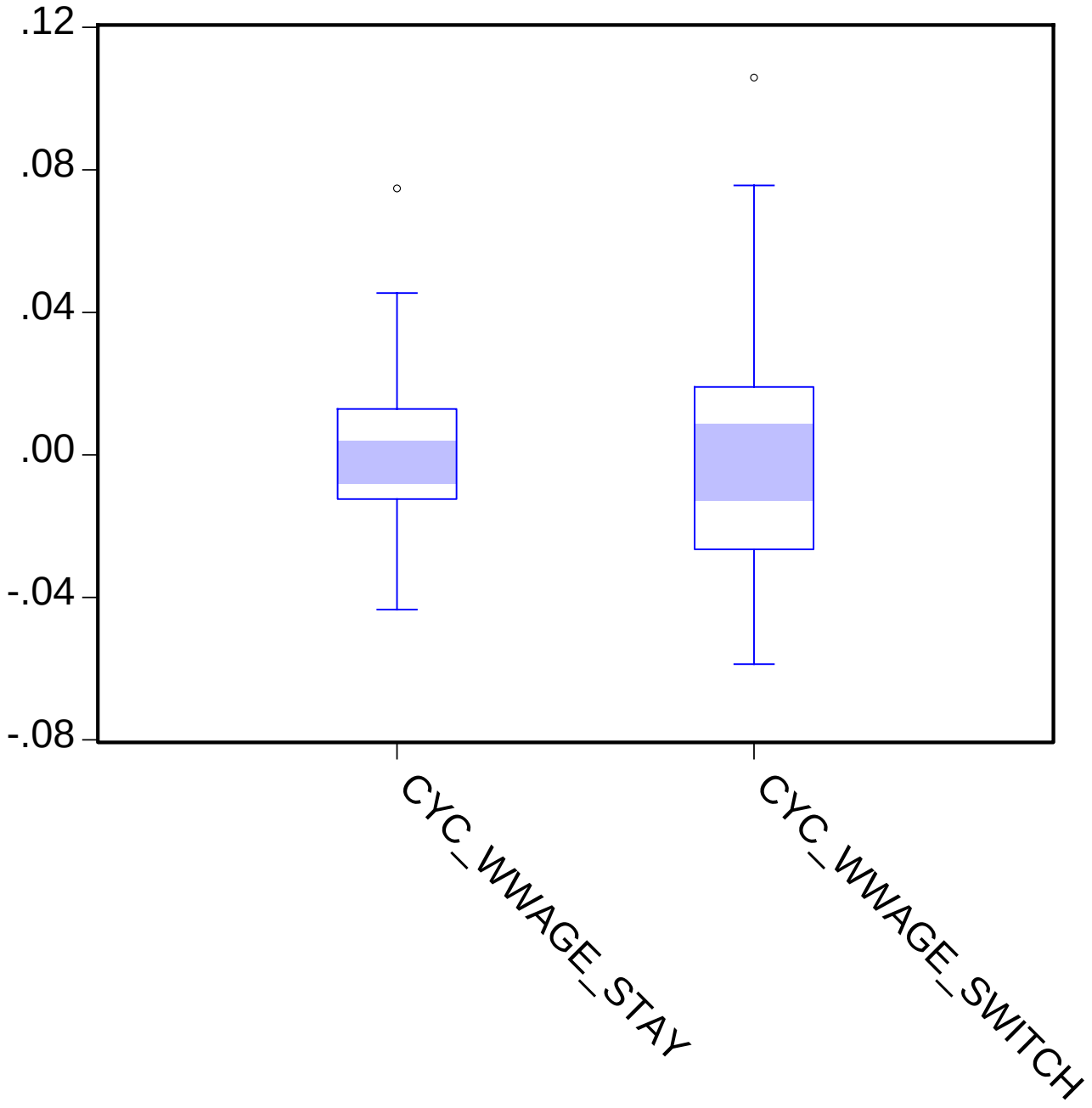
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