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**Integration, FDI and Labour Markets:  
Microeconomic Perspectives**

*By N. Gaston and D. Nelson*

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## **Integration, FDI and Labour Markets: Microeconomic Perspectives**

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### **Abstract**

Foreign direct investment (FDI) has grown far more rapidly than trade during the last two decades. As with the other prominent features of globalisation, FDI is controversial. The impact of FDI on labour markets has been of growing concern, particularly, for source countries. The deterioration of labour market conditions for unskilled workers in many OECD countries during the 1980's and 1990's was a primary catalyst for the concern. As for its impact on labour markets, FDI may have effects that, at least in the short- and medium-run, may well dwarf the effects of trade and immigration. In this paper, we review the economic theories and econometric evidence which purport to explain various aspects of the impact of FDI on labour markets. The emphasis is on two partial equilibrium models which, respectively, focus on the location decisions of multinationals and the impact of global firms on collective bargaining outcomes.

### **Outline**

1. Introduction
2. The Effects of FDI and Multinational Corporations - Theory
3. The Effects of FDI and Multinational Corporations - The Empirical Realities
4. Some Concluding Thoughts

### **Non-Technical Summary**

Foreign direct investment (FDI) grew far more rapidly than trade in the last two decades of the last century. As with the other prominent features of globalisation, FDI is controversial. The impact of FDI on labour markets has been a growing concern, particularly, for source countries. The deterioration of labour market conditions for unskilled workers in many OECD countries during the 1980's and early 1990's was a primary catalyst for the concern. As for its impact on labour markets, FDI may have effects that, at least in the short- and medium-run, dwarf the effects of trade and immigration. Unfortunately, the empirical effects of FDI on labour markets are difficult to measure. The analysis of FDI has all the same problems that plague attempts to relate trade flows to labour market effects. For example, whether FDI is initiated by high production costs at home and attracted by abundant unskilled labour and relatively low labour costs abroad or whether it actually contributes to income inequality at home and abroad is difficult to resolve empirically. The study of FDI also involves additional difficulties. For instance, FDI generally involves changes in competitive conditions in commodity markets as well as endowment effects. In addition, as we explain below, there may be fundamental changes to labour market institutions and the way in which wages and employment are determined. Conventional models of FDI treat multinational corporations as firms with some, often unspecified, kind of competitive advantage that permit them to enter and prosper in foreign markets. A point that we emphasise below is that the growing global nature of firms, manifested itself in part by the changing competitive nature of product and factor markets, is also likely to have significant labour market effects.

In this paper, we review the economic theories and econometric evidence that purports to explain various aspects of the impact of FDI on labour markets. The emphasis is on two partial equilibrium models that, respectively, focus on the location decisions of multinationals and the impact of global firms on collective bargaining outcomes. Overall, in assessing the recent research, the most sensible conclusion that can be drawn is that the evidence is mixed. On the one hand, the 'direct' impact of FDI on domestic wage and employment outcomes for most countries appears to be quite small. The evidence supporting outsourcing to low-wage locations is also far from conclusive. However, multinational activity does seem to be associated with a greater use of more skilled workers in larger, capital-intensive plants. In this sense, unlike the immigration of labour, FDI could have played some role in the widening

wage gap that became evident and so topical in the last few decades. In addition, the behaviour of multinational corporations appears to be very much affected by unions and industrial relations environments both at home and abroad. Moreover, it seems reasonable to conjecture that labour market institutions have evolved in response to the rise of the modern multinational enterprise.

## I. Introduction

Foreign direct investment (FDI) grew far more rapidly than trade in the last two decades of the last century (e.g., see Lawrence, 1996). As with the other prominent features of globalisation, FDI is controversial. The impact of FDI on labour markets has been a growing concern, particularly, for source countries. The deterioration of labour market conditions for unskilled workers in many OECD countries during the 1980's and early 1990's was a primary catalyst for the concern.<sup>1</sup> As for its impact on labour markets, FDI may have effects that, at least in the short- and medium-run, dwarf the effects of trade and immigration. Gaston and Nelson (2001) argue that the effects of trade liberalisation on labour markets is felt primarily in the short run and in the sectors of developed economies with labour market imperfections. As for the impact of immigration, Gaston and Nelson (2000) conclude that the most reasonable conclusion to draw is that the actual impact on developed country labour markets has been negligible. On the other hand, in both papers the authors argue that it may be the case that both freer trade and immigration engender institutional responses that do leave some types of labour more vulnerable to economic shocks than others. Along with more 'traditional' themes, we explore the relevance of this argument in connection with the impact of FDI below.

Unfortunately, the empirical effects of FDI on labour markets are difficult to measure. The analysis of FDI has all the same problems that plague attempts to relate trade flows to labour market effects. For example, whether FDI is initiated by high production costs at home and attracted by abundant unskilled labour and relatively low labour costs abroad or whether it actually contributes to income inequality at home and abroad is difficult to resolve empirically. The study of FDI also involves additional difficulties. For instance, FDI generally involves changes in competitive conditions in commodity markets as well as endowment effects. In addition, as we explain below, there may be fundamental changes to labour market institutions

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<sup>1</sup> Gaston and Nelson (2001) argued that an obvious reason for the intensity of interest in issues dealing with the distribution of earnings is that the apparent increases in earnings inequality were not offset by higher average earnings. The bottom deciles of the income distribution were not 'dragged up', in fact there were absolute declines in earnings at the bottom of the earnings distribution (most notably for the United States and United Kingdom). Also, countries with higher cross-sectional earnings inequality did not generally have greater relative earnings mobility. The latter point suggests a non-trivial degree of permanence to the changing structure of the distribution of earnings. Apparently, it is not a simple matter of young, inexperienced, and poorly-paid workers accumulating more human capital as they age moving steadily up the rungs of the earnings pecking order. The factors operating at the extremes of the earnings distribution also appeared to be very different.

and the way in which wages and employment are determined. Conventional models of FDI treat multinational corporations as firms with some, often unspecified, kind of competitive advantage that permit them to enter and prosper in foreign markets. A point that we emphasise below is that the growing global nature of firms, manifested itself in part by the changing competitive nature of product and factor markets, is also likely to have significant labour market effects.

The usual motivation for research on FDI or multinational firms and labour market effects is relatively straightforward. The most prominent concern for source countries, relates to whether multinational corporations *outsource* certain parts of their productive activity to lower labour cost locations. Firms 'delocalising' is often allied to a concern that increasing import penetration and immigration, particularly from low-wage countries, has adverse labour market consequences for domestic unskilled workers. Such views seem to dominate the more traditional concerns about the 'hollowing out' of manufacturing industries (although the latter concerns are still prominent in Japan).<sup>2</sup> For host countries, even apart from issues to do with national sovereignty or cultural identity, the concerns are often no less controversial. For example, one concern relates to the 'race to the bottom' for countries competing for direct investment. Another issue directly related to the topic at hand, is whether multinationals, due to their relatively greater demand for skilled workers, could exacerbate earned income inequality. There are more subtle concerns, as well. For example, in some countries, the union movement has drawn attention to the 'footloose' nature of mobile capital and the possibility that foreign investors may be less willing to invest in worker training and human capital than are domestic capitalists who 'live in the community'.

As for a direct labour market linkage with FDI, note that if a feature of multinational behaviour is the exploitation of wage differentials across countries then this behaviour could have effects which may be observationally equivalent to shifts caused by skill-biased technological change

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<sup>2</sup> In fact, Bhagwati (1999) notes the ironic 'about face' in policy-making circles concerning the impact of globalisation on labour markets in the last 20 or so years of the twentieth century. Post-WW2 concerns about neo-colonialism and the dependency of developing countries on developed countries, raised questions for the poorer countries about the desirability of increased integration and trade. This view has been supplanted, almost completely, by developing country enthusiasm for trade and inwards foreign investment. The reservations are now expressed by many wealthy countries, which worry about the perils for their domestic workers if integration via trade, migration or investment in developing countries continues apace.

(see Slaughter, 2000; Lawrence, 1996; Markusen and Venables, 1997). Rapid technological advancement has for many commentators been the leading candidate as the explanation for the increased earnings inequality experienced by many advanced and developing countries during the 1980's and early 1990's (see Baldwin, 1995; or alternatively, Gaston and Nelson, 2001 for a less sanguine view). An intra-industry shift in labour demand towards relatively more skilled and/or more highly-educated workers would increase the skilled wage premium across all industries. Associated with this feature is the concern, for both source and host economies, that FDI may aggravate earned income inequality. The lay view is that outward FDI or capital outflows may exert downward pressure on the wages of domestic production workers. Implicit in this view is the characterisation of multinational corporations as being predominantly vertical in nature. That is, Krugman's inexorable 'slicing up of the value added chain' involves relocating unskilled labour-intensive parts of the production process to unskilled labour abundant countries. As we discuss below, FDI may, in fact, constitute a plausible explanation for the relative increases in skilled labour demand, in both host and source countries, and therefore would have effects indistinguishable from those of skill-biased technical change on relative wages.<sup>3</sup>

In the next section, we briefly review the economic theories that can explain some or several aspects of the impact of FDI on labour markets. Our review of the theories of trade economists is relatively brief, reflecting part, the excellent treatments elsewhere (e.g., Caves, 1996). Our main focus is on partial equilibrium models that focus on the activities of the multinational corporation itself. In section III, we review existing empirical work on FDI and labour market outcomes. Section IV concludes.

## **II. The Effects of FDI and Multinational Corporations - Theory**

There are essentially two broad types of models that investigate the relationship between FDI and labour markets – general equilibrium or trade models and partial equilibrium or labour and firm-theoretic models. In addition, trade models are of two basic types – competitive models (e.g. the HOS model) and the 'new' trade or industrial organisation models. Both broad approaches have their advantages, depending on the precise questions posed. For example, the

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<sup>3</sup> Some of the 'new' trade models also attempt to explicitly capture this feature (e.g., Feenstra and Hanson, 1996a, 1996b, 1997; Flam and Helpman, 1987).



general equilibrium framework is particularly useful when dealing with questions about the inter-relationship between trade and direct investment. That is, issues dealing with production for export versus production for local sales. Understandably, the trade approach is most helpful for guiding our thinking and understanding of the macroeconomics and broad determinants of FDI.

The partial equilibrium or micro-analytic approach is particularly valuable for understanding what it is that multinational firms 'do'; how they are structured; how they operate; their impact on competitive conditions in *particular* industries or markets, and so on. Centre stage is the multinational corporation itself. For present purposes, the partial approach is best suited for understanding how multinational corporations not only directly affect wage and employment determination at the microeconomic level, but also for studying the impact on industrial relations, the 'stance' taken by labour and capital in collective bargains and the pressure on labour market institutions to adjust. Thus, in the discussion below, we distinguish between the direct and indirect labour market impacts of FDI and multinational behaviour.

### *2.1 Traditional trade theory.*

The theory of comparative advantage suggests that the basis for trade lies in differences in economic structure. Thus, trade should be greatest between countries that are economically *dissimilar*. Trade should also cause a country to export goods in which it has a comparative advantage in producing and to import those goods that are 'different' from what it produces and exports.

In the Heckscher-Ohlin-Samuelson (HOS) 2 x 2 model, a country specialises in producing the good requiring relatively more of the factor in which they are relatively well-endowed. For example, the capital abundant country specialises in production of the capital-intensive good. Trade for this country will induce a fall in the wage-rental ratio as the capital-intensive sector expands (the Stolper-Samuelson theorem). Thus, the real reward of the country's abundant factor rises. In turn, this leads to factor price convergence for the two countries.

However, in recent economic history, trade liberalisation, such as that which occurred with European integration, has generally been followed, for most countries, by an increase in both imports and exports across most sectors, rather than by an increase in specialisation. In fact,

trade with developed -- roughly similar -- countries dwarfs trade between developed countries as a group and less developed countries. World trade and overseas investment has come to be dominated by the intra-industry exchange of manufactures and FDI between a relatively select subset of similar countries.<sup>4</sup> We return to this point below.

International investment can be viewed as a transfer of part of one country's endowment to its trading partner. Hence, international investment should also be stimulated by differences in factor endowments. These different endowments create differences in factor rewards. Further, international trade and international investment should be negatively correlated. This follows from the Rybczynski theorem; i.e., with factor movements, countries' endowments become more alike, which eliminates the basis for trade. Alternatively, with commodity trade leading to factor price convergence, the incentive for factor mobility diminishes. In a sense, the predicted relationship of substitution between exports and FDI forms the basis for the fear of outsourcing. That is, multinational firms are perceived as having the choice of producing locally and exporting or servicing an overseas market by producing more there (and thereby cutting down on the costs associated with trade).

As with the overwhelming significance of intra-industry trade between developed countries, international investment takes place largely between developed countries as well. Such facts have led Ethier (1994b, p.108), in considering the ability of conventional theory to accommodate direct investment and the multinational firm, to conclude that "*This is easy: The core of traditional theory simply has nothing to say.*" While the firm is a central agent in the theory, its size and extent -- including its extension across national borders -- is indeterminate. The conventional theory rules out economies of scale and imperfect competition, which are both prominent features of the markets in which multinationals operate.

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<sup>4</sup> Baldwin and Martin (1999) describe the distinct characteristics of the 'two waves of globalisation'. The first wave of globalisation (pre-WWI), which generated rapid economic development for First World countries, was characterised by rapid industrialisation and FDI flowing mainly from developed countries to developing countries. In contrast, the second wave of globalisation (since 1960), that generated rapid income growth for so many OECD developed countries, has generally been characterised by a process of deindustrialisation and a global FDI pattern that is quite similar to the world trade pattern. Moreover, the industries in which there is a lot of intra-industry trade between developed countries also tend to be the industries in which there is a great deal of intra-industry FDI for the same set of countries.

## 2.2 *The 'new' trade models.*

Trade economists interested in understanding FDI have directed much of their recent energy to developing the 'new' trade/industrial organisation models. At least since Hymer's (1960) dissertation, it has been clear that the arbitrage model of international factor mobility lacks something essential. Specifically, to the extent that doing business in another country entails a variety of costs not borne by local firms, multinational firms were thought to possess some form of competitive advantage to permit them to function profitably in foreign markets.<sup>5</sup> Where early developments, including Hymer's own work, emphasised essentially monopolistic elements, more recent work has stressed oligopolistic and monopolistically competitive elements. Building on work in the Coase (1937)-Arrow (1964)-Williamson (1975) tradition, a number of international business researchers began to develop a model of the international firm built on internalisation considerations.<sup>6</sup>

All of this early work was based on partial equilibrium reasoning. After all, the central concern of this literature was to account for the existence of multinationals, an essentially partial equilibrium (i.e., firm-level) question. When it comes to linking FDI to macroeconomic and economy-wide labour market facts, like increasing wage inequality, the partial equilibrium framework tends to take a back seat to general equilibrium reasoning.<sup>7</sup> The earliest attempts to build general equilibrium models incorporating insights from the market structure and firm-theoretic approaches motivate the use of a specific-factors model in terms of essentially unspecified firm-specific advantages. The basic structure involves two countries, each with a standard specific-factors model, in which one of the specific factors is internationally mobile (though still intersectorally immobile).<sup>8</sup> In essence, these are firm-specific capital arbitrage models, but they have the virtue of a simple structure, which is well-motivated by firm-theoretic concerns, and yields a variety clear comparative statics depending on the exact

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<sup>5</sup> These themes were initially developed by Kindleberger (1969) and Caves (1971).

<sup>6</sup> Rugman (1981), Hennart (1982) and Casson (1987) are examples of the first generation of this literature. Dunning's (1981) work has a strong element of the firm-theoretic approach.

<sup>7</sup> The study of firm-union relations, of course, is a central issue that is best studied in a partial equilibrium setting. For examples of partial equilibrium models of firm-union bargaining applied to the analysis of multinational firms, see Carmichael (1992) and Bughin and Vannini (1995). Zhao (1998) has an analysis of this sort in a general equilibrium setting.

structure of the model. In its most basic form, a small country, 3-factor H 2-good model, with both final goods traded, labour intersectorally mobile and capital internationally mobile, an inflow of capital will raise the return to labour and lower the return to both capitals (the internationally mobile and the internationally immobile varieties). With one of the sectors non-traded, Burgess (1978) shows that such an inflow can reduce the real return to labour.

A more substantial step toward integrating Hymer's essential insight into a general equilibrium framework was taken in early work by Helpman (1984, 1985), Markusen (1984) and Ethier (1986). These papers defined an important agenda for theoretical research which is continuing to generate important results. Following a standard practice in this literature, it is useful to distinguish between horizontal and vertical multinational firms. Horizontal firms produce the same product in many markets, while vertical firms engage in different activities in different markets. In either case, as with the earlier international business literature, the task is to explain the existence of a single firm with economic activity (of some kind) in more than one country rather than 'arms-length' contracting between firms.

The general equilibrium analysis of economies with vertical multinationals was pioneered by Helpman (1984), who considered firms with home office activities that could be separated from production. In Markusen (1984), the existence of a joint input, for which there is no arms-length market, explains the existence of multinational production in a sector characterised by oligopolistic interaction in a number of national markets.<sup>9</sup> Where the models of both Helpman and Markusen focus on the choice between exporting and FDI as the mode of market service, Ethier (1986) develops a general equilibrium analysis of an economy in which firms must choose between FDI and licensing. The great majority of this work is primarily

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<sup>8</sup> This is suggested by Caves (1971) and implemented in, among others, Amano (1977), Batra and Ramachandran (1980), Burgess (1978), Falvey (1979) and Jones *et al.* (1983). Jones and Dei (1983) provide an useful graphical framework.

<sup>9</sup> The empirical implications of investment by either vertical or horizontal multinational enterprises are provided by Markusen and Maskus (1999). If FDI is primarily vertical in nature, differences in countries' factor endowments should be apparent, i.e., there should be no vertical firms in identical countries. Strictly speaking, vertical firms should have no firm-level scale economies, although a single-plant firm may geographically separate its headquarters and plant. In contrast, horizontal multinationals may exist in similar countries, but there must be positive trade costs. Further, there should be firm-level as well as plant-level scale economies and firm-level fixed costs, plant-level fixed costs and the marginal costs of production should all use factors in the same proportion. Finally, the headquarters of an horizontal multinational will be in the country with the larger domestic market and that with factor price advantages. Helpman (1985) develops a model with both horizontal and vertical

concerned with characterising the patterns of trade and production that emerge in economies characterised by FDI.

Markusen and Venables (1997, 1998) directly address labour market issues.<sup>10</sup> Like HOS models, the Markusen-Venables model is a 2 factor x 2 good x 2 country model. One sector,  $S_1$ , is characterised by competitive firms producing under constant returns to scale, while the other sector,  $S_2$ , produces homogeneous goods under a more complex production structure involving both firm-level and plant-level fixed costs. In this environment, four types of firm can emerge, where type denotes headquarters location and number of plants. That is, a national firm produces entirely in a given country and serves foreign markets by exports and a multinational firm produces in both countries. Since each type can be headquartered in the Home and Foreign countries, there are four types. The firms engage in Cournot competition. Thinking of the two factors as skilled and unskilled labour, the authors show, among a variety of things: that investment liberalisation raises the real wage of skilled labour and the wage ratio in the skilled-labour abundant country; and falling trade costs tend to put downward pressure on the wage of skilled labour.<sup>11</sup> The basic punch-line, of course, is that *if* multinational corporations use relatively more skilled labour than ‘national’ firms, then the skilled wage premium increases with greater investment liberalisation. Not surprisingly, given the complexity of the model, which must be solved computationally to get results, a variety of outcomes are possible under different values of the parameters of the model.

In recent years it has become increasingly clear that globalisation of production extends far beyond foreign direct investment (Feenstra, 1998). This has resulted in both theoretical and empirical work on what is variously referred to as outsourcing, production fragmentation, production sharing, and slicing up the value chain, among others.<sup>12</sup> One body of work uses a

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activities in the same firm. Markusen *et al.* (1996) and Markusen (1997) develop a framework that nests models with vertical, horizontal and ‘mixed’ firms. See also, Brainard (1993).

<sup>10</sup> Also see Brecher and Choudhri (1996) for an explicit analysis of the income distribution effects of FDI in a model of vertical FDI based on that in Helpman and Krugman (1985, chapter 12).

<sup>11</sup> The results are crucially based on the assumption that the input ratios of skilled to unskilled labour are such that:

$$\begin{aligned} &[\text{firm-level fixed costs}] > [\text{plant-level fixed costs}] > [\text{integrated } S_2 \text{ production}] \\ &> [\text{branch-plant } S_2 \text{ production}] > [S_1 \text{ production}] > [\text{multinational production}] \\ &> [\text{national firms, at common output scale}]. \end{aligned}$$

<sup>12</sup> For attempts to measure the magnitudes of this trade, see: Campa and Goldberg (1997); Hummels, Rapoport, and Yi (1998); Hummels, Ishii, and Yi (2001) and Yeats (2001).

standard competitive general equilibrium approach to study the macroeconomic implications of this phenomenon. Unlike the work we have considered to this point, the effect of production fragmentation is to transform the aggregate production structure. Beginning with Jones and Kierzkowski (1990), a number of papers consider a technology that implicitly contains two separable sub-production functions (“production blocks” in the terminology of Jones and Kierzkowski):<sup>13</sup>

$$y = F(K, L) = f(g^1(K, L), g^2(K, L)). \quad (1.1)$$

Following an unmodelled change in the production technology, it becomes possible to fragment the technology into its two components.<sup>14</sup> When this occurs, the dimensionality of the model changes and, even if the change does not economize on the input of factors, the opportunity to take advantage of international differences in factor-prices can make fragmentation economically beneficial (Deardorff 1997, 2001). However, in this sort of environment, fragmentation will generally have an effect on relative factor payments. Unfortunately, since these effects will depend on the relationship between the relative factor intensities of the industries and the relative endowments of the trading countries, it is not possible to give a general direction of effect. Nonetheless, sizable increases in the degree of fragmentation/outsourcing will generally have labour market effects, and it is a matter of some interest whether the nature of these effects matches the direction of changes in relative wages that have been observed in recent years.

An alternative approach to the study of outsourcing focuses on the firm-theoretic foundations of outsourcing and the effects on aggregate labour market outcomes. Where the competitive general equilibrium models treat fragmentation as a comparative static, these models derive the degree of outsourcing in the context of one or another model of division labour. Dluhosch (2000, chapter 4), Burda and Dluhosch (2000), and Francois and Nelson (2000) model monopolistic competition between firms that make a choice of how extensively they will divide their production process. As in the Smith-Young notion of division of labour generally, the larger is the market in which firms compete, the more roundabout the production process

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<sup>13</sup> Among the main theoretical papers here are: Arndt (1997, 1998, 1999, 2001); Deardorff (1997, 2001); Dehijia (1992); Jones and Kierzkowski (1990, 1998, 2000, 2001); Kohler (2001a,b); and Venables (1999).

can be, and hence the greater the efficiency. However, the more roundabout the production process, the more skilled/managerial labour that must be hired. The rising cost of managing the division of labour must be weighed against the gains from more efficient production. In all of these cases, in addition to the monopolistically competitive sector, there is a competitive good and fixed resources, so the setup is a full general equilibrium. As a result, these papers are able to solve for labour market effects of globalisation in a straightforward way. Globalisation, defined in various ways, permits a more extensive division of labour, and increased efficiency. This creates a demand for skilled labour and generates an increase in the skill premium.

### *2.3 Partial equilibrium models of multinational enterprise and labour markets -- location perspectives.*

The ‘new’ trade models were developed by trade economists in order to enhance our understanding of the decision to produce locally and trade as opposed to FDI and overseas production. Within this framework, the ever-present issue of what constitutes the boundaries of the firm complicates the implications for both domestic and foreign labour market outcomes. With the exception of the work by Markusen and Venables, and the literature on outsourcing, there are few papers using a general equilibrium approach that directly deal with the impact of FDI on the wages and employment of various types of labour or the distribution of earned incomes. In addition, there are few papers in this particular branch of the literature that develop and estimate econometric models of labour market outcomes. This is not a criticism per se, simply an observation. After all, as Ethier (1994b, p.117) notes, the focus of the ‘new’ trade literature has been to understand why multinational firms should even exist at all in the face of costs of operating across national borders as well as why global firms choose the ‘supply mode’ that they do. In this sense, they have made considerable progress in achieving their purpose.

A far simpler methodology, generally adopted by labour economists, to study the direct impact of foreign-owned firms on labour markets proceeds by taking the existence of multinational corporations for granted. This approach is well-suited to providing a theoretical framework for

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<sup>14</sup> Jones and Kierzkowski interpret this change as a reduction in the cost of production services. They take these services to be produced under increasing returns to scale and to affect through the division of labour they permit. They do not, however, enter the production function directly.

empirical work. For example, when interested in wages or employment patterns it enables the researcher to focus on questions such as “*What does foreign ownership do?*”. In this subsection, we discuss a simple framework that provides a model of firm location. The model, which is very much in the spirit of Rosen’s (1969) hedonic pricing model, is able to identify the likely determinants of location and delocation decisions. Consequently, simple predictions about skilled and unskilled labour demand can be made. It has ready application to the effects of economic integration, capital market imperfections and international labour standards.

We ignore the thorny issue of ownership altogether and leave the discussion of internalisation to the next major subsection.<sup>15</sup> The following model focuses on location decisions alone. In particular, the focus is upon where firms locate themselves depending on the policy stance taken by different national policy-makers. Thus, among the main issues highlighted is the way in which policy settings interact with the ‘footloose’ nature of capital in a global economy and how this affects the demand for less-skilled labour in both the source and host countries.

### *2.3.1 Policy-maker and/or community preferences.*

For simplicity, rather than a continuum of locations, we consider just two locations, which we label North and South. The application of the following to more than two locations is transparent. The economic and social structures as well as the level of endowments are assumed to differ substantially between the two regions. The regions could be two distinct countries or even two states within the same country, although we do assume that, for the time period under consideration, that only skilled labour and capital are mobile across localities.

First, consider panel (i) of Figure 1. On the horizontal axis we represent by  $X$  a variable such as unskilled labour or ‘sweatshop’ labour. The analysis is easily generalised to examine child labour, lack of worker rights, pollution and so on. For purely expository purposes, we refer to  $X$  as sweatshop labour. The use of greater amounts of  $X$  is assumed to be profitable for all firms, but is considered undesirable by the policy-maker or by local community standards in both regions.

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<sup>15</sup> Dunning’s (1981) ‘eclectic theory’ involves three major determinants of FDI decisions -- location, ownership and internalisation.



On the vertical or  $Y$ -axis is the sum of the price of capital (human + physical),  $r_i$ ,  $i = S, N$ , and the price of sweatshop labour,  $w_i^u + t_i$ ,  $i = S, N$ , say. That is, the price of  $X$  is the sum of the wage, which we normalise to zero, plus  $t_i > 0$ , which is the policy-maker's instrument. The latter could be a tax on the employer engaging in the socially undesirable activity or, when  $X$  is unskilled labour, it could be a minimum wage, for example. In the first instance, we shall assume that  $r_N < r_S$ , which means that the cost per unit of capital is lower in the North. The difference can be taken to reflect a capital market imperfection or a country- or region-specific risk factor. The importance of this assumption is to ensure that production in both countries will be profitable for different values of  $t$  for some firms.<sup>16</sup>

Consider point  $a$  in panel (i). We assume that due to endowments, level of economic development, political or social preferences or demands for tax revenue that the North is relatively less tolerant of sweatshop labour than the South. Hence, for any given increase in  $X$ , the North would need to be 'compensated' with more tax revenue than the South. Thus, at point  $a$ , the iso-utility frontier for the South has a flatter slope than that for the North. The point, of course, is simply that the marginal social cost of increased use of  $X$  is lower in the South. More preferred iso-utility contours lie to the 'north-west', for both regions' policy-makers. (Note that the welfare comparisons for each region are defined for a given  $r_i$ .) The lower scalloped boundary therefore represents the  $X$ - $Y$  combinations available to all firms. We now turn to consider how firms locate themselves along this policy 'frontier'.

### 2.3.2 Firm preferences and/or iso-profit contours.

While there is a continuum of firms, in the diagrams we depict just two representative firms, which are labelled  $A$  and  $B$ . Consider point  $b$  in panel (i). We assume that all firms would find it profitable to employ greater amounts of  $X$ , for their given levels of physical and human capital. Also, stricter standards, more regulations or higher taxes,  $t$ , are assumed to unambiguously lower profits. However, firms differ in the technologies or production techniques that they possess. Specifically, we assume that firm  $A$  would require less 'tax relief' to lower its use of  $X$  by one unit than would firm  $B$ . Accordingly, firm  $A$ 's iso-profit

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<sup>16</sup> The analysis is a short-run one, so that we take as given the amount of capital used in production by firms. Since the price per unit of capital is lower in the North, firms choosing to operate there will be more physical and human capital-intensive.

contours are flatter than are firm  $B$ 's at any given point. More preferred iso-profit contours lie to the 'south-east' for both firms.

### 2.3.3 *Sorting behaviour and firm location in equilibrium.*

In panel (i), we depict a situation in which firm  $A$  initially locates in the North and firm  $B$  initially locates in South. Firm  $A$  optimally uses less sweatshop labour than firm  $B$ . (Implicit in the diagram is that  $t_N > t_S$ , even though  $r_N + t_N < r_S + t_S$ .) Hence, the firm possessing a technology less reliant on  $X$  will locate in the higher labour standards country. Cross-sectionally, i.e., at a point in time, firms that use more skilled labour or firms finding it easier to comply with strict labour standards locate in the North. Firms with technologies that rely on cheap, unskilled labour locate in the South.

### 2.3.4 *Comparative static 1: Higher labour standards in the North and 'runaway plants'.*

See panel (ii). Consider a legally binding and higher standard imposed on the Northern firms. A higher minimum wage is a good example. An important assumption is that the 'tax' is not simply shifted backwards onto workers in the form of lower wages, we therefore assume that the higher standard unambiguously increases operating costs for firms located in the North.<sup>17</sup> Notice that for a small increase in  $t_N$ , that firm  $A$ 's profits fall. However, for a sufficiently large policy shock, firm  $A$  may actually find it worthwhile to move from the North to the South. The important points to note here are:

- a. What causes delocation is a *substantial* policy shock. Note also that location decisions are related to both source and destination country labour market policies. Hence, a problem that needs to be addressed by econometric studies that look for outsourcing, pollution haven or race-to-the-bottom effects is that they have to identify a *natural experiment* involving a sufficiently large policy shock. In the absence of these large policy shocks, outsourcing is unlikely to occur and is difficult to identify. At a point in time, the location of firms is not only determined by policy-maker preferences, but just as critically by differences in firm technology;

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<sup>17</sup> That is, higher labour standards may have little impact on the cost of production for firms, and therefore not lead to delocalisation (see Ehrenberg, 1994). However, there is a cost in the form of lower take-home pay for the workers benefitting from the more stringent regulations.

- b. The ‘movers’ could be plants, of course, and hence this example provides one explanation for multinational activities. The movers use more unskilled labour than they did when located in the North, although they use less than their domestic counterparts. *Ipsa facto*, movers will probably not relocate to the most  $X$ -intensive industries nor the industries with the very lowest labour standards.<sup>18</sup> Delocation or outsourcing by Northern firms increases the relative demand for skilled labour in the South. The firms that outsource are those that are most vulnerable to increased stringency of the already higher Northern standards and are those that are relatively more heavily reliant on  $X$ . Overall, the relative demand for skilled labour increases in the North as well as the South. Consequently, the Northern firms that relocate to the South are likely to have higher average compensation and wages than the firms that were initially located in the South;
- c. Note that movers’ profits fall, but so too do the profits of Northern non-movers. In the long-run, non-movers will substitute away from using the relatively more expensive  $X$ . However, presumably community welfare is increased by the higher standard.

### 2.3.5 Comparative static 2: ‘Race to the Bottom’.

See panel (iii). Competition for FDI is keen and has provoked fears among some commentators that there will be lowering social standards. The manifestation of such competition could be strategic reductions of tax rates, a topic well studied in the fiscal competition and regional science literature, or lower ‘social’ wages and labour standards. To illustrate, consider a reduction in  $t_N$ , i.e., a lower marginal cost of using  $X$  in the North. Graphically, North’s policy frontier flattens and becomes more like the South’s, i.e., the marginal cost of greater  $X$  usage falls. In the extreme, this may induce relocation of firm  $B$  to the North. Hence,

- d. Naturally, many of the effects are simply opposite to those discussed in connected with the previous comparative static exercise. For instance, note that firm  $B$ , the ‘mover’, is still reliant on relatively less skilled labour than incumbent Northern firms. The mover

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<sup>18</sup> The fact that after relocation that movers are relatively more reliant on skilled labour than their new domestic counterparts is a prominent feature in the papers by Feenstra and Hanson (1996a, 1996b) as well.

uses less unskilled labour than it did when located in South, but uses more than its domestic counterparts. Ipso facto, movers will probably not locate to the Northern industries with the very highest labour standards;

- e. The profits of all firms rise, the movers as well as the incumbent Northern firms. Firm *A*, due to the flattening of the policy frontier, will start using relatively less skilled workers. In both the North and South, there will be a structural shift towards greater demand for less-skilled workers. A consequence is that a ‘race to the bottom’ should contribute to *reduced* wage dispersion.

### 2.3.6 Comparative static 3: Harmonisation of labour standards.

See panel (iv). Now consider a threshold level of *X* usage that is imposed internationally (e.g., ILO Core Labour Standard on child labour). In the extreme, this may induce relocation of firm *B* to the North, with the analysis akin to that for the previous example (i.e., panel (iii) above). Suppose instead that firm *B* finds it profitable to stay in the South. The pertinent points are:

- f. Firm *B*’s unambiguously profits fall, although the welfare of the policy-maker or community in the South is unchanged. This finding seems to contradict claims that labour standards are a ‘backdoor’ form of protection that deny developing nations of what it is that they do most efficiently (such arguments are prominently made by Malaysia’s Mahatir Mohammed, for instance). However, note that if the South ‘compensates’ firm *B* to restore its original profit level, Mohammed’s claims are correct;
- g. Notwithstanding, firm *B* now uses relatively more skilled labour. Obviously, the labour standard lowers the relative demand for unskilled labour in the South and increases the dispersion of the income distribution there.

### 2.3.7 Comparative static 4: Increasing capital market perfection.

See panel (v). Now consider a fall in  $r_S$  (i.e., converging towards  $r_N$ ). Strictly speaking, this is not a shift in policy. There is a parallel downward shift of South’s policy frontier (assuming that the policy-maker doesn’t increase  $t_S$ ). There are two possibilities.

- h. Whether firm  $A$  relocates or not, firm  $B$ 's profits rise. In the short run, firm  $B$  may or may not use more unskilled labour; after all, there has *not* been a reduction in the marginal cost of using  $X$ . In the long-run, firm  $B$  is likely to substitute more capital for  $X$ ;
- i. If firm  $A$  does relocate, its profits rise (as depicted). Firm  $A$  will use more unskilled labour in both the short- and long-run. The marginal cost of using  $X$  is lower in the South, and unless convergence is complete,  $r_S$  still exceeds  $r_N$ .

Consider the importance of some of the assumptions underlying the analysis. First, if all firms share the same technology, their iso-profit curves become more similar and naturally they will locate in just one country (except in the 'knife edge' case). As above, domestic firms and multinational firms have different labour demands, even when operating in the same region or industry. However, technological spillovers may make firms more alike over time (as in Driffield and Taylor, 2000).

There are also complicating general equilibrium factors to be considered, particularly when making statements about welfare and the gainers and losers from policy interventions. As noted above, welfare for each region is defined in terms of the levels of  $X$  and  $t$ , given  $r$ . Also, the 'welfare' contours represent policy-maker or community preferences that exclude the welfare of the firms. As mentioned at the outset, we ignore the complex issue of ownership in the model. In addition, we abstract from general equilibrium effects, e.g., imposing higher labour standards is assumed to unambiguously harm the firms subject to the higher standards, but what is not modelled is the benefit the firms not covered by the standards gain from reduced rivalry in the product market.

We summarise this section by outlining some of the empirical lessons to be learned from the model. The most obvious point is that if firms locate from the North to the South, there is likely to be an increase in the demand for skilled labour in both countries. Consequently, the income distribution becomes less equal in both countries. Next, a 'race to the bottom' is likely to be associated with exactly the opposite empirical effects. Third, within the confines of the model, labour standards are a form of protection that is likely to lower the welfare of Southern firms, and paradoxically, lead to a more unequal distribution of income. Lastly, growing

economic integration or globalisation may be thought to be a combination of the last two comparative static experiments that were considered above. Under a standard, there is an unambiguous reduction in the use of  $X$  in the South. With capital market integration, or falling  $r_S$ , we get the ‘Feenstra-Hanson’ effect, i.e., with the relative use of  $X$  declining in both regions. Overall, while the possibility exists that firms moving from the North start using relatively more unskilled labour, the combination of effects is more likely to bias the demand for labour away from unskilled labour. Integration, as the public fears, may therefore exacerbate income inequality between skilled and unskilled labour. This is the issue then.

#### *2.4 Partial equilibrium models of multinational enterprise and labour markets -- bargaining perspectives.*

We now turn our attention to what may be best termed the indirect effects on wages caused by investment liberalisation and increased multinational activity. Much of the ‘new’ trade literature is devoted to understanding the growth and formation of multinationals. It addresses, with varying degrees of success, the ownership, location and internalisation motives for FDI. For example, why ownership and control is important; why and where multinationals locate abroad; and why activities need to take place within the boundaries of the firm (particularly, when sub-contracting or licensing are obvious alternatives). In his survey of multinationals and trade, Markusen (1995) points out that the *internalisation* motive is the most abstract and has been the most difficult to rationalise. Fortunately, labour market and bargaining models may provide some insight into why firms choose FDI over licensing activities or arm’s length contracting. More specifically, investing overseas, which may entail substantial investment in plant and equipment, provides a credible threat to outsource employment; licensing in all likelihood will not. Simply put, such investments may shift the threat point in bargaining games with unions in favour of the employers. In addition, strategic considerations involving unions in developed countries are consistent with two-way FDI within the same industry – which is a prominent feature of modern FDI.

As mentioned previously, labour economists usually take the existence of FDI and global firms as their point of departure when examining labour market effects. A typical inquiry is how the existence of production facilities overseas may affect the domestic wage and employment bargains struck between global firms and organised workers. There has been a proliferation of

theoretical models dealing with every possible bargaining scenario. For example, bargaining could be between a national employers' association and a large national union, a single firm dealing with multiple unions, a single union dealing with many firms and so on.<sup>19</sup> In addition, an important distinction is usually drawn between horizontally-integrated global firms (or 'cross-hauling' FDI) versus vertically-integrated global firms ('slicing up the value-added chain'). The union's and firm's welfare not only depend crucially on the structure of bargaining, but also the type of firm integration under consideration.

Notwithstanding, there are two basic issues. One is whether a global firm can credibly move production facilities to alternative locations if it does not receive bargaining concessions from the unions they deal with. The second is whether any union can potentially 'hold-up' a vertically-integrated firm or whether workers will be pressured to reduce wages by dint of the increased competition from workers at foreign affiliates and outsourcing threats. In the latter case, it may seem obvious that unions can be played off against one another, but it depends crucially on whether the workers in separate unions (or 'bargaining units') are complements or substitutes for one another (Horn and Wolinsky, 1988; Dowrick, 1993). If the two groups of workers are complements (substitutes) in production, then both groups can do better by bargaining separately (jointly).

#### *2.4.1 Bargaining with an outsourcing threat.*

To examine the more common public concern of runaway firms and wage effects we outline a simple bargaining model. Consider an industry in which there are no strategic interactions between firms. A critical assumption is that the industry market structure generates rents that are shared between firms and domestic unions. We focus on the impact of a more globalised economy and the ability of the firm to outsource employment overseas, rather than the impact of globalisation on product market rents.

#### *2.4.2 Wage and employment bargains.*

Attention is focused on a representative firm facing a union. The firm's profits are given by  $\pi(w, l; p) = R(l, p) - wl$ , where  $R(l, p)$  is the revenue function when employment is  $l$  and  $w$  is the wage. Higher values of  $p$  are associated with higher total and marginal revenue, i.e.,

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<sup>19</sup> Ulph and Ulph (1990) provide an accessible survey of the structure of union bargaining.

$R_p > 0$  and  $R_{lp} > 0$ . Hence, higher  $p$  unambiguously indexes good times. Further, we assume that  $R_l > 0$  and  $R_{ll} < 0$ .

The firm bargains with the union over wage-employment contracts,  $(w, l)$ . We assume that bargaining over wages and employment is efficient and that the choice from the set of efficient contracts is the one that maximises the symmetric Nash product, i.e.,

$$S(w, l) = [U(w, l; \bar{w}) - \bar{U}] [\pi(w, l; p) - \bar{\pi}] \quad (2.1)$$

where  $U(\cdot)$  is the union's utility function and  $\bar{w}$  denotes the reservation alternative for workers. Differences in bargaining power are incorporated into the disagreement point,  $(\bar{\pi}, \bar{U})$ , which is discussed further below.

We assume that the Nash solution lies in the interior of the choice set and that  $S$  is strictly concave so that the solution is unique and may be characterised by the following first-order conditions. We suppress arguments where no ambiguity exists and use subscripts to denote partial derivatives.

$$S_w(\cdot) = U_w \Delta^{-1} - \pi_w \Pi^{-1} = 0 \quad (2.2)$$

$$S_l(\cdot) = U_l \Delta^{-1} - \pi_l \Pi^{-1} = 0 \quad (2.3)$$

where  $\Pi = [\pi(w, l; p) - \bar{\pi}]$  and  $\Delta = [U(w, l; \bar{w}) - \bar{U}]$ , the economic rent for firms and employed workers, respectively. Substituting (2.2) into (2.3), gives the equation for the contract curve, which equates the slope of the union's indifference curve and the firm's iso-profit curve,

$$-\frac{U_l}{U_w} = -\frac{\pi_l}{\pi_w} \quad (2.4)$$

Further headway is made by investigating the implications of some commonly-considered functional forms for union preferences. Consider the popular specification used by McDonald and Solow (1981). Here the union comprises  $m$  workers, each endowed with one unit of labour time. Prior to actual wage and employment negotiations, a worker's expected utility is given by



$$EU = \frac{l}{m}U(w) + \frac{(m-l)}{m}U(\bar{w}), \quad (2.5)$$

where  $U(\cdot)$  is increasing and concave,  $w$  is the wage rate if employed and the reservation alternative, or benefit when unemployed, is denoted by  $\bar{w}$ . Alternatively, ignoring the issue of union membership, the union is assumed to maximise

$$EU(w, l) = lU(w) + (1-l)U(\bar{w}), \quad (2.6)$$

where  $l$  is normalised to denote the probability of employment.<sup>20</sup> The union's disagreement payoff is  $\bar{U} = U(\bar{w})$ .

Equation (2.4) yields the set of efficient contracts

$$\frac{U(w) - U(\bar{w})}{U_w} = w - R_l \quad (2.7)$$

With union risk neutrality,  $R_l = \bar{w}$  so that labour is hired until its marginal revenue product equals the reservation wage.

It is straightforward to conduct comparative statics on equations (2.2), and (2.3). For complete transparency, Proposition 1 summarises the results for the risk-neutral union case.<sup>21</sup> The exogenous variables are the price, the reservation wage and the firm's disagreement outcome.

**Proposition 1** (*Risk neutral union*)

- a)  $w = w(p, \bar{w}, \bar{\pi})$ :  $w_p$  has indeterminate sign,  $w_{\bar{w}} > 0$  and  $w_{\bar{\pi}} < 0$ ;
- b)  $l = l(p, \bar{w}, \bar{\pi})$ :  $l_p > 0$ ,  $l_r < 0$  and  $l_{\bar{\pi}} = 0$ ;
- c)  $\pi = \pi(p, \bar{w}, \bar{\pi})$ :  $\pi_p > 0$ ,  $\pi_{\bar{w}} < 0$  and  $\pi_{\bar{\pi}} > 0$ ;
- d)  $U = U(p, \bar{w}, \bar{\pi})$ :  $U_p > 0$ ,  $U_{\bar{w}} > 0$  and  $U_{\bar{\pi}} < 0$ .

**Proof:** See Appendix.

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<sup>20</sup> A union representing workers is assumed to treat its employed and unemployed members equally. Workers are homogeneous and all face the same risk of unemployment, i.e.,  $(1 - l)$ .

<sup>21</sup> See Gaston and Trefler (1995) for the risk averse case. Risk aversion, however, is not central for the following argument.

There are no surprises here. The impact on wages of higher reservation wages shifts the threat point in the union's favour, raising their total welfare. The impact of higher product prices is to raise employment. The wage indeterminacy with respect to higher product prices is well-known and is explored in detail by Gaston and Trefler (1995). However, note that higher prices unambiguously benefit both the union and firm.

Most importantly, Proposition 1 also states that the domestic union is adversely affected by a higher value of the firm's disagreement outcome. Mezzetti and Dinopoulos (1991) interpret  $\bar{\pi}$  as the value of the option to switch production abroad. That is,  $\bar{\pi}$  varies positively with a credible outsourcing alternative for the firm.<sup>22</sup> It is likely to be a credible threat in the case of a multinational enterprise because of the lack of co-ordination between domestic and foreign unions or workers. As Caves (1996, p.125) notes, multinational enterprises enjoy 'bargaining ploys' that national firms do not possess.

The ability to outsource shifts the domestic collective bargaining outcome in favour of the firm. That is, when it bargains with a domestic union, the firm can threaten to close the domestic plant and switch production to the foreign country. During any dispute, the domestic firm supplies the market from abroad. The threat point of the firm is therefore its reservation profit when its production facilities are moved off-shore.<sup>23</sup>

The industrial relations benefits of 'going global' for firms seem particularly obvious when they integrate horizontally rather than vertically (see Mezzetti and Dinopoulos, 1991; Zhao, 1995, 1998). However, these are similar to the tensions associated with vertically-integrated firms. While it may pay for unions to band together to push up the wage bargain (see Davidson, 1988; Dowrick, 1989, 1993), it is not always possible for unions to credibly increase their threat payoff. Naturally, it is difficult for unions to integrate across national boundaries (see Caves, 1996). But, of course, from the global firm's point of view, this is precisely the

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<sup>22</sup> It is helpful to think of  $\bar{\pi}$  as being inversely related to barriers or restrictions to FDI. FDI liberalisation is therefore associated with a higher  $\bar{\pi}$ . As in Mezzetti and Dinopoulos (1991), we focus on the case in which the firm produces in the home country in equilibrium, despite its option to shift production abroad. The analysis is easily extended to the case in which the firm produces both at home and overseas.

<sup>23</sup> Presumably, if foreign and domestic workers are equally productive and the foreign wage is less than the domestic wage (due to the absence of unions in the foreign country), there are some additional fixed costs of moving overseas or taxes on overseas production, otherwise production would never occur at home. In the location model, discussed in the previous section, it is a lower cost of capital.

point. On the other hand, it may be that economic integration, in areas such as the EU, may facilitate the co-ordination of national union movements.

The issues are far from clear-cut for overseas investment. While multinational firms may find it beneficial to make capital investments in production facilities overseas to tilt the bargaining outcome in their favour, Grout (1984) shows that firms may *under*-invest in capital in order to avoid expropriation by strong unions. On the other hand, Ulph (1989) shows that unions may be better off by weakening their bargaining position, so that firms increase their investment so that, although getting a smaller slice, the larger pie more than compensates. However, Ulph shows that firms may *over*-invest in capital in order to make credible a threat to use other workers. Gaston (2001) argues that the union movement's compliance with the decentralisation of collective bargaining is an optimal response by unions to the growing global nature of the firms that employ their members.<sup>24</sup> He shows that unions prefer a more wage-oriented bargaining posture if their members are faced with a greater outsourcing threat. Accordingly, his model is able to rationalise the empirically small effects of outsourcing on wages, as well as the increase in wage inequality.

### **III. The effects of FDI and multinational corporations -- the empirical realities**

#### *3.1 The broad determinants of FDI:*

The decision to invest overseas reflects a number of diverse factors. Graham and Krugman (1993) note that the most fundamental determinants of FDI relate to complex issues to do with the optimal boundaries of the firm. The scale and location of production, the best means of serving foreign markets – whether by domestic or foreign production, the means by which investment is financed and the perceived need to develop facilities that promote and support overseas sales are all related issues.

The most obvious point to note is that more than 80 percent of FDI is directed to industrialised countries (see Graham and Krugman, 1991; Markusen, 1995). Furthermore, the top ten exporters of direct investment capital accounted for more than 90 percent of the world total in the period 1989 to 1993; while the top ten recipients accounted for more than 75 percent of

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<sup>24</sup> Enderwick (1985) shows that the presence of multinational firms in Europe accelerated the trend towards more decentralised collective bargaining.

reported inflows. But six of the top ten exporters were also among the top ten recipients. In addition, the exporter group has been extremely stable over time (see World Bank, 1997; Lipsey, 2000a). These facts suggest that the substitution of low-wage labour in developing countries for domestic unskilled labour is unlikely to be an empirically important factor behind FDI growth.<sup>25</sup> Foreign ownership has characteristically been heavily concentrated in manufacturing (Lipsey, 1994b). However, since the early 1990's it has been increasingly directed towards tertiary industries, such as finance and real estate. The latter trend, if anything, tends to reinforce the developed country-developed country feature of patterns of FDI.

A key element behind the decision to invest overseas is the relationship between trade flows and foreign production. Trade theory inspired models of the multinational firm view exports and FDI as substitutes. However, the relationship between FDI and exports has been increasingly moot. For example, Graham and Krugman (1993) argue that, for some industries, foreign investment is likely to be complementary with trade. Baldwin (1990) suggests that 'downstream services' are typically associated with the level of export sales from the source country to the host country. Some of these facilities can be set up by locals, although source country involvement may be beneficial. In particular, new products require specific skills and knowledge so that effective maintenance and support can be provided. The parent company may also find quality supervision more effective if it directly controls the network. The resolution of whether exports and FDI are substitutes or complements still needs to be resolved empirically.<sup>26</sup>

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<sup>25</sup> Until recently, it is difficult to see how any other conclusion could have been reached. Multinationals employ about 70 million workers world-wide, about three-quarters of whom are employed in their home countries. In addition, the remainder were predominantly employed in industrialised countries. FDI is a "*First World business directed largely at First World locations*", in 1990, the United States, Canada, Germany, the United Kingdom, the Netherlands, France, Italy, Switzerland and Japan were the source of more than 90 percent of the world's outwards stock of FDI and the host to more than two-thirds of the inwards stock. The quotation and figures are from Renshaw (1993). See also Lawrence (1996), Chapter 5. The recent surge of FDI into China may warrant some moderation of this view.

<sup>26</sup> However, using product-level data for the automotive industry, Blonigen (2001) finds evidence of both substitutability and complementarity. Specifically, location of Japanese auto parts production in the United States substitutes for Japanese production of auto parts at home. Further, increased Japanese automobile production in the United States increases Japanese exports of auto parts to the United States.

In terms of direct impacts on developed country labour markets, Lawrence (1996) argues that the evidence for a large globalisation effect, via either increased trade or capital flows, is fairly weak. In particular, from a trade-theoretic viewpoint it should be expected that if outsourcing unskilled jobs to developing countries is empirically important, that the skilled wage premium should rise in the developed countries and fall in the developing countries. Associated with this should be falls in the proportion of skilled workers employed in developed countries. This has simply not happened. Lawrence (1996), like a number of other trade economists, has opted for the skill-biased technological change explanation for the increased wage inequality experienced in a number of countries – both developed and developing – since the early 1980's. In his opinion, the evidence for unfavourable direct labour impacts is fairly scant. When viewed through the trade economists' lens, this conclusion seems inescapable. However, recall that a rising skilled wage premium in the developed countries and developing countries is consistent with the predictions of the 'new' trade and partial equilibrium models, as well as traditional competitive models with multiple cones of diversification and/or production fragmentation, outlined in section II.

### *3.2 Location decisions.*

With the caveat that much of the evidence is for the United States, on the basis of the current literature, we draw the following conclusions about industry location.

#### *3.2.1 FDI is horizontal.*

FDI is concentrated in industries in which U.S. direct investment abroad is highest. That is, FDI is industry-specific. This argues against the vertical slicing up view of FDI and multinationals (Katz and Murphy, 1992; Krugman, 1995). FDI is generally horizontal in nature, designed with explicit competition-affecting or strategic considerations in mind (Lipsey, 1994a,b; Markusen, 1995; Brainard, 1997; Markusen and Maskus, 1999b). There is also some stability in this feature of FDI. For instance, Lipsey (2000b) shows that inward and outward investment flows go together, across countries and through time. For the United States, the outward and inward movements of FDI practically offset each other – even at the industry level.

### *3.2.2 Relative labour costs matter, but not directly.*

FDI is largely directed towards high-wage and high skill-intensity industries. An interesting caveat is that foreign-owned establishments tend to locate in lower-wage U.S. states (Lipsey, 1994b). This is possibly due to Right to Work laws and the low rates of unionisation in those states. Wheeler and Mody (1992) present evidence supporting the importance of differential labour costs in multinational locational preferences. Further, Cooke (1997) shows that the FDI decisions of U.S. firms are negatively related to the presence of high levels of union penetration, centralised collective bargaining structures, unfavourable industrial relations environments and governmental restrictions on layoffs. Of course, these empirical findings support the view that global firms are attracted by favourable expected unit labour cost differences. However, the possibility of union hold-up and rent-sharing is one explanation for the relatively higher wages paid by multinationals relative to domestic employers.

### *3.2.3 The transfer of ownership may be more important than location, per se.*

Feliciano and Lipsey (1999) show that between 1987 and 1993, 95 percent of employment in new FDI was in acquired enterprises. Lipsey (2000b) argues that if location were of primary importance, FDI should flow from industries in which a country has a comparative disadvantage. If technological advantages of firms in source country were of primary importance, then FDI should take place in the industries of that country's comparative advantages. The latter reflects change of ownership rather than location of industry. FDI is *not* about relocating production from places of comparative disadvantage. Transfer is most likely from less efficient owners to more efficient owners. The industrial organisation literature on corporate takeovers and mergers is what is relevant. The majority of FDI by foreign firms in the United States has been via mergers and acquisitions and not 'greenfield' investments that necessarily involve new capital expenditures. The effects on firm performance of different of corporate ownership and governance structures are seriously studied in the financial economics discipline, but the importance of different types of ownership is still very much uncharted territory for both 'new' trade and labour economists.

### 3.3 Outsourcing.

Where the early literature on the income distribution effects of FDI took an aggregate approach, contemporary empirical research, like the theoretical research we have just discussed, has begun to incorporate firm-theoretic considerations in research design.<sup>27</sup> One straightforward approach to this question is to examine the simple relationship between employment in the parent and foreign production. This is precisely what Brainard and Riker (1997) do. Their key finding for U.S. multinationals is that, while there is evidence of substitution between labour at home and labour abroad, the substitution is far greater between affiliates in countries at similar levels of development.<sup>28</sup>

Blomström *et al.* (1997) use firm-level data from U.S. and Swedish multinationals, finding a negative relationship for U.S. multinationals in a number of specifications, but a robust positive relationship for Swedish firms.<sup>29</sup> The authors conclude that, where U.S. multinationals have outsourced a considerable amount of their labour-intensive manufacturing to developing countries, Swedish multinationals do most of their manufacturing in other industrial countries where increased production leads to increased blue collar employment in the national market. In addition, Blomström and Kokko (2000) identify large changes in Swedish employment, with an astonishing 80 percent of jobs disappearing each year from Swedish multinationals, but an almost equivalent number being created via acquisitions of new plants. Interestingly, the jobs lost in Swedish plants paid higher wages than the jobs that were created, with the implication that it may be higher-skill jobs that are being outsourced.

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<sup>27</sup> Important early work on the United States, taking a theoretically well-grounded approach, includes Horst (1978) and Frank and Freeman (1978a, 1978b). Throughout the 1980s, as part of a general concern with globalisation and deindustrialisation a number of high visibility studies analysed the linkage between FDI and labour market outcomes in industrial countries, see, for example, Fröbel *et al.* (1980); Tolchin and Tolchin (1988); and Glickman and Woodward (1989).

<sup>28</sup> Braconier and Ekholm (1999) carry out a similar analysis using data on Swedish multinationals, but find a more complementary relationship between FDI and home employment. Driffield (1999) and Paul and Siegel (2000) study the effect of FDI on U.K. employment. Bruno and Falzoni (2000) extend the production function methodology to consider short-run fixed factors and, with respect to U.S. firms with affiliates in Canada and Latin America, finding that: in the short-run home and foreign employment are substitutes; but that, in the long-run, they are complements. The authors argue that their results support the existence of a vertical division of labour reflecting factor-endowment differences.

<sup>29</sup> Similar work, focusing on U.S. multinationals can be found in Blomström and Goldberg (2000), Feliciano and Lipsey (1999), Kravis and Lipsey (1988) and Lipsey (1994, 1995, 1999).

However, the support for the view that U.S. multinationals outsource employment to non-OECD countries is relatively weak (see Baldwin, 1995). In fact, domestic industry employment and overseas affiliate employment may be complements (Slaughter, 2000; Lawrence, 1994; Riker and Brainard, 1997), i.e., when employment shifting takes place, it does so between offshore affiliates in LDC's. Hence, the effect is not substitution between workers at foreign affiliates and domestic workers, but substitution between other low-wage locations (Brainard and Riker, 1997). Employment at affiliates is also very wage sensitive (see also Kravis *et al.* 1982; Brainard and Riker, 1997; Riker and Brainard, 1997). However, Riker and Brainard (1997) show that the cross wage elasticity of labour demand is negative! That is, U.S.-owned multinationals do not export jobs. In addition, U.S. total manufacturing employment shrank 10 percent between 1979 and 1989, and total overseas affiliate employment shrank 14 percent (see Lawrence, 1994; Slaughter, 2000). Once again, this implies that domestic and foreign affiliate employment are not negatively correlated.<sup>30</sup>

Working with a model of product differentiation, Feenstra and Hanson (1996a,b; 1997) argue that FDI has increased the relative demand (and therefore, wages) for skilled workers in both the North and the South. The North produces ever increasingly high quality goods, reducing the demand for unskilled workers. However, as the relatively unskilled activities (from the North's perspective) head South, the demand for skilled labour in the South increases (since the activities are relatively skilled from the South's perspective). Hence, it is possible for FDI to have effects on labour markets similar to the effects implied by skill-biased technological change. Feenstra *et al.* (2000), use production under the Offshore Assembly Provision of the U.S. tariff as a direct measure of outsourcing, finding that outsourced production is intensive in unskilled labour, relative to production in the United States. Furthermore, they find that outsourcing responds positively to relative cost of production in the United States. These results seem broadly consistent with the notion that outsourcing reduces relative demand for unskilled labour.<sup>31</sup>

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<sup>30</sup> There is indirect evidence that marginal differences in operating costs are unlikely to drive 'delocalisation' decisions. For example, Wheeler and Mody (1992) indicate that tax avoidance is rarely a motive. Also, there appears to be little evidence to support the "pollution haven" hypothesis, i.e., firms locating their "dirty" operations in developing countries with low labour costs and slack environmental standards (see, e.g., Eskeland and Harrison, 1997).

<sup>31</sup> Other research on the link between FDI, outsourcing, and wages includes: Anderton and Brenton (1999) for the United Kingdom; Hatzius (2000) and Slaughter (2000) for the United States; Blomström and Kokko (2000)



Overall, caution is best exercised in jumping to the conclusion that the exploitation of labour cost differentials is an unimportant consideration for overseas direct investment. Cross-country studies of the determinants FDI find mixed evidence that labour costs matter. In particular, confirmatory or negative findings are sensitive to regression specification. For example, Farrell *et al.* (2001) show that, in a parsimonious regression specification, Japanese FDI responds significantly to labour cost differentials. However, when country fixed effects are allowed for, the effect becomes insignificant. One interpretation of the findings is that FDI is attracted to relatively lower labour costs; but that such cost advantages are highly correlated with country effects, such as low rates of unionisation of a potential host country's labour force or 'favourable' industrial relations laws (as suggested by Cooke, 1997, for instance).

#### *3.4 Empirical (direct) wage effects.*

First, on the wages front, average compensation per worker is generally higher in foreign-owned than in domestically-owned establishments (Lipse, 1994b). Figlio and Blonigen (1999) show that FDI location decisions are affected by incentives awarded by local governments and that the expenditure incurred in attracting foreign investment seems to be much higher than that for attracting domestic investment. However, they show that the addition of an average-sized new foreign (domestic) manufacturing firm is associated with a 2.3 percent (0.3 percent) increase in real wages for all workers.

It is reasonably clear that the wage premium paid by multinationals is largely due to their larger size. Lipsey *et al.* (1982) argue that the high wages in U.S. multinationals are associated with high capital-labour ratios. Empirically, the wage differential attributable to working for a multinational firm is strongly associated with the firm's size. In fact, controlling for firm size, there is *no* effect of foreign ownership on wages (Lipse, 1994b). However, the effect of foreign ownership does not disappear for non-manufacturing industries (Feliciano and Lipsey, 1999). Figlio and Blonigen (1999) note significant economic differences between foreign-owned and domestically-owned establishments. Similarly, Globerman *et al.* (1994) show that foreign affiliates are larger, more capital intensive and pay higher wages. Overall, multinationals have different types of labour demand than do their domestic counterparts. For

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for Sweden; and Head and Ries (2000) for Japan. Another area of concern has been the effect of inward investment on relative wages. For work on this topic see: Blonigen and Slaughter (2000) for the United States;

instance, Feenstra and Hanson note that the foreign affiliates of global firms are more likely to rely on imported intermediate inputs than are domestically-owned firms.

Why larger firms pay higher wages is one of the most long-standing, yet largely unresolved, issues in labour economics. Specifically, how can larger firms stay competitive if their labour costs are higher? The size wage premium is empirically and economically large, e.g., it is comparable in magnitude to the unconditional gender wage gap. Not surprisingly, there has been a proliferation of theories and explanations (see Oi and Idson, 1999 for a recent survey). Prominent among these, for present purposes, is that large firms have more productive employees and that the higher wages reflect rent-sharing with large organisations, that tend to be more profitable. In the former case, this reflects the fact that larger firms have more capital, tend to adopt new technologies faster and therefore demand more skilled workers. In the latter case, larger firms are likely to have greater market power and profits, which when faced with organised workers plunge us into the economics of bilateral monopoly and bargaining models. The only safe conclusion seems to be that jobs at small firms are different from the jobs at large firms. The organisation of work and the observed, as well as unobserved, characteristics of workers are what determine the size wage premium.

Some authors have argued that the fact that the impact of multinational firms on the host country's wage structure is negligible, once size is controlled for, implies that there is no impact on wages attributable to multinational enterprises (e.g., Caves, 1996). We would argue that this reasoning is faulty. The point is that the majority of multinationals are large firms with economies of scale, operating in imperfectly competitive product markets. Controlling for size, therefore biases the wage impact of multinationals towards zero. It is the wrong conceptual experiment.

Aitken *et al.* (1996) show a ten percent margin in favour of foreign-owned plants for both wages and labour productivity. Further, whether the presence of foreign firms raises wages at domestic firms, i.e., wage spillovers, is mixed (Lipsey, 1994b; Aitken *et al.*, 1996; Feliciano and Lipsey, 1999). One explanation for the wage effect is that when domestic firms are taken over by foreign firms, average compensation rises and total employment falls, which suggests

that low paid and low productivity employees are sloughed off. Driffield and Taylor (2000) show that the beneficial impact of inward FDI in terms of higher real wages may be offset by increases wage inequality. This occurs because multinationals rely more heavily on skilled labour and induce copy-cat behaviour by domestic firms. Thus there are two factors which serve to increase income inequality: increased demand for skilled workers in an industry or region; and technology spillovers from foreign to domestic firms.<sup>32</sup> The latter feature aggravates wage inequality, because domestic firms start skill-upgrading. This finding contrasts with Globerman *et al.* (1994) who conclude that there is a zero correlation between foreign affiliate activity and skill upgrading.

Thus, while the higher wage paid by multinationals is largely attributable to productivity differences, they also have quite different factor demands than do domestic firms in the same industry. Of course, this point should be evident from the model of location sketched above.

### *3.5 Indirect labour market effects.*

Of the three strands of globalisation -- trade in goods and services, labour migration, and flows of capital -- it is the latter which is most likely to have associated with it both direct and indirect impacts on the labour market. Specifically, increased globalisation may initiate changes to the labour market institutions, such as collective bargaining practices, that have historically served to bolster the position of less-skilled workers in the economy. For example, Bluestone and Harrison (1982, p.170) argue that “... *large corporations ... can build, expand, or acquire facilities outside the [United States] altogether. In fact, all the strategic innovations devised by multiplant companies for playing off one group of workers against another ... have become standard operating procedure in the global economy.*”

Lindbeck and Snower (1996) show that in the age of the new global firm, which stresses multi-tasking activities by employees, that centralised wage bargaining is inefficient. Efficiency dictates the switch to less-centralised forms of wage bargaining and a greater reliance on individual employment contracts.<sup>33</sup> Greater reliance on market-based contracts and

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<sup>32</sup> As usual, some authors find exactly the opposite. Blonigen and Slaughter (1999) show that Japanese ‘greenfield’ investment lowered relative demand for skilled labour. The latter type of investment is less likely to replicate the same type of relative factor usage.

<sup>33</sup> Freeman and Gibbons (1995) provide a model of the breakdown of centralised bargaining, which they apply to the case of Sweden. They attribute the decline in Sweden’s peak-level wage bargaining system to wages drift

movements away from centralised wage bargaining would by themselves, increase the dispersion of labour market earnings.<sup>34</sup> Some recent evidence consistent with this line of argument is presented by Haskel *et al.* (1997) who show that increasing labour market flexibility in the United Kingdom has resulted in labour input being more closely aligned to the business cycle.

Some authors have explicitly linked increased international competition and trade as a reason for a move towards more decentralised wage bargaining. For example, Marginson and Sisson (1988) note that British multinational corporations have been less likely to engage in multi-employer bargaining (see also Katz, 1993 and Ehrenberg, 1994).<sup>35</sup> Katz (1993, p.16) argues that the “... *increasing prevalence of multinational trade and multinational firms may ... help to explain the declines in multi-employer bargaining that have occurred in a number of countries.*”<sup>36</sup> Driffield and Taylor (2000) note, for instance, the insistence by Japanese corporations operating in the United Kingdom on single union deals. Standing (1997) argues that international trends towards increased labour market flexibility and deunionisation have been propelled by globalisation. In fact, the ‘erosion’ of labour security has been “*fuelled by the international division of labour*” (p.12).

#### **IV. Some concluding thoughts**

Overall, in assessing the recent research, the most sensible conclusion that can be drawn is that the evidence is mixed. On the one hand, the ‘direct’ impact of FDI on domestic wage and employment outcomes for most countries appears to be quite small. The evidence supporting

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and the increasing need for flexibility. In turn, these latter features were affected by economic forces, that increased the dispersion of wages for Sweden’s increasingly heterogeneous work-force, as well as falling inflation, which increased wage discipline.

<sup>34</sup> In a similar vein, some authors have pointed to the growth of profit-sharing plans and contingent-pay schemes as being a potentially significant factor behind the growing wage inequality witnessed in the United States during the 1980’s (see Bell and Neumark, 1991; Ehrenberg and Smith, 1994). With the increasing prevalence of such pay schemes, volatility in output and income implies greater dispersion in the distribution of earned income. A possible reason for the proliferation of these more flexible forms of employee compensation and the reduced reliance on ‘pattern bargaining’ is globalisation. (See the discussants’ comments after the Bell and Neumark, 1991 article.)

<sup>35</sup> Edwards and Podgursky (1986, p.46) argue that “[u]nions now find themselves negotiating with increasingly centralised corporations at an increasingly decentralised level”.

<sup>36</sup> Katz lists Sweden, Australia, the former West Germany, Italy, the United Kingdom, and the United States as having bargaining structures that have to varying degrees experienced decentralisation of their collective bargaining structures. At the beginning of the 1980’s, Sweden and Australia had “extremely centralised” collective bargaining.

outsourcing to low-wage locations is also far from conclusive. However, multinational activity does seem to be associated with a greater use of more skilled workers in larger, capital-intensive plants. In this sense, unlike the immigration of labour, FDI could have played some role in the widening wage gap that became evident and so topical in the last few decades.

In addition, the behaviour of multinational corporations appears to be very much affected by unions and industrial relations environments both at home and abroad. Moreover, it seems reasonable to conjecture that labour market institutions have evolved in response to the rise of the modern multinational enterprise. For example, at the microeconomic level there have been different schemes for compensating workers and changes in collective bargaining practices. Specifically, there has been a move towards more firm-level and efficiency-based bargaining. At the macroeconomic level, we have witnessed both decentralisation of wage and employment determination as well as deunionisation in many OECD countries. This could be euphemistically termed an *Americanisation* of wage and employment determination practices. One consequence is that, empirically-speaking, we should *not* expect to find dramatic negative effects on workers, particularly, those workers with substantial bargaining power. Skilled workers and well-organised union workers, in fact, are almost assuredly better off in the new global environment. Moreover, multinational firms in developed countries are likely to be concentrated in oligopolistic, high rent industries -- precisely the industries in which organised workers have the most to gain. However, it does seem clear that the less-skilled, weakly unionised or non-unionised workers are at greater risk in the new global environment. In turn, this may stimulate policy-makers to respond by regulating and reforming rules for investment in their countries<sup>37</sup>.

An alternative policy response may take the form of increasing generosity of welfare schemes that equalise the post-tax and transfer distribution of income. For example, it has been observed that despite increases in the dispersion of earned incomes that, in some countries at least, inequality in post-transfer and post-tax income inequality has *not* grown (e.g., Gottschalk and Smeeding, 1997; Aaberge *et al.*, 2000). This suggests that political pressures have been

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<sup>37</sup> Blomström *et al.* (2000) conclude their study of the impact of inward FDI for Japan by noting the existence of various pressures for fundamental structural changes. Among these are the pressure for the Japanese labour markets to become increasingly flexible. As for regulatory reform, they argue that there will be convergence to the industry policies of other advanced nations.

brought to bear on the generosity of public transfers at a time when earned incomes have become more unequally distributed. From a political economic perspective, the growing inequality of income could be associated with strong compositional effects on the demand for public insurance. For example, the growing size and economic significance of sectors of the economy that pay higher wages for certain types of workers, could result in political pressures that lead to higher levels of transfer payments to disadvantaged workers.<sup>38</sup>

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<sup>38</sup> Some authors have argued that more generous unemployment benefits and changes to cash transfer and income tax systems have arisen to ensure worker acquiescence to potentially disruptive microeconomic reforms, such as trade and investment liberalisation (e.g., Rodrik, 1998).

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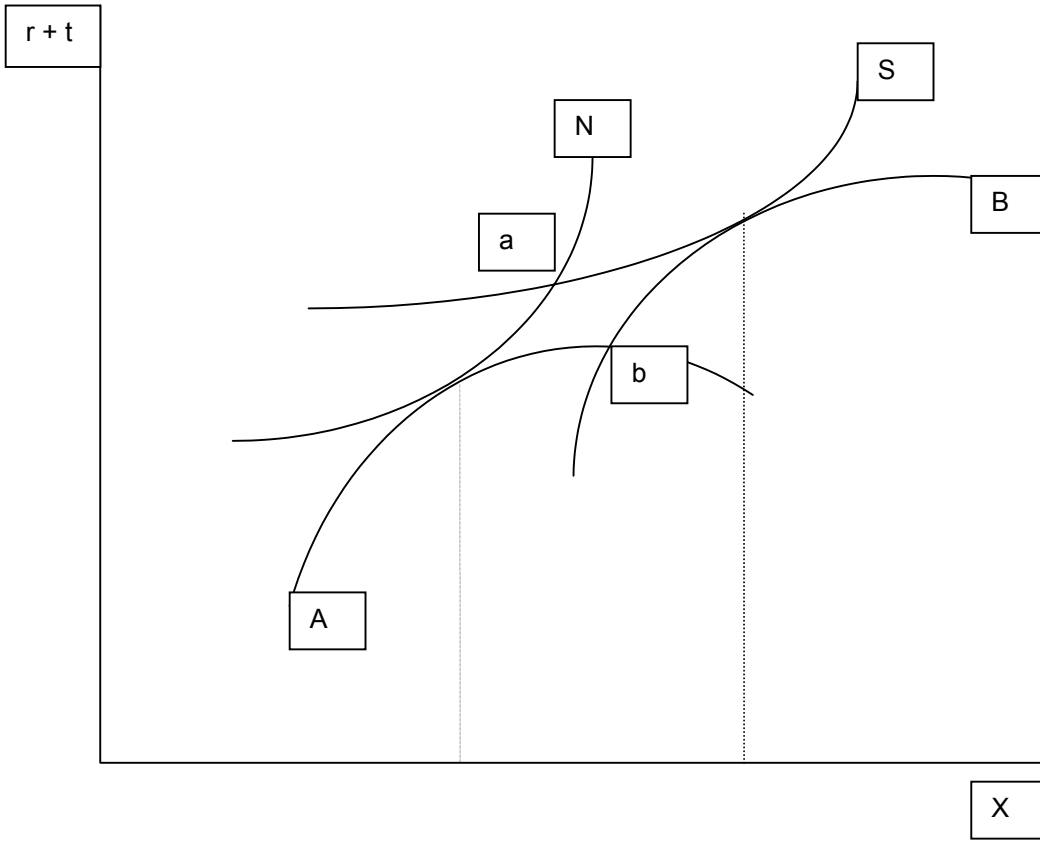
## Appendix

**Proof of Proposition 1:** Totally differentiate equations (2.2) and (2.7), using equation (2.3) to simplify, to obtain

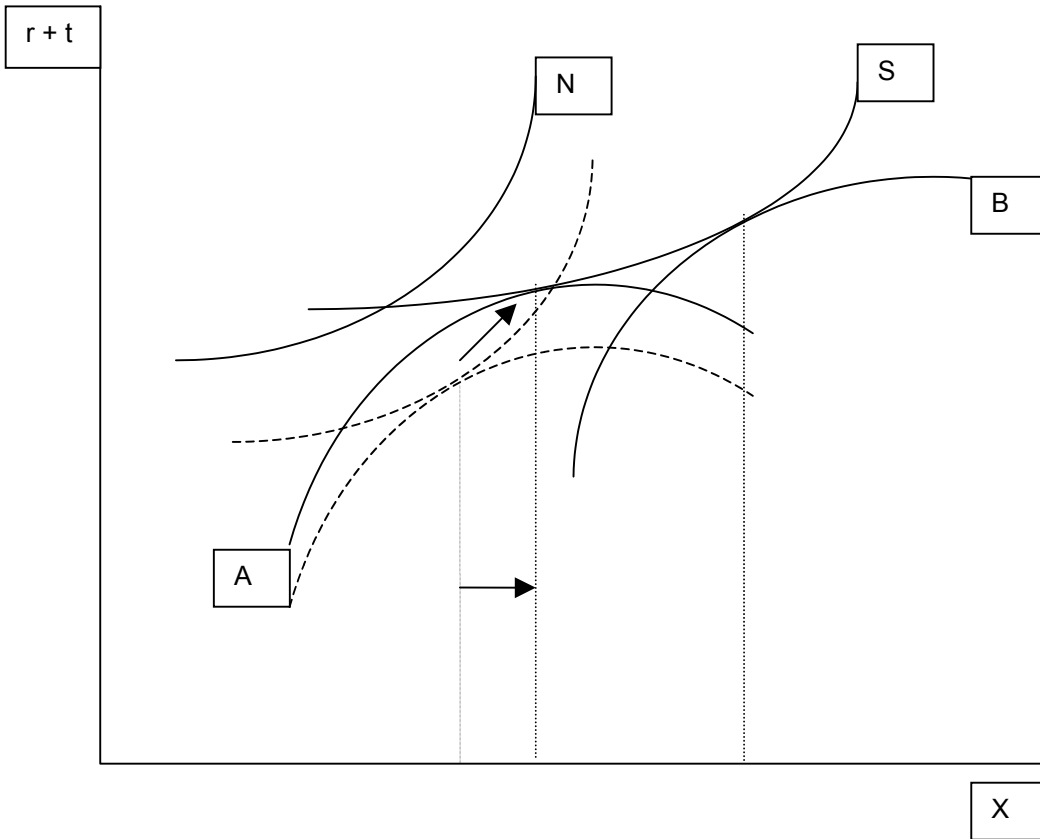
$$\begin{bmatrix} 2l & 2(w-r) \\ 0 & R_{ll} \end{bmatrix} \begin{bmatrix} dw \\ dl \end{bmatrix} = \begin{bmatrix} R_p & l & -1 \\ -R_{lp} & 1 & 0 \end{bmatrix} \begin{bmatrix} dp \\ dr \\ d\bar{\pi} \end{bmatrix}. \quad (\text{A.1})$$

The determinant is  $2lR_{ll} < 0$ , by concavity. Using Cramer's Rule the results follow. ■

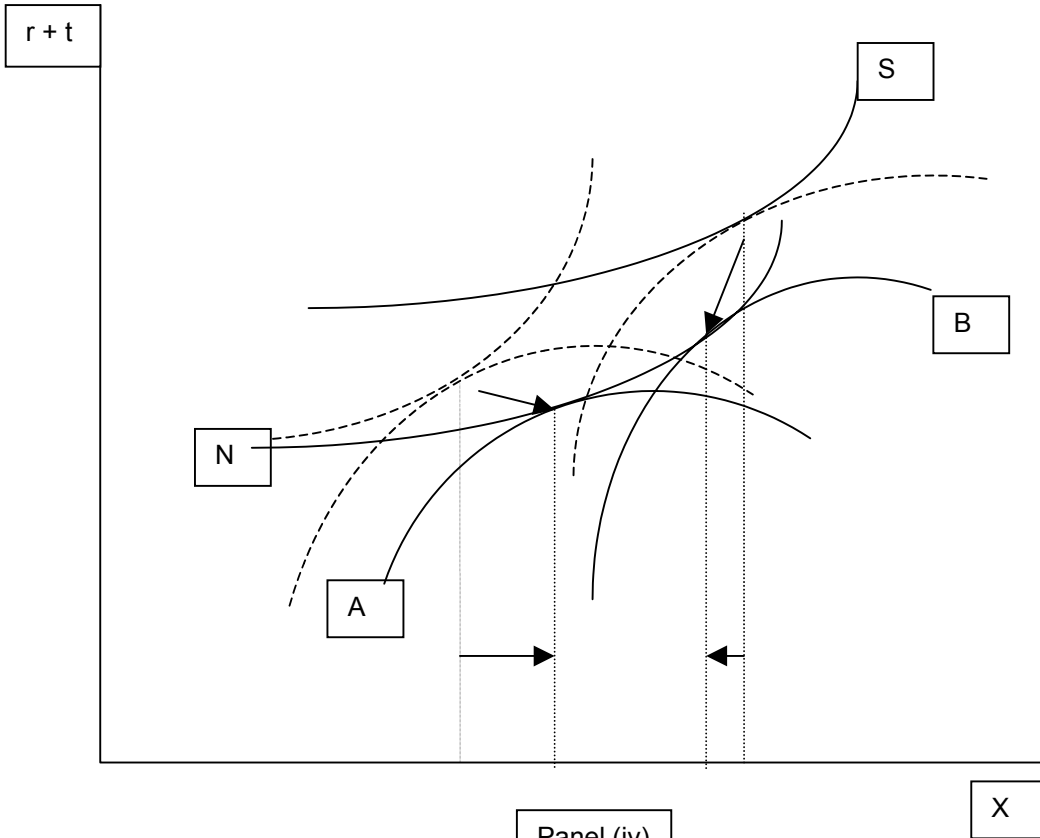
Panel (i)



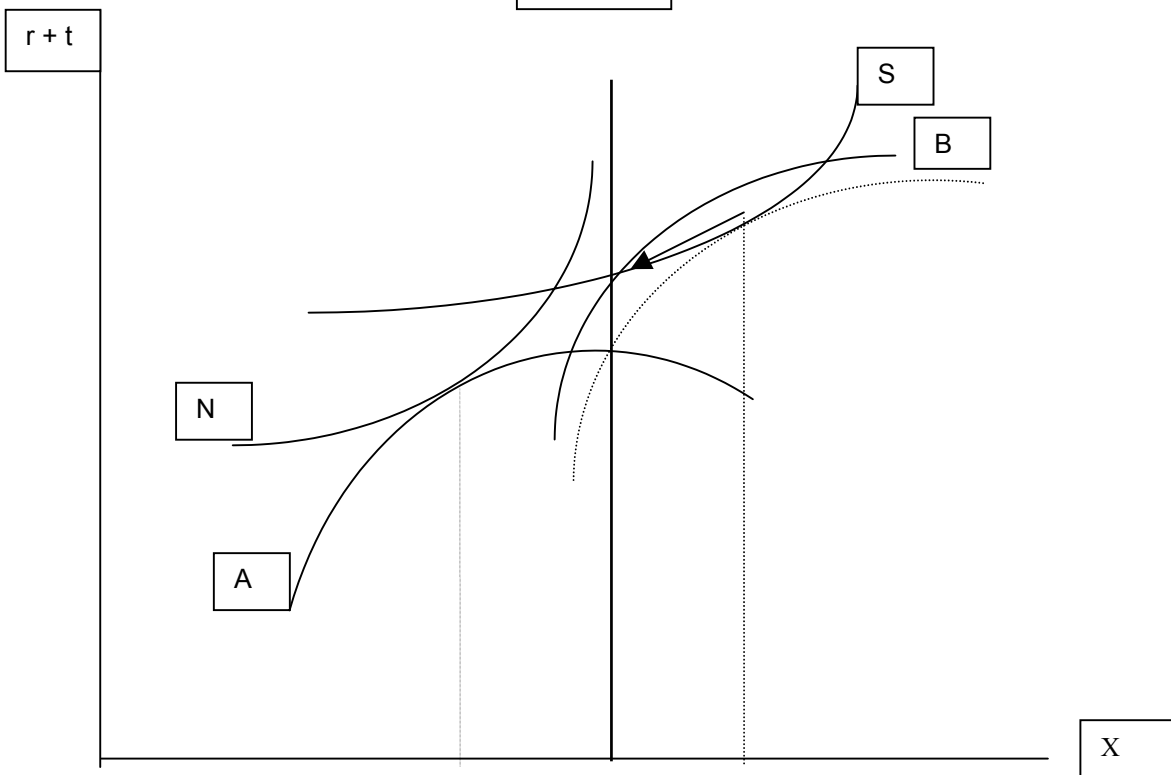
Panel (ii)



Panel (iii)



Panel (iv)



Panel (v)

