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**Working Paper**

# Multinational location decisions and the impact on labour markets

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Noel Gaston and Douglas Nelson

# Multinational Location Decisions and the Impact on Labour Markets

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Phone: +49-228-73-1861
Fax: +49-228-73-1869
E-Mail: zef@uni-bonn.de
http://www.zef.de

**The authors**:
**Noel Gaston**, School of Business, Bond University, Australia and senior research fellow in 2001 at the Center for Development Research, Bonn, Germany. (contact: School of Business, Bond University, Gold Coast, Q'ld. 4229, Australia, E-Mail: noel_gaston@bond.edu.au).
**Douglas Nelson**, Murphy Institute of Political Economy, Tulane University, U.S.A., CREDIT, University of Nottingham, Nottingham, U.K. (contact: Murphy Institute of Political Economy, Tulane University, New Orleans, LA 70118-5698, U.S.A.)

## 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 present a simple partial equilibrium model that focusses on the location decisions of multinational firms. We use the model to analyse the effects of higher labour standards, a 'race-to-the-bottom' and capital market integration.

## Kurzfassung

Ausländische Direktinvestitionen sind in den letzten zwei Jahrzehnten viel schneller gestiegen als der internationale Handel. Ähnlich wie andere bekannte Begleiterscheinungen der Globalisierung sind ausländische Direktinvestitionen umstritten. Die Auswirkungen von ausländischen Direktinvestitionen auf die Arbeitsmärkte wurde zunehmend kritisch bewertet, vor allem in den Ursprungsländern. Die Verschlechterung von Arbeitsmarktbedingungen für gering qualifizierte Arbeitskräfte war in vielen OECD Ländern in den 80er und 90er Jahren ein wesentlicher Grund für diese Besorgnis. In ihrer Auswirkung auf die Arbeitsmärkte können ausländische Direktinvestitionen Auswirkungen haben, die – zumindest kurz- und mittelfristig – die Effekte von Handel und Migration beeinträchtigen. In dieser Studie stellen wir ein einfaches partielles Gleichgewichtsmodell vor, das sich auf die Standortentscheidungen multinationaler Konzerne konzentriert. Wir nutzen das Modell, um Auswirkungen höherer Arbeitsstandards, eines „Race-to-the-bottom" und von Kapitalmarktintegration zu analysieren.

# 1 Introduction

The impact of globalisation 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 early 1990's was a primary catalyst for the concern.[1] Increased integration with the developing world, in the form of increased trade and increased labour migration, was identified as being among the prime suspects responsible for the deterioration. However, 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. More strikingly, Gaston and Nelson (2000) conclude that the most reasonable conclusion to draw is that the impact of immigration on developed country labour markets has been negligible. As with the other prominent features of globalisation, FDI is controversial. Foreign direct investment (FDI) grew far more rapidly than trade during the last two decades of the last century (e.g., see Lawrence, 1996). 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 (see also, Bhagwati, 1995).

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, there may also 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.

[1] Gaston and Nelson (2001) argue that an obvious reason for the intensity of interest in issues dealing with the distribution of earnings is that higher average earnings did not offset the apparent increases in earnings inequality. 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.

The usual motivation for research on FDI or multinational firms and labour market effects is relatively obvious. The most prominent concern for source countries relates to whether multinational corporations *outsource* certain parts of their productive activity to lower labour cost locations. 'Delocalisation' 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 some countries, e.g., Japan).[2]

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 (see Slaughter, 1995; Lawrence, 1996; Markusen and Venables, 1998). 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,

[2] 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.

and therefore would have effects indistinguishable from those of skill-biased technical change on relative wages.[3]

The centrepiece of this paper appears in the next section. It is a simple diagrammatic exposition that highlights the some of the main determinants of the location decisions of multinational corporations. In section III, we review the pertinent existing empirical work on FDI and labour market outcomes. Section IV concludes.

[3] 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).

# 2 A Partial Equilibrium Model of Multinational Location Decisions

## 2.1 Setting the Stage

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 – the conventional or 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 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 well-suited for understanding how multinational corporations affect wage and employment determination at the microeconomic level.

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 investing and producing overseas. Within this framework, the implications for both domestic and foreign labour market outcomes are complicated by the ever-present issue of what constitutes the boundaries of the firm. With the exception of the work by Markusen and Venables (1998), 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 (1994, 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 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 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 section, we discuss a simple framework that provides a model of firm location. The model, which shares many common features with Sherwin Rosen's (1974) hedonic pricing model, Charles Tiebout's (1956) model of federalism, and Robert Feenstra's and Gordon Hanson's (1996a,b) model of product differentiation, 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.

The following model focuses on location decisions alone.[4] 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.

## 2.2 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 structure, as well as the level of endowments, is 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 (see Annexure). 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.

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

[4] Dunning's (1981) 'eclectic theory' involves three major determinants of FDI decisions -- location, ownership and internalisation.

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.[5]

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 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 $X$ than would firm $B$. Accordingly, firm $A$'s iso-profit contours are steeper than are firm $B$'s. More preferred iso-profit contours lie to the 'south-east' for both firms.

## 2.4 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 the South. Firm $A$ optimally uses less sweatshop labour than firm $B$ does. (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.[6]

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[5] 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.

[6] There are some other important assumptions underlying the following analysis that warrant further discussion. First, the 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. Moreover, 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

## 2.5 Comparative Statics 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. An higher minimum wage is a good example. An important assumption is that the 'tax' is simply not 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.[7] 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, per se, 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;[8]

(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. Ipso facto, movers will probably not relocate to the most $X$-intensive industries or the industries with the very lowest labour standards.[9] 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

standards, but what is not modelled is the benefit the firms not covered by the standards gain from reduced rivalry in the product market.

7 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.

8 However, within a given region or country, technological spillovers may make firms more alike over time (e.g., see Driffield and Taylor, 2000). 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 we discuss below, domestic firms and multinational firms have quite different labour demands, even when operating in the same region or industry.

9 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.

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.

## 2.6 Comparative Statics 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 connection 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 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.

## 2.7 Comparative Statics 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. The former finding seems to lend credence to the 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). Also note that if the South 'compensates' firm *B* to restore its original profit level, or to keep it from relocating, 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.

## 2.8 Comparative Statics 4: Increasing Capital Market Perfection

See panel (v). Now consider a fall in $r_S$ (i.e., converging towards $r_N$). Strictly speaking, within the present framework, 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 $r_N$.

## 2.9 Overview

We summarise 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.

# 3 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 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, 1999a). Per se, 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.[10] 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

[10] 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 who 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.

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.[11]

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 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, 2001). There is also some stability in this feature of FDI. For instance, Lipsey (2000) 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.

[11] 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.

### *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.

### *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, that 95 percent of employment in new FDI was in acquired enterprises. Lipsey (2000) 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.[12] 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

[12] 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).

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.[13]

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.[14] 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.

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, 1995; 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, 1995). Once again, this implies that domestic and foreign affiliate employment are not negatively correlated.[15]

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[13] Braconier and Ekholm (2000) 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.

[14] Similar work, focusing on U.S. multinationals can be found in Feliciano and Lipsey (1999), Kravis and Lipsey (1988) and Lipsey (1994a, 1994b, 1999b).

[15] 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).

In a similar fashion, drawing implications from their 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.[16]

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 Wage Effects

First, on the wages front, average compensation per worker is generally higher in foreign-owned than in domestically-owned establishments (Lipsey, 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

[16] 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) 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 (1999) for the United States; and Conyon *et al.* (1999), Girma *et al.* (1999) and Driffield and Taylor (2000) for the United Kingdom.

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 (Lipsey, 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 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. Needless to say, there have 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 biasses 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. First, increased demand for skilled workers in an industry or region and secondly, technology spillovers from foreign to domestic firms.[17] 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 wages 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 in section II.

[17] 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.

# 4 Some Concluding Thoughts

Overall, in assessing the recent research, the most sensible conclusion that can be drawn is that the evidence for an adverse impact of FDI on labour markets is mixed! One 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 and trade liberalisation, FDI could have played some role in the widening wage gap that became evident and so topical in the last few decades. This conclusion is defensible for developing countries in particular, where the size of the foreign inflows of investment, relative to the size of domestic investment, is likely to be economically significant in manufacturing sectors of a developing country's economy.

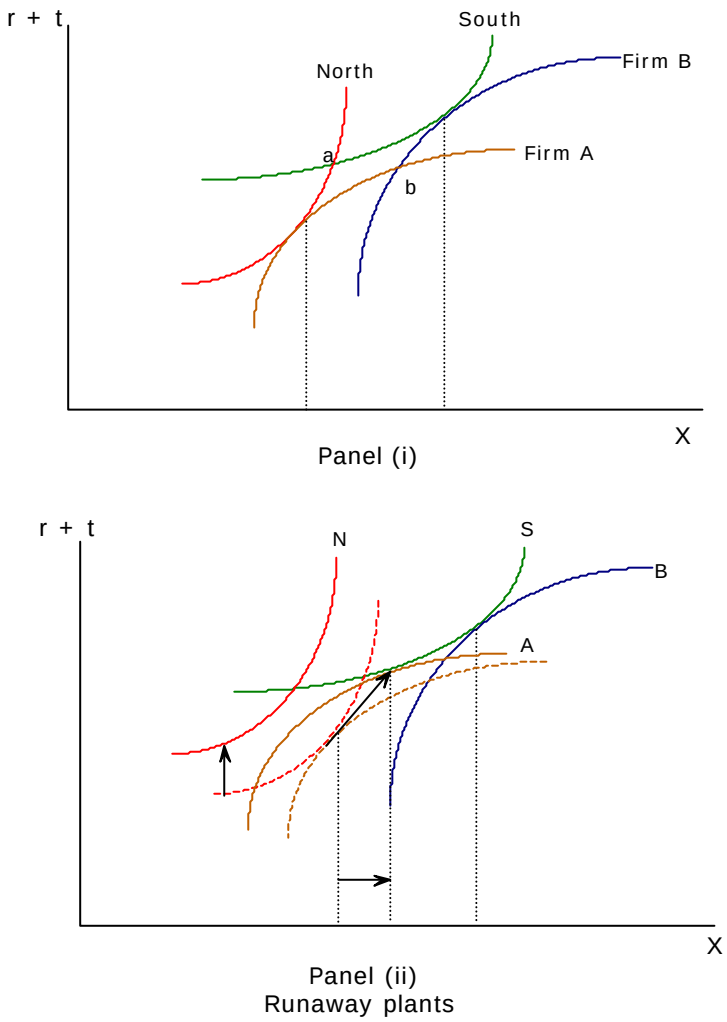
For developed countries, it seems clear that the less-skilled and non-unionised workers are at greater risk in the new global environment. In turn, this may stimulate policy-makers to respond by regulating and reforming rules for investment in their countries[18]. An alternative policy response may take 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 brought to bear on the generosity of public transfers at a time when earned incomes have become more unequally distributed.[19]

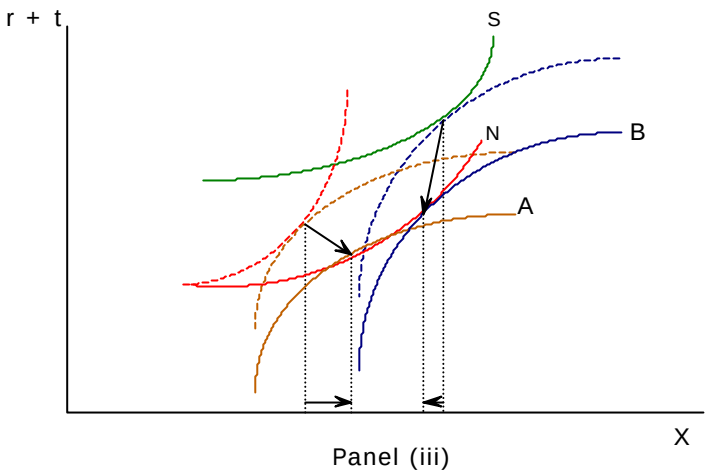
[18] Blomström *et al*. (2000) conclude their study of the impact of inward FDI for Japan by noting the existence of various pressures for fundamental structural changes. Among these are the pressure for the Japanese labour markets to become increasingly flexible. As for regulatory reform, they argue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

[19] 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 work 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., see Rodrik, 1998).

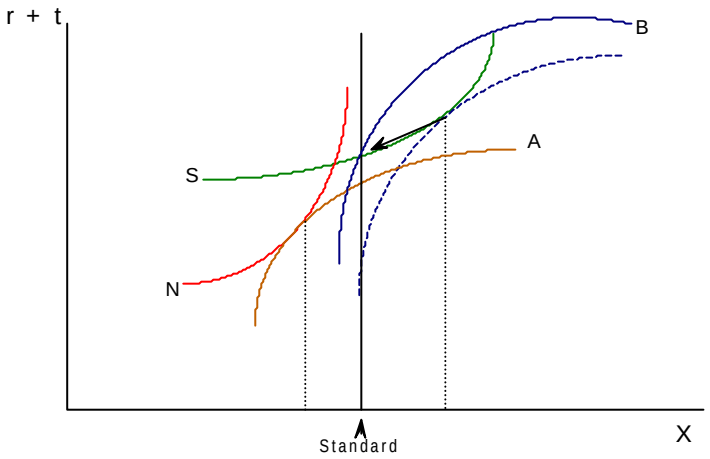
# Annexure

**Figure 1**

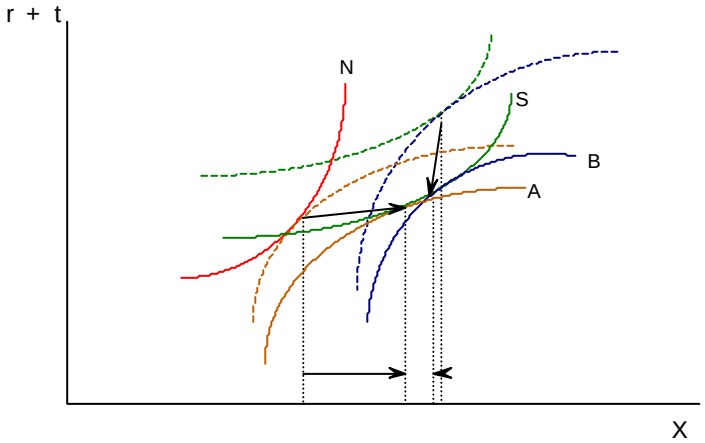





Panel (iii)
Race-to-the-Bottom




Panel (iv)
Labour standard




Panel (v)
Capital market integration

## References

Aaberge, R., T. Wennemo, A. Bjorklund, M. Jantti, P. J. Pedersen and N. Smith (2000). "Unemployment shocks and income distribution: how did the Nordic countries fare during their crises?", *Scandinavian Journal of Economics* 102, 77-99.

Aitken, B., A. Harrison and R. E. Lipsey (1996). "Wages and foreign ownership: a comparative study of Mexico, Venezuela, and the United States", *Journal of International Economics* 40(3/4), 345-71.

Anderton, B., and P. Brenton (1999). "Did outsourcing to low-wage countries hurt less-skilled workers in the U.K.?", in *Global Trade and European Workers*, edited by P. Brenton and J. Pelkmans. London: Macmillan, 147-66.

Baldwin, R. E. (1990). "Factor market barriers are trade barriers: gains from trade from 1992", *European Economic Review* 34(4), 831-45.

___ (1995). "The effects of trade and foreign direct investment on employment and relative wages", *OECD Economic Studies* 23, 7-54.

Bhagwati, J. (1995). "Trade and wages: choosing among alternative explanations", *Economic Policy Review* 1(1), 42-47.

___ (1999). "Globalization: who gains, who loses?", in *Globalization and Labor*, edited by H. Siebert. Tübingen, Germany: Mohr Siebeck, 225-36.

Blomström, M., G. Fors and R. E. Lipsey (1997). "Foreign direct investment and employment: home country experience in the United States and Sweden", *Economic Journal* 107, 1787-97.

___ and A. Kokko (2000). "Outward investment, employment, and wages in Swedish multinationals", *Oxford Review of Economic Policy* 16(3), 76-89.

___, D. Konan and R. E. Lipsey (2000). "FDI in the restructuring of the Japanese economy", working paper no.7693, *National Bureau of Economic Research*, Cambridge, MA.

Blonigen, B. A. (2001). "In search of substitution between foreign production and exports", *Journal of International Economics* 53(1), 81-104.

___ and M. J. Slaughter (1999). "Foreign-affiliate activity and U.S. skill upgrading", working paper no.7040, *National Bureau of Economic Research*, Cambridge, MA.

Braconier, H., and K. Ekholm (2000). "Swedish multinationals and competition from high- and low-wage locations", *Review of International Economics* 8(3), 448-61.

Brainard, S. L. (1997). "An empirical assessment of the proximity-concentration tradeoff between multinational sales and trade", *American Economic Review* 87(4), 520-44.

___ and D. A. Riker (1997). "Are U.S. multinationals exporting U.S. jobs?" working paper no.5958, *National Bureau of Economic Research*, Cambridge, MA.

Bruno, G., and A. Falzoni (2000). "Multinational corporations, wages and employment: do adjustment costs matter?", *CEPR Discussion Paper* no.2471.

Caves, R. E. (1996). *Multinational Enterprise and Economic Analysis*, second edition. New York: Cambridge University Press.

Conyon, M., S. Girma, S. Thompson and P. Wright (1999). "The impact of foreign acquisition on wages and productivity in the U.K.", *Centre for Research on Globalisation and Labour Markets* working paper no.99/08.

Cooke, W. N. (1997). "The influence of industrial relations factors on U.S. foreign direct investment abroad", *Industrial and Labor Relations Review* 51(1), 3-17.

Driffield, N. (1999). "Indirect employment effects of foreign direct investment into the U.K.", *Bulletin of Economic Research* 51(3), 207-21.

___ and K. Taylor (2000). "FDI and the labour market: a review of the evidence and policy implications", *Oxford Review of Economic Policy* 16(3), 90-103.

Dunning, J. (1981). *International Production and the Multinational Enterprise*. London: Allen and Unwin.

Ehrenberg, R. G. (1994). *Labor Markets and Integrating National Economies*. The Brookings Institution, Washington, D.C.

Eskeland, G. S., and A. E. Harrison (1997). "Moving to greener pastures? Multinationals and the pollution-haven hypothesis", *World Bank Policy Research Working Paper* no.1744.

Ethier, W. J. (1994). "Conceptual foundations from trade, multinational firms, and foreign direct investment theory", in *Competitiveness in International Food Markets*, edited by M. E. Bredahl, P. C. Abbott and M. R. Reed. Boulder, CO: Westview Press, 105-28.

Farrell, R., N. Gaston and J.-E. Sturm (2001). "Determinants of Japanese foreign direct investment: a panel study, 1984-1995", working paper, Bond University.

Feenstra, R., and G. Hanson (1996a). "Foreign investment, outsourcing and relative wages", in *The Political Economic of Trade Policy*, edited by R. Feenstra, G. Grossman and D. Irwin. Cambridge, MA: MIT Press, 89-127.

___ and ___ (1996b). "Globalization, outsourcing, and wage inequality", *American Economic Review* 86(2), 240-45.

___ and ___ (1997). "Foreign direct investment and relative wages: evidence from Mexico's maquiladoras", *Journal of International Economics* 42(3/4), 371-93.

___ , ___ and D. Swenson (2000). "Offshore assembly from the United States: production characteristics of the 9802 Program", in *The Impact of International Trade on Wages*, edited by R. Feenstra. Chicago: University of Chicago Press/NBER, 85-122.

Feliciano, Z., and R. E. Lipsey (1999). "Foreign ownership and wages in the United States, 1987-1992", working paper no.6923, *National Bureau of Economic Research*, Cambridge, MA.

Figlio, D. N., and B. A. Blonigen (1999). "The effects of direct foreign investment on local communities", working paper no.7274, *National Bureau of Economic Research*, Cambridge, MA.

Flam, H., and E. Helpman (1987). "Vertical product differentiation and North-South trade", *American Economic Review* 77(5), 810-22.

Frank, R., and R. B. Freeman (1978). "The distributional consequences of direct foreign investment", in *The Impact of International Trade and Investment on Employment*, edited by W. Dewald. Washington, D.C.: U.S. Department of Labor, 153-70.

___ and ___ (1978). *Distributional Consequences of Direct Foreign Investment*. New York: Academic Press.

Fröbel, F., J. Heinrichs and O. Kreye (1980) *The New International Division of Labor*. Cambridge: Cambridge University Press.

Gaston, N., and D. Nelson (2000). "Immigration and labour-market outcomes in the United States: a political-economy puzzle", *Oxford Review of Economic Policy* 16(3), 104-14.

___ and ___ (2001). "Globalisation and wages in OECD economies: linking theory and evidence", forthcoming in *Globalisation and Employment Patterns: Policy, Theory and Evidence*, edited by J. Francois, D. Roland-Holst and D. van der Mensbrugghe. London: CEPR and OECD.

Girma, S., D. Greenaway and K. Wakelin (1999). "Wages, productivity and foreign ownership in U.K. manufacturing", *Centre for Research on Globalisation and Labour Markets* working paper, #99/14.

Glickman, N., and D. Woodward (1989). *The New Competitors: How Foreign Investors are Changing the U.S. Economy.* New York: Basic Books.

Globerman, S., J. C. Ries and I. Vertinsky (1994). "The Economic Performance of Foreign Affiliates in Canada", *Canadian Journal of Economics* 27(1), 143-56.

Gottschalk, P., and T. M. Smeeding (1997). "Cross-national comparisons of earnings and income inequality", *Journal of Economic Literature* 35, 633-87.

Graham, E. M., and P. R. Krugman (1991). *Foreign Direct Investment in the United States*, second edition. Washington, D.C.: Institute for International Economics.

___ and ___ (1993). "The surge in foreign direct investment in the 1980s", in *Foreign Direct Investment*, edited by K. A. Froot. Chicago: University of Chicago Press, 13-33.

Hatzius, J. (2000). "Foreign direct investment and factor demand elasticities", *European Economic Review* 44(1), 117-43.

Head, K., and J. Ries (2000). "Offshore production and skill upgrading by Japanese manufacturing firms", working paper, University of British Columbia.

Horst, T. (1978). "The impact of American investments abroad on U.S. exports, imports and employment", in *The Impact of International Trade and Investment on Employment*, edited by W. Dewald. Washington, D.C.: U.S. Department of Labor, 139-51.

Katz, L. F., and K. M. Murphy (1992). "Changes in relative wages 1963-1987: supply and demand factors", *Quarterly Journal of Economics* 107(1), 35-78.

Kravis, I., and R. E. Lipsey (1988). "The effect of multinational firms' operations on their domestic employment", working paper no.2760, *National Bureau of Economic Research*, Cambridge, MA.

Krugman, P. (1995). "Growing world trade: causes and consequences", *Brookings Papers on Economic Activity* 1, 327-62.

Lawrence, R. Z. (1994). "Trade, multinationals, and labor", working paper no.4836, *National Bureau of Economic Research*, Cambridge, MA.

___ (1996). *Single World, Divided Nations? International Trade and OECD Labor Markets.* Washington, D.C.: Brookings and OECD.

Lipsey, R. E. (1994a). "Outward direct investment and the U.S. economy", working paper no.4691, *National Bureau of Economic Research*, Cambridge, MA.

___ (1994b). "Foreign-owned firms and U.S. wages", working paper no.4927, *National Bureau of Economic Research*, Cambridge, MA.

___ (1999a). "The role of foreign direct investment in international capital flows", working paper no.7094, *National Bureau of Economic Research*, Cambridge, MA.

___ (1999b). "Foreign production by U.S. firms and parent firm employment", working paper no.7357, *National Bureau of Economic Research*, Cambridge, MA.

___ (2000). "Interpreting developed countries' foreign direct investment", working paper no.7810, *National Bureau of Economic Research*, Cambridge, MA.

___, I. B. Kravis and R. A. Roldan (1982). "Do multinational firms adapt factor proportions to relative factor prices?", in *Trade and Employment in Developing Countries: Factor Supply and Substitution*, edited by A. O. Krueger. Chicago: University of Chicago Press, 215-55.

Markusen, J. R. (1995). "The boundaries of multinational enterprises and the theory of international trade", *Journal of Economic Perspectives* 9(2), 169-89.

___ and K. E. Maskus (2001). "Multinational firms: reconciling theory and evidence", forthcoming in *Topics in Empirical International Economics: A Festschrift in Honor of*

*Robert E. Lipsey*, edited by M. Blomström and L. S. Goldberg. Chicago: The University of Chicago Press.

___ and A. J. Venables (1995). "The role of multinational firms in the wage-gap debate", *Review of International Economics* 5(4), 435-51.

___ and ___ (1998). "Multinational firms and the new trade theory", *Journal of International Economics* 46(2), 183-203.

Oi, W. Y., and T. L. Idson (1999). "Firm size and wages", in *Handbook of Labor Economics*, volume 3B, edited by O. Ashenfelter and D. Card. Amsterdam: Elsevier Science, 2165-214.

Paul, C. M., and D. Siegel (2000). "The impacts of technology, trade and outsourcing on employment and labour composition", *Centre for Research on Globalisation and Labour Markets* working paper, no.00/10.

Renshaw, G. (1993). "Overview and Conclusions", in *Multinationals and Employment: The Global Economy in the 1990s*, edited by P. Bailey, A. Parisotto and G. Renshaw. Geneva: International Labour Office, 293-325.

Riker, D. A., and S. L. Brainard (1997). "U.S. multinationals and competition from low wage countries", working paper no.5959, *National Bureau of Economic Research*, Cambridge, MA.

Rodrik, D. (1998). "Why do more open economies have bigger governments?", *Journal of Political Economy* 106, 997-1032.

Rosen, S. (1974). "Hedonic prices and implicit markets", *Journal of Political Economy* 82(1), 34-55.

Slaughter, M. J. (1995). "Multinational corporations, outsourcing, and American wage divergence", working paper no.5253, *National Bureau of Economic Research*, Cambridge, MA.

___ (2000). "Production transfer within multinational enterprises and American wages", *Journal of International Economics* 50(2), 449-72.

Tiebout, C. M. (1956). "A pure theory of local expenditures", *Journal of Political Economy* 64(5), 416-24.

Tolchin, M., and S. Tolchin (1988). *Buying into America*. New York: Quorum Books.

Wheeler, D., and A. Mody (1992). "International investment location decisions", *Journal of International Economics* 33(1), 57-76.

World Bank (1997). *World Development Indicators*. Washington D.C.: World Bank.