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Outsourcing, unemployment and welfare policy☆

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ABSTRACT

The paper investigates the consequences of outsourcing of labor intensive activities to low-wage economies. This trend challenges the two basic functions of the welfare state, redistribution and social insurance when private unemployment insurance markets are missing. The main results are: (i) outsourcing raises unemployment and labor income risk of unskilled workers; (ii) it increases inequality between high- and low-income groups; and (iii) the gains from outsourcing can be made Pareto improving by using a redistributive linear income tax if redistribution is initially not too large. We finally derive the welfare optimal redistribution and unemployment insurance policies.

1. Introduction

As international integration proceeds, large firms find it increasingly easy to outsource the production of labor intensive components. This trend is especially pronounced in small European countries; in the Netherlands, Denmark, and Sweden, the value of goods outsourced abroad as a share of domestic demand was close to 50% in 2000, and it even approached 60% in Belgium and Austria (OECD, 2007b). An important motivation is to exploit cost advantages. Imports from low-wage countries have thus substantially increased. For instance in the UK, the share of imports from developing countries has risen from 18% to 22% of total imports in the period 1982–96 (Hijzen et al., 2005). This trends seems to have accelerated most recently. Over 1995–2004, imports from non-OECD countries have grown substantially faster than imports from OECD countries in most manufacturing sectors in France, Germany, Japan, UK and the US (OECD, 2007b).

Integration undoubtedly generates substantial gains on average. The benefits and costs, however, are unevenly distributed. The cost savings from outsourcing raise profits for shareholders. But asset wealth and profit income is concentrated among top income earners. For the US, Wolff (1998) reports that more than 90% of financial wealth is held by the top 20% over the years 1983–1995. This high concentration of wealth is also found in other OECD countries (see Burniaux et al., 1998). Unskilled workers cannot benefit from higher profits since their asset ownership is insignificant. In addition, outsourcing of labor intensive components deteriorates their labor market prospects, see Feenstra and Hanson (1996) for the US, Anderton and Brenton (1999) and Hijzen, Görg, and Hine (2005) for the UK, Strauss-Kahn (2003) for France, Ekholm and Hakkala (2006) for Sweden and Falk and Wolfmayr (2008) for several EU countries. In general, outsourcing reduces demand for low-skilled workers, which translates into lower wages and higher unemployment. According to OECD (2007a), the average unemployment rate in 2005 among individuals with less than upper secondary education amounts to 12.4% in European OECD countries, whereas people with upper secondary (tertiary) education face much lower unemployment rates of 6.4% (4.0%). Unskilled workers are clearly exposed to much greater income risk than skilled workers. In sum, globalization enhances income inequality and exacerbates the income risk of low-skilled workers. It thereby creates "more demand" for the

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basic functions of the welfare state, consisting of social insurance in the absence of private unemployment insurance, and redistribution.

However, the welfare state itself creates part of the problem. Estimates of the elasticity of reservation wages with respect to unemployment benefits range from 0.11–0.17 (Lancaster and Chesher, 1983) to values around 0.4 (Feldstein and Poterba, 1984; Fishe, 1982; Van den Berg, 1990). The high benefits in Europe (replacement rates are mostly 60% or more, see OECD, 2004) thus significantly inflate wages. Díaz-Mora (2008) estimates that a 1% increase in firms' domestic labor cost boosts the volume of outsourcing by 0.3%, and adds to outsourcing at the extensive margin by significantly raising the probability that a firm engages in subcontracting (Díaz-Mora and Triguero-Cano, 2007). Foreign countries with lower unit labor costs attract more outsourcing (Egger and Egger, 2003). We conclude that the welfare state tends to accelerate outsourcing by raising wages.

The paper investigates the consequences of outsourcing for welfare policies in high-wage economies. The theoretical model is based on two main assumptions, inspired by the stylized facts: the risk of unemployment falls on unskilled workers while firm ownership and profit income are concentrated among top earners. We consider the insurance and redistribution functions with two policy instruments, a linear income tax redistributing from high- to low-skilled workers, and unemployment insurance. The main results are: (i) outsourcing, induced by lower transport costs, depresses wages and raises low-skilled unemployment; (ii) it raises inequality; (iii) social insurance boosts wages and leads to more outsourcing and unemployment; (iv) redistribution, in contrast, reduces gross wages and unemployment of unskilled workers. By reducing the net tax on employed unskilled workers, the linear income tax acts as a wage subsidy. It allows for higher net and lower gross wages, and thus favors domestic employment over outsourcing; (v) keeping insurance constant, it is possible to use the income tax to distribute the gains from outsourcing in a Pareto improving way if tax rates are not too high. We finally characterize welfare optimal redistribution and insurance policies.

The paper is most closely related to the literature on integration and labor market performance, using models ranging from classical labor supply with full employment (e.g. Spector, 2001; Guesnerie, 2001), to search generated unemployment (e.g. Davidson et al., 1999, 2008; Davidson and Matusz, 2006) and unemployment from fair wage constraints (e.g. Egger and Kreickemeier, 2008, 2009). This paper relies on a simple static model of search unemployment because the search framework is most commonly used in empirical labor market research (cf. Krueger and Meyer, 2002; Eckstein and van den Berg, 2007) and in the literature on optimal unemployment insurance (Chetty, 2006; Gruber, 1997; Baily, 1978, among others). Although these models differ in some predictions, they share common features that are central in our model to determine unemployment and outsourcing, such as a negative relationship between wages and unemployment (see, e.g., Egger and Kreickemeier, 2008, p. 177), the simultaneous increase in profits and unemployment in response to globalization, and the tax shifting behavior so that a higher replacement rate raises producer wages and thereby leads to more unemployment (see, e.g., Egger and Kreickemeier, 2009, p. 189 and proposition 2, and 2008, p. 129). Our paper also includes a stylized analysis of wage and employment subsidies as in Davidson, Martin and Matusz (1999) because the progressive income tax redistributes from high- to low-skilled workers and, in reducing the wage tax, makes workers keener to accept job offers instead of staying unemployed.[1]

Spector (2001) studied whether a non-linear income tax can make trade liberalization a Pareto-improvement.[2] The key difference is that we combine unemployment and, thus, discrete labor supply of unskilled with intensive supply of high-skilled workers. This links our paper to the income tax literature with discrete labor supply (Immervoll et al., 2007; Blundell, 2006; Saez, 2002, among others). Saez (2002) has shown that the relative strength of the intensive and extensive responses is important in the design of optimal tax transfer schedules. The extensive margin dominates at the low end of the income distribution and can rationalize an earned income tax credit (EITC) or a wage subsidy. Eissa and Hoynes (2006) consistently find for the US that the EITC strongly increases participation while the intensive response is insignificant for low-income earners.

Our key contribution is to introduce risk-aversion. All of the papers mentioned above assume risk-neutrality and focus on the redistributive and efficiency effects. Our paper thus complements this literature by introducing gains from insurance when private unemployment insurance is not possible. We believe that this extension is necessary to evaluate both functions of the welfare state, social insurance in addition to redistribution, and it is crucial for one of our central results: globalization raises the labor income risk of unskilled workers so that governments should expand the welfare state to provide better insurance. This is consistent with the empirical finding of Rodrik (1998) that high-income countries with a larger degree of openness and exposure to external risk have significantly larger social security and welfare spending.

In the rest of the paper, Section 2 sets up the analytical model. Section 3 derives the effects of globalization and national welfare policies. Section 4 shows how the linear income tax can possibly distribute the gains from outsourcing in a Pareto improving way, and characterizes the optimal structure of insurance and redistribution policies. Section 5 concludes. The Appendix contains some technical calculations.

2. A simple model

The world economy consists of a high- and low-wage country, North and South. The North is endowed with a mass 1 of unskilled and a mass N of skilled agents. Firms supply a homogeneous *numeraire* good in two alternative sectors. Our main focus is on the innovative sector where firms combine high- and low-tech inputs to manufacture the final good. In the alternative sector, the final good can be produced with a linear technology using only skilled labor. The South is endowed with low-skilled labor only which is employed in a linear production process with a low, fixed wage.

2.1. Households

Agents are risk averse. Given wage r, skilled workers supply variable labor H earning an hourly wage $(1-T)\,r$ net of tax. They also receive profits $\overline{\pi}=\Pi/N$ per capita where Π is aggregate profits. Assuming linearly separable preferences, welfare V_H (index H for high-skilled) is a concave increasing function of income c_H minus effort costs $\varphi(H)$,

$$V_H = \max_H\ u(c_H - \varphi(H)), \quad s.t. \quad c_H = (1-T)rH + \overline{\pi}. \tag{1}$$

Given convex increasing effort costs, skilled labor supply increases with the net wage, $(1-T)\,r=\varphi'(H)$. Income effects are excluded.

Unskilled workers supply one unit of labor at a gross wage w, if employed. The ex ante probability of being unemployed $1-e$ is equal to the ex post unemployment rate. Expected utility is

$$V_L = e\cdot u(w-\tau) + (1-e)\cdot u(b+z). \tag{2}$$

To protect income, the welfare state pays a benefit b in the event of unemployment which adds to the money equivalent value z of leisure or home production (see Blanchard and Tirole, 2008). Benefits are financed

[1] In using a dynamic search framework, these authors can address sectoral labor reallocation, allowing them to distinguish between employment and wage subsidies to specifically target stayers and movers.

[2] We use a linear income tax. We are not aware of any paper that is able to deal with non-linear income taxation when there is unemployment and profit on top of wage income. Imposing incentive compatibility conditions in non-linear income taxation tends to restrict somewhat the possibility for redistribution.