Journal of Economic Dynamics & Control 37 (2013) 1796–1813

Contents lists available at SciVerse ScienceDirect

Journal of Economic Dynamics & Control

journal homepage: www.elsevier.com/locate/jedc

Search frictions, real wage rigidities and the optimal design of unemployment insurance

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ARTICLE INFO

Article history:
Received 21 July 2009
Received in revised form
24 July 2012
Accepted 25 March 2013
Available online 31 March 2013

JEL classification:
E61
E65
J63
J65

Keywords:
DSGE models
Search and matching frictions
Layoff tax
Wage rigidities

ABSTRACT

In this paper, we study the optimal unemployment benefits financing scheme when the economy is subject to labor market imperfections characterized by real wage rigidities and search frictions. The US unemployment insurance financing is such that firms are taxed proportionately to their layoffs to finance unemployment benefits. Using DSGE methodology, we investigate how policy instruments should interact with labor market imperfections. It is shown that wage rigidities in a search and matching environment cause welfare costs, especially in the absence of an incentive-based unemployment insurance. This cost is mainly due to the distorting effect of wage rigidities which generate inefficient separations. We show that the optimal unemployment benefits financing scheme – corresponding to the Ramsey policy – offsets labor market imperfections and allows implementation of the Pareto allocation. The second-best allocation brings the economy close to the Ramsey allocation. The implementation of the optimal policies clearly highlights the role of labor market institutions for short-run stabilization.

1. Introduction

What is the optimal level of unemployment benefits and how should they be financed? This question is often discussed without taking into consideration labor market rigidities or the potential role of labor market institutions for short-run stabilization, leaving the job to macroeconomic policy, and especially monetary and budget policy. Indeed, the labor market is characterized by search frictions and wage rigidities which distort agents' job acceptance behavior and firms' job postings. This may generate inefficiencies and affect labor market performance as well as social welfare. Furthermore, it influences the response of macro-economic variables to aggregate shocks and can magnify fluctuation costs. The question of using labor market policy to reduce fluctuation costs and to offset labor market imperfections naturally arises. Taking inspiration from the US unemployment insurance (UI hereafter) system, we wonder if firms should be taxed in proportion to their layoffs to finance the costs incurred by the unemployment benefits fund. This paper investigates the optimal design of an unemployment benefits financing scheme in a DSGE framework.

While it is often argued that labor market institutions can affect long-run labor market performance, they have received little attention in the field of short-run stabilization. The marked intensity of business cycles in the US and the high volatility

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0165-1889/$ - see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jedc.2013.03.010

of unemployment and vacancies highlights the usefulness of stabilization policies based on the search for an optimal design of the UI. Moreover, the existence of labor market rigidities gives rise to a complementary motivation. These rigidities can be summed up as two categories: those which limit quantity adjustments and those which limit price adjustments.

Matching frictions typically represent the first category. They capture the time-consuming search process and generate congestion externalities. They influence the average duration of unemployment and therefore the fiscal cost associated with a dismissal. The second category corresponds to real wage rigidities. These have been pointed out by many authors (Hall, 2005; Shimer, 2005; Christoffel and Linzert, 2010) as a means of solving the unemployment volatility puzzle. They prevent wages from adjusting instantaneously to economic fluctuations. Consequently, shocks translate into quantities such as employment, job creations and job destructions. Furthermore, they capture rigidities arising from wage norms. They reduce the ability of firms and workers to use taxes and benefits as a threat in wage bargaining. Following Abbritti and Weber (2008), the nature of adjustments in the US labor market may be linked to its institutions which allow strong quantity adjustments associated with significant real wage rigidities.[1] The idea that matching frictions and wage rigidities could interact arises. These labor market rigidities introduce some inefficiencies and leave room for policy instruments to reduce inefficiencies and stabilize labor market fluctuations.

There is a growing literature about fluctuation stabilization and labor market imperfections. However, most of this literature is centered on the design of the optimal monetary policy (see Christoffel and Linzert, 2010; Blanchard and Gali, 2010; Abbritti and Weber, 2008). Zanetti (2011), Joseph et al. (2004) and Faia (2008) introduce some labor market institutions such as unemployment benefits, firing costs or a minimum wage in a DSGE model and study their implications for business cycle dynamics. Krause and Lubik (2007) show that labor market frictions and real wage rigidities explain the negative correlation between vacancies and unemployment. However, their contribution in explaining inflation dynamics is small. Campolmi and Faia (2011) show that labor market institutions, and especially the heterogeneity of the replacement ratios, help to explain inflation differentials between the countries of the euro area. From a positive point of view, labor market institutions matter to explain labor market dynamics and inflation volatility differences in the euro area. Krause and Lubik (2007) and Campolmi and Faia (2011) focus on monetary policy issues but none of them characterizes the optimal design of these institutions. The scope of our paper slightly departs from these studies as we only focus on unemployment dynamics and on the design of unemployment benefits financing.

In the US, the rapid increase in unemployment after bad shocks can be related to the weakness of the employment protection legislation and the extent to which firms can layoff workers at no cost. Intuition suggests that if firms do not pay the entire cost of their dismissals, their incentive to fire is higher. The role of unemployment insurance in magnifying permanent and temporary layoffs has been illustrated by a large body of papers (Feldstein, 1976; Topel, 1983; Card and Levine, 1994). In this system based on the experience rating principle, individual employers' contribution rates are varied on the basis of the firm's history of generating unemployment. Basically, more dismissals result in a higher contribution by firms to unemployment insurance. Blanchard and Tirole (2008) highlight the question of the design of unemployment insurance and its link with employment protection. The respective levels of the layoff tax and of the unemployment benefits may play a key role in achieving an optimal allocation.

In order to characterize the optimal UI financing scheme, we build a DSGE model with search and matching frictions and where job creations and job destructions are both endogenous. It has been widely recognized that as firms bear a small share of the total cost of job destructions (due to imperfect experience rating), the UI induces too many layoffs. Moreover the existence of search frictions and wage rigidities can strongly affect the firm's hiring and firing behavior. Then we wonder how much firms should be taxed in proportion to their layoffs to finance the fiscal cost induced by their redundancies. Using the DSGE methodology we compute the Ramsey policy. Under this setup we study (i) how the optimal policy can offset labor market imperfections (ii) how it reduces the welfare cost and (iii) how it affects the business cycle.

We show that an optimal combination of unemployment benefits and layoff taxes is welfare-enhancing and can improve labor market performance. Wage rigidities in a search and matching environment have a strong impact on the welfare cost, especially in the absence of an incentive-based unemployment insurance. This cost is mainly due to the distorting effects of wage rigidities which generate inefficient separations. The optimal unemployment benefits financing scheme corresponding to the Ramsey policy allows the implementation of the Pareto allocation. As the Ramsey policy may not be easily implementable in the present labor market institutions, we define a second-best allocation. The replacement rate and an experience rating degree are chosen in order to minimize the welfare cost. This policy brings the economy close to the Ramsey allocation. The implementation of the optimal policies clearly highlights the role of labor market institutions for short-run stabilization.

The rest of the paper is organized as follows. Section 2 presents the model and the unemployment insurance system. The equilibrium and the optimal policies are defined in Section 3. Section 4 is devoted to simulation exercises and Section 5 concludes.

2. The economic environment and the model

We build a discrete time DSGE model including a non-Walrasian labor market and endogenous job destructions in the spirit of Mortensen and Pissarides (1994) and Den Haan et al. (2000). Workers may be employed or unemployed and endogenous separations occur because of specific productivity shocks to jobs. There are search and matching frictions in the labor market.

[1] Abbritti and Weber (2008) estimate the degree of real wage rigidity on OECD country data. Their estimates suggest that flexible labor markets are associated with a high degree of real wage rigidity.