



Endogenous labor market institutions in an open economy[☆]

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ABSTRACT

The paper sets up a two-country asymmetric trade model with heterogeneous firms, search frictions and endogenous labor market institutions. Countries are linked by trade in goods and non-cooperatively set unemployment benefits to maximize national welfare. We show that more open and smaller economies have more generous unemployment benefit replacement rates as a larger fraction of the costs is borne by foreign trading partners. These results are in line with empirical stylized facts. Additionally, we find that the optimal level of unemployment benefits is independent from the level of unemployment benefits abroad and that non-cooperatively set unemployment rates are inefficiently high.

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1. Introduction

Countries differ dramatically with respect to the generosity of their labor market institutions. For instance, OECD data show that the average net unemployment benefit replacement rate varies between about 82% in Denmark to 8% in Italy.¹ What are the determinants of these differences? Using data for OECD countries from 1961 to 2007, we present two stylized facts: the generosity of unemployment benefits is larger in more open economies and smaller in larger countries. This correlation holds unconditionally, but also survives conditioning on country effects or GDP per capita. It is both statistically and economically significant. So far, the literature has documented similar patterns for very general measures of government size (Rodrik, 1998) but not for the specific case of labor market institutions. In this paper, we show that a plain vanilla combination of a workhorse trade model (Melitz, 2003) and the leading search-matching labor market paradigm (Mortensen and Pissarides, 1994), with governments choosing unemployment benefits non-cooperatively, yields implications that are consistent with these stylized facts.

Our model deviates from the standard search model by allowing firms to operate on declining marginal revenues schedules due to monopolistic competition. With individual intra-firm wage bargaining, this gives rise to an over-hiring externality. Firms hire workers beyond the point where employment costs equal marginal product. This reduces the threat point of the marginal worker whose contribution to the total value of the firm is depressed by expanding the work force. However, this strategic

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¹ Averaged over four family situations and over 60 months of unemployment.

incentive is socially harmful as it increases the tightness of the labor market beyond the constrained Pareto efficient level. This implies that, in the context of monopoly power on the product markets and individual bargaining, the well-known Hosios condition, that guarantees efficiency of the decentralized equilibrium in the standard search model, is no longer sufficient. So, our model generates a welfare rationale for the existence of unemployment benefits while the standard model would not, in particular if the Hosios condition is fulfilled.

We use this framework to study trade between two asymmetric countries. Since our stylized facts hinge on data from OECD countries, where trade is mostly of the intra-industry type, we work with a one-sector model of trade in differentiated goods. However, we allow for an endogenous non-traded sector, since firms with low levels of labor productivity will sell only to domestic consumers, foreign markets being too costly to enter. For the sake of simplicity, we assume that governments set unemployment benefits to maximize the representative agent's welfare and that benefits are financed in a non-distortive fashion.² In a closed economy, governments would fully internalize the effect of unemployment benefits on the size of demand for their firms. In a model with monopolistic competition and increasing returns to scale at the firm-level, market size is a key variable as it determines the number of varieties available to consumers. With international trade, domestic consumers purchase varieties from foreign firms and domestic firms sell to foreign consumers. Taking the foreign market size as given, the government does not internalize the effect of its policies for foreign firms nor does it internalize their effect on foreign demand for domestic varieties. Since that externality is negative, it follows that, in a non-cooperative Nash equilibrium, governments set unemployment benefits too generously than if they would set them cooperatively. It also follows that the extent to which countries depend on foreign markets matters. Countries that are more open or that are smaller rely to a larger extent on foreign demand for their exports and on foreign production for their imports. In those countries, the externality is larger and hence benefits are provided more generously.

In this paper, we show that the intuition sketched above holds in an asymmetric two-country version of the model by Felbermayr et al. (2011a), who have introduced labor market search frictions into the perfectly symmetric Melitz (2003) trade model. That symmetric model is fully understood analytically. It is well known, that asymmetric models of that kind cannot be solved analytically so that we resort to a calibration-cum-simulation approach. This has tradition in the macro labor literature, but also in the trade literature; see Bernard et al. (2007). In a fully standard calibration of the model satisfying the parametrical restriction implied by the Hosios condition (in absence of monopoly power), we show that the over-hiring externality implies an optimal gross unemployment benefit replacement rate of about 12%. Violating the Hosios condition, we calibrate the elasticity of the matching function, for which empirical estimates are fairly uncertain in order to replicate the 40% gross replacement rate in the data. For given bargaining power of workers, this implies a stronger monopsony position of firms, but the required violation of the Hosios condition remains minor. We show that welfare maximizing unemployment benefits are decreasing in variable trade costs so that more open economies opt for more generous benefits. We also show that domestic market size is negatively correlated with generosity of unemployment benefits.

While other papers highlight the role of uncertainty for the correlation between openness and government size (Rodrik, 1998) or terms-of-trade effects (Epifani & Gancia, 2009), we illustrate a new mechanism that relates to the role of market size. Moreover, we focus on a very specific feature of the welfare state: unemployment benefits.

2. Related literature

Our paper is related to at least three strands of literature. First, the literature provides essentially three efficiency reasons why non-zero unemployment benefits are optimal. In the context of the standard (linear utility) Pissarides (2000) search-and-matching framework, a violation of the Hosios condition (workers' bargaining power *smaller* than the elasticity of the matching function with respect to vacancies relative to searching workers) gives firms too much local monopsony power while workers have too little relative bargaining power; this can be remedied by unemployment benefits. When wages are not bargained between workers and employers but posted as take-it-or-leave-it offers by employers, then monopsony power of firms again warrants policy intervention. Burdett and Mortensen (1998) show that in this context unemployment benefits are efficiency enhancing.³ A second line of thinking views benefits as search subsidies that can enhance efficiency when the composition of jobs matters. Acemoglu (2001) changes the standard Pissarides (2000) model in that he allows vacancy creation costs to differ across sectors. Those costs have to be sunk before wages are bargained and are irreversible. In this situation, workers can extract higher wages in the high-cost sector where the hold-up problem is larger. Firms create too little high-cost jobs, and job composition is inefficient. Unemployment benefits can remedy this in that they make low-cost jobs particularly more expensive. Other papers, such as Marimon and Zilibotti (1999) make similar arguments but work with a model that features two-sided heterogeneity. A last welfare argument relies on insurance. When financial markets are incomplete and workers are risk averse, there is an efficiency rationale for unemployment insurance. Acemoglu and Shimer (1999) develop a search-and-matching model for risk-averse workers which deviates significantly from the standard Pissarides or Burdett–Mortensen models. Workers queue for jobs, and workers post wages. In that setup, they show how unemployment benefits work as insurance. In our paper we follow the monopsony tradition because this is most straight-forwardly implemented in a canonical search model with international trade.

² The most interesting alternative assumption would probably be to study lobbying for or against generous benefit systems by trade unions and firms.

³ Manning (2006) shows that, when unemployment benefits are conditioned on search activities (i.e. not granted if agents exit from the labor market altogether), they can restore the first-best allocation.

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