Worker mobility in a search model
with adverse selection ☆

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Abstract

We analyze the effects of adverse selection on worker turnover and wage dynamics in a frictional labor market. We consider a model of on-the-job search where firms offer promotion wage contracts to workers of different abilities, which is unknown to firms at the hiring stage. With sufficiently strong information frictions, low-wage firms offer separating contracts and hire all types of workers in equilibrium, whereas high-wage firms offer pooling contracts, promoting high-ability workers only. Low-ability workers have higher turnover rates and are more often employed in low-wage firms. The model replicates the negative relationship between job-to-job transitions and wages observed in the U.S. labor market.
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1. Introduction

The ability of the labor market to allocate resources hinges upon the type and severity of the frictions that prevent workers and firms in forming the most efficient matches. On the one hand,

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theories of search frictions emphasize the costs associated with finding the right worker or the right job. Theories of adverse selection, on the other hand, stress the importance of asymmetric information at the hiring stage as an impediment for labor turnover.[1] Taken together these frictions can present formidable barriers for worker turnover and efficient resource allocation. Lockwood (1991), for example, suggests that adverse selection exacerbates the negative effects of search frictions by reducing the re-employment chances of unemployed workers. With almost no exceptions, however, current contributions on labor search with adverse selection abstract from job-to-job flows,[2] although these transitions account for a sizeable part of worker flows. Furthermore, the rate at which workers change jobs is an important determinant of wage dynamics (see, e.g., Topel and Ward, 1992). Thus one would expect that asymmetric information not only has non-trivial implications for workers' job turnover, but also for how their wages evolve over time.

In this paper we present a theoretical analysis of the interaction between search frictions, on-the-job search and asymmetric information. Our objective is to study how asymmetric information about workers' abilities affects the mobility of workers within and across firms in a frictional labor market. A key implication of our model is that high-wage firms offer more attractive employment conditions to high-ability workers than to low-ability workers. This implies that low-ability workers have higher turnover rates even though all workers face the same degree of search frictions.[3] We show that our model is quantitatively consistent with the observed negative relationship between wages and the number of job-to-job transitions we uncover using the National Longitudinal Survey of Youth (NLSY). In particular, workers that undertake substantial job changes have on average lower earnings than workers who change relatively fewer times. This is in contrast with standard theories of on-the-job search such as Burdett and Mortensen (1998), which we show predict a positive relationship between wages and the number of job-to-job transitions. We further show that the negative relationship between those variables observed in the data is generated by worker unobserved heterogeneity, as implied by our model.

We consider a frictional labor market similar to Burdett and Mortensen (1998), where workers search randomly for job opportunities and firms commit to long-term wage contracts. In deviation from this benchmark, information is asymmetrically distributed in our model: while workers are perfectly informed about their ability, firms learn workers' ability slowly over time. Further, firms post a menu of promotion contracts, one for each worker type, to which they are committed. Any contract offers a starting wage based on the worker's reported ability. Upon learning the worker's type, the firm promotes the worker if the worker reported his type truthfully; otherwise the worker is demoted.

When a meeting takes place, the worker chooses whether to accept the job and the terms of employment based on the reported ability. By misreporting his type, a low-ability worker earns a higher starting wage but faces the possibility of demotion accompanied by a wage cut. By reporting truthfully, the worker earns a lower starting wage but faces the prospects of a promotion with a wage rise. This trade-off determines the incentive-compatibility constraint that firms must satisfy if they want to separate workers at the hiring stage. A key result is that the firms' willingness to separate their applicants depends on the degree of information frictions relative to search

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[1] Search models of the labor market are surveyed in Rogerson et al. (2005). For labor market implications of adverse selection, see e.g. Salop and Salop (1976), Greenwald (1986), Gibbons and Katz (1991).

[2] We review some of this literature in Section 1.1 below.

[3] The empirical findings of Kahn (2013) indeed suggest that workers with higher job mobility patterns are on average of lower ability than those who move relatively less.