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The effect of international firm mobility on wages and unemployment

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HIGHLIGHTS

- During wage bargaining multinational firms have an advantage over workers.
- The bargaining advantage of multinationals causes them to hire more workers.
- This reduces the negative effect on wages.
- A numerical simulation is performed based on Danish data.
- Overall the effects on wages and unemployment are small.

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ABSTRACT

Although the increase in international firm mobility is well documented, its effects on macroeconomic aggregates and the labour market remain controversial. Multinational enterprises (MNEs) benefit from an international outside option during wage bargaining, leading to a decrease in average wages. However, a strategic incentive to hire extra workers in a foreign (home) plant in order to reduce wages in the home (foreign) plant has an indirect positive effect on wages due to spillovers resulting from an increased demand for labour. In a framework of frictional unemployment, permitting MNEs leads to a decrease in unemployment. Abstracting from transport and plant fixed costs, MNEs lead to higher wages. Including transport and plant costs generally leads to lower wages, though the effects are small. The strategic hiring effect is important in mitigating the fall in wages.

1. Introduction

On 1st November 2006, the International Trade Union Confederation was formed in another attempt for the workers of the world to unite. When commenting on a possible merger of a British and a US union, the then joint general secretary of Britain's largest union said: "Multinational companies are pushing down wages and conditions for workers the world over by playing one national workforce off against another."[1]

Firms are now more mobile. Due to legal changes (such as the Single European Act), and technological changes (such as lower costs in providing parts maintenance and customer service from abroad) capital mobility has increased across the world (Eaton and Kortum, 2001). Trade unions have responded by increasing cooperation internationally, working through umbrella organisations such as the European Trade Union Confederation, but so far, cooperation in the area of transnational collective bargaining has not taken place. Indeed such cooperation is illegal in many OECD countries. Stole and Zwiebel (1996) show that within firms workers benefit from being in a single union if they are substitutes (where the labour revenue product function is concave), but that they benefit from bargaining for wages separately if they are complimentary (where the labour revenue product function is convex). Analogous to this is the case of a firm having several plants. Skaksen and Sorensen (2001), again using a partial equilibrium framework, show that if workers are complimentary then they may gain from FDI. In contrast, if workers are substitutes in two countries then workers lose from FDI. Firm mobility can improve the bargaining position of firms when a constant demand for labour is assumed, but it is important to understand the effect of firm mobility on wages and unemployment in general equilibrium. This paper addresses the question, what is the effect of increased firm mobility on wages and unemployment?

Although market size is the most important determinant of where multinational enterprises (MNEs) locate, labour market institutions have a significant impact on firm location (Bognanno et al., 2005). Despite MNEs advantage in bargaining, it is a stylised fact that MNEs pay higher wages (Conyon et al., 2002). However, controlling for plant size and education greatly reduces the foreign ownership wage premium (Lipsey and Sjoholm, 2004; Heyman et al., 2007). Girma and Gorg (2007) suggest that where multinationals pay more, it is due to higher productivity. Controlling for firm and individual characteristics, Braun (2009) finds that the trade union wage premium actually disappears

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[1] Derek Simpson, speaking on the proposed merger of the UK's UNITE union and the US based USW. [online http://www.amicustheunion.org/default.aspx?page=6359 accessed 4/6/08].

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in foreign firms. Using German data Braun and Scheffel (2007) estimate the effect of outsourcing on the union wage premium. They find that the wage premium is smaller for the low skilled in sectors affected by outsourcing while the wages of those not covered by collective agreements are unaffected. This supports the hypothesis that, ceteris paribus, multinational firms pay lower wages due to their advantage in bargaining.

In this paper, we present a new mechanism for how globalisation can affect labour markets. The model extends the new trade model of Markusen and Venables (1998) by including labour market frictions and union bargaining. In the presence of union bargaining firms have an incentive to hire workers abroad in order to improve their outside option during bargaining, increasing the demand for labour. This effect has been ignored in the partial equilibrium literature (see Gaston and Nelson, 2002), where labour demand is typically constant. In addition, in the presence of frictional labour markets there is a possibility for the increased demand for labour to lead to both lower unemployment and higher wages.

The intuition for how the bargaining advantage of MNEs can lead to higher wages is as follows. In a two-country economy with a good sector characterised by Cournot competition; where there are no transport costs or labour market friction; firms pay workers their marginal product; and there are no plant fixed costs; firms are indifferent whether they operate as national firms or as MNEs. By extending the model to include a cost of transporting the good internationally and fixed costs in establishing a plant, each firm faces a trade-off between operating as a national firm (and thereby incurring the cost of transporting the good internationally), or operating as a MNE (and incurring the fixed cost of having an additional plant abroad). Extending the model further to include labour market frictions and plant level wage bargaining (in which workers are represented by a union), creates an extra incentive for a firm to operate as a MNE. Firms are motivated to become MNEs to reduce the outside option of workers in the wage bargain.

The general equilibrium effects of hiring extra workers to affect the wage bargain were examined before, in a setting of individual rather than union bargaining over wages. In a model in which labour is the only factor, Krause and Lubik (2007) show that accounting for intra-firm bargaining increases wages by about 20% and decreases the number of unemployed workers by approximately 15%. In an unpublished version of a paper Cahuc et al. (2008) show that where both labour and capital are present accounting for intra-firm bargaining raises wages by about 20% and the number of unemployed workers decreases by 12%, if capital is held constant.

The strategic hiring incentive is important as an increased demand for labour increases labour market tightness. This improves the value of unemployment (which is the outside option for workers) by making it easier for unemployed workers to find a job, and decreases the outside option for firms by making it more difficult for firms to fill a vacancy. In addition, as there is a competitively traded good sector which uses a specific resource, drawing labour into the Cournot sector increases the resource/labour ratio in the competitive sector and increases wages in the competitive sector. This can increase wages in the Cournot sector as if wages are higher in the competitive sector; the value of unemployment increases for workers. This improves the value of alternative employment. Both the effect on the resource/labour ratio and the increase in labour market tightness serve to increase the bargaining position of workers. Counter-intuitively, the availability of an outside option to MNEs may actually raise wages for all workers.

There have been relatively few general equilibrium models incorporating labour market matching frictions and MNEs. Dutt et al. (2007) look at off-shoring and unemployment but ignore strategic hiring effects. In an extension of the Melitz (2003) model, Helpman et al. (2004) look at the choice faced by firms between exporting and establishing a foreign plant. Only the most productive firms open a foreign plant as they face a cost of entry. Eckel and Egger (2009) look at the effect of multinationals on wage bargaining and find that firm mobility leads to a rise in wages. Their model also extends that of Melitz (2003) to include MNEs, whereby MNEs may locate abroad due to the potential to save money in the wage bargain. However, there are no labour market matching frictions, and firms simply choose the number of workers so their marginal return equal wages. Wages rise due to MNEs having higher productivity, but they largely ignore unemployment.

The paper is organised as follows. In Section 2, we present the model and outline the equilibrium. Section 3 outlines details of the equilibrium and calibration. In Section 4, we present the results of the numerical analysis. Section 5 concludes.

2. The model

The model is an extension of the "new trade" model of Markusen and Venables (1998) by including labour market frictions, bargained wages, and discreet time. There are two countries, a home country h and a foreign country f, and two homogeneous goods, X and Y. The Y sector good is traded competitively and the X sector is characterised by Cournot competition. Countries are endowed with a continuum of two factors, labour (L), and resources (R). Firms use labour in production in both sectors and resources are only used in the competitively traded sector. It is useful to think of Y as a competitively traded product which uses the resource land. A star is used to denote variables located in country f. So, R is the resource endowment of country h and R^* is the resource endowment of country f. We only present equations for one country to avoid duplication.

Though labour is mobile between sectors, it is immobile between countries. The competitively traded good sector firms are small and produce in only one country (though they may sell their product in either country). In contrast, firms in the Cournot good sector may operate as national firms, which produce in only one country, or as MNEs and have production plants in both countries.

The competitively traded good is traded internationally without any cost of transportation. There is a cost to transport the Cournot good internationally. A firm in the Cournot sector can either operate as a national firm which has a plant in only one country (and which may export abroad), or as a multinational enterprise (MNE), which has a headquarters in its home country but a manufacturing plant in both countries. It is possible for national firms and MNEs to coexist. As with the model of Markusen and Venables (1998), costs (with the exception of vacancy posting costs, ϕ, which were not present in the model of Markusen and Venables (1998)) are measured in terms of labour used. As in Markusen and Venables (1998), the utility of the representative consumer is given by $U = X_c^{\delta} Y_c^{1-\delta}$, where Y_c is the amount of the competitively traded good consumed in the country, X_c is the total amount of the Cournot good consumed in the home country, and δ is the elasticity of substitution between good X and Y.

The budget constraint, that national income equals national expenditure, is given by

$$\Upsilon = P(X_c)X_c + P(Y_c)Y_c, \tag{1}$$

where $P(X_c)$ is the price of the Cournot good in the home country, $P(Y_c)$ is the price of the competitively traded good, and Υ is the national income of the home country. By maximising utility subject to the budget constraint, the product demands are

$$X_c = \frac{\delta \Upsilon}{P(X_c)}, Y_c = \frac{(1-\delta)\Upsilon}{P(Y_c)} \tag{2}$$

The indirect demand equations for X_c and Y_c are given by

$$P(X_c) = \frac{\delta \Upsilon}{X_c}, \; P(Y_c) = \frac{(1-\delta)\Upsilon}{Y_c}.$$