Wage bargaining and turnover costs with heterogeneous labor and asymmetric information [1]

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Abstract

We study a model of individual wage bargaining between heterogeneous workers and firms, with instantaneous matching, free firm entry, workers' individual productivities are discovered by firms only after being hired, and it is expensive for firms to hire and fire workers. We show that inefficiencies due to bargaining and externalities in the matching process lead firms to employ too few worker types. Employment among employed worker types is also inefficiently low when workers have high bargaining power, but may be too high when workers' bargaining power is low. The government can correct these inefficiencies by reducing or increasing firms' hiring and firing costs. This implies that the costs of firing tenured workers 'almost always' should be reduced. We argue that the model gives a good description of recent labor market phenomena in advanced economies. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

The purpose of this paper is to study the properties of a labor market where heterogeneos workers bargain individually with their employers over the wage.

We extend the standard bargaining/matching model (e.g., Pissarides, 1985, 1987, 1990; Mortensen and Pissarides, 1994, 1998) in two new directions. First, workers are no longer identical but instead have different but given productivities, known to each worker but not to the firm at the time the worker is hired. With heterogeneous labor, the issue of firing then becomes relevant even when there are no (idiosyncratic or general) shocks, since firms may wish to replace their initially hired workers with other, more productive, ones. Secondly, we assume that there are both hiring costs (paid for by the firm and corresponding to recruiting costs in Pissarides), and costs of firing already engaged workers. Hiring costs do not directly affect firms' firing decisions; firing costs, however, do. We will assume that firms observe individual workers' productivities only after the time at which they are hired, which implies that any hiring costs must then already be sunk. Firms then wish to retain those workers who have the highest productivities, and may wish to fire those workers whose productivities fall below some minimum level. We then find it relevant to distinguish between three categories of firing costs: (a) the cost to the firm of immediately getting rid of a worker that is just hired, but the firm does not wish to keep; (b) a pure cost paid by the firm (which consequently 'vanishes' from the firm–worker relationship) upon the separation of a 'tenured' (or initially wanted) worker from the firm; and (c) a redundancy payment from the firm to a tenured worker upon separation. Since firms are identical, all choose the same cutoff level for productivity, z_1, beyond which workers are retained. A simplification relative to the standard matching model is that our process of matching workers and firms involves no frictions, and that active jobs suffer no vacancies. In addition to simplifying the analysis considerably, such an approach also has the attractive feature that a standard competitive solution now arises when workers' relative bargaining strength goes to zero, making it possible to investigate the issue of market efficiency in this important special case.

The paper integrates a modified version of the Pissarides–Mortensen matching/bargaining theory for the labor market, with recent literature on turnover costs. It makes a first step in the direction of endogenizing simultaneously worker hiring standards and overall employment when workers have unobservable productivity differences. Several of our results are novel; in particular, those describing how firms' hiring and firing decisions imply externalities in the market for matching of heterogeneous workers, and how firms' minimum hiring standards and overall employment depend on workers' bargaining strength and on the costs of firing workers immediately or later. We also point out in Section 5, how the model may help us to understand and interpret important and recently observed labor market phenomena in advanced economies. In particular, the model yields a coherent theory of observed differences in wages and in hiring and unemployment rates for workers at different productivity levels, and predicts how these variables will change when hiring and firing costs change. By deriving the optimal solution (given the informational constraints imposed) we are also able to discuss possible