Labor market dynamics when effort depends on wage growth comparisons*

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Abstract. We present an efficiency wage model in which workers’ disutility of effort depends on the level and on the growth rate of their wage relative to an alternative wage. Using data for four countries (US, UK, FR, GY), the implications of the model are examined and are found to be in accordance with the information in the non-stationary data. The restrictions implied by the model dynamics are not rejected by the data and the structural parameters are found to be constant through time. One interesting result is that the workers’ disutility of effort depends less on relative wages growth and more on relative wage levels in the US than in the three European countries analyzed.

Key words: Efficiency wages, partial gift exchange, effort function, cointegration, GMM.

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1. Introduction

The contrast between the US pattern of the labor market and its European counterpart has attracted wide attention (see e.g. Card, Kramarz and Lemieux (1996)). Indeed, in the last two decades, the US labor market was characterized by constant or even declining real wages and rising employment,

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while the European labor market experienced steadily rising real wages and falling employment, and a substantial and persistent high level of unemployment.

There are many reasons for doubting that the time series properties of wages and employment can be understood in terms of the outcome of a competitive labor market. Indeed, dynamic models with perfect competition systematically fail to reflect the low response of wages to shocks and the high response of employment. Attempts to tackle this failure within the Walrasian paradigm are proposed in Christiano and Eichenbaum (1992), Burnside, Eichenbaum and Rebelo (1993) and Fairlie and Langot (1994) and further evaluated using European data by Fève and Langot (1994).

Departures from the Walrasian framework account for some of these facts (An exploratory computable model is proposed by Bénassy (1995)). Among the various ways to improve modelling the labor market, efficiency wage theories seem a very promising one. In these models, the firm chooses the wage so as to motivate its employees, to reduce its turnover costs or to attract a larger share of skilled workers to its work basin. As stressed in the recent survey of MacLeod and Malcomson (1993), these models are able to explain why wages may not respond to some shocks and/or display asymmetric behavior over the business cycle and why employment varies so much.

In this paper, we develop an efficiency wage model in the spirit of the partial gift exchange of Akerlof (1982). In this framework, workers are ready to increase their effort in exchange of getting a fair wage from the firm. The fair wage depends on a comparison between the current wage and a norm which includes the wages received by other workers, the level of unemployment and unemployment benefits, and the actual wage of the individual in previous periods. This last element has been omitted in the subsequent analyses since the majority of them were performed in static frameworks. The optimal response of the firm to this behavior is to offer a wage above the market-clearing wage in exchange of which workers will provide a higher level of effort.

The idea that the wage growth comparisons are important in the determination of the fair wage is supported by various studies which tend to show that, in addition to the usual comparison of the level of firm’s wages with outside wages, workers also compare their current situation with that in the past. For instance Lord and Hohenfeld (1979) compared the performance records of 23 major league baseball players who, for contract reasons, were paid less one season than they were the previous season. Thus, using their own salaries for the previous year as a basis of comparison, they were expected to have felt underpaid. The study shows that these players lowered their performance; in particular, they had lower batting averages, hit fewer home runs, and had fewer runs-batted-in. (from Greenberg and Ornstein (1984)).

A micro-econometric study of Wadhwani and Wall (1991) goes in the same direction. The authors use a panel on U.K. manufacturing enterprises to estimate their production function (including thus the effort function). They allow the wage norm to depend on past wages and show that there is some

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1 There exists two other strands of literature dealing with efficiency wages: the shirking approach (see e.g. Shapiro and Stiglitz (1984)) and the turnover costs approach (see e.g. Salop (1979)).