# Hymer and Uneven Development Revisited: FDI and Regional Inequalities

**David Bailey and Nigel Driffield**
*Birmingham Business School*

**Abstract**

Picking up on one of Hymer's key contributions, this paper examines the impact that inward FDI into the UK has on the patterns of development, both within and across regions. Using a panel of data for the manufacturing sector, the paper illustrates that even where one isolates the effect on the domestic sector alone, inward investment acts to increase the demand for skilled, relative to unskilled labour, and also generates the expected agglomeration effects in terms of the demand for capital investment. The paper then goes on to draw certain policy comparisons between these findings and the desired aim of attracting FDI, notably to increase demand for labour in those regions suffering structural unemployment, and secondly to reduce the disparities between regions.

Keywords: Inequality, regional development, factor demand.

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Contact details:

Birmingham Business School,
Ashley Building,
Birmingham University,
Edgbaston,
Birmingham
B15 2TT.

D.G.Bailey@bham.ac.uk
N.L.Driffield@bham.ac.uk

## Introduction

One of Hymer's critical contributions was in exploring the relationship between FDI and development. In emphasising a link between the activities of transnationals and uneven development he pointed to the effects of transnationals in increasing and perpetuating inequalities. The aim of this paper is to examine the effect of FDI on inequalities within and between regions. If as envisaged by Hymer and later Cowling and Sugden (1994), both centripetal and centrifugal effects are at work in fostering uneven development and thereby heightening inequalities, then the benefits of transnationals' activities must predominantly accrue to certain actors and not others. To explore this we examine the impact of inward investment on the demand for skilled labour, unskilled labour, and capital within the domestically owned sector of the economy, across assisted and non-assisted regions of the UK.

Research investigating the structural changes in an economy resulting from inward investment, in terms of skill levels, the demand for factors of production and technological change within the host country sector is discussed at length in Driffield and Taylor (2000). More generally, this literature encompasses technology spillovers from FDI and the extent to which inward investment transfers technology to the domestic sector. Barrell and Pain (1997) outline a process where the technology that is embedded in new inward investment spills over to the domestic sector, but does not impact on all factors equally. Rather this technology replaces unskilled labour, while increasing the productivity of skilled labour and capital. A further mechanism for FDI to impact on domestic factor markets however is through product markets. It is feasible that inward

investment acts to "crowd out" domestic investment, following Buffie (1993) by increasing competition in product markets. Again, this would reduce employment in the domestic sector. Some of these effects may be taken, in the long term to be beneficial for the host country, if skill upgrading, technological advance and increased competition improve competitiveness, but it is likely that these impacts will not be the same across all regions. Of particular concern are the differences that occur between "assisted" and "non-assisted" areas, where the former are those peripheral regions that under British and EU regional and competition policy are able to offer subsidies to attract inward investment, while the latter cannot.

In this context evidence is presented which supports the view that transnationals' activities increase inequalities as Hymer suggested, for example by increasing the returns to skilled labour whilst reducing those for unskilled labour. Yet recent British policy both nationally and regionally has emphasised the role of inward investment in alleviating structural unemployment in the peripheral (assisted) regions and in fostering technology transfer, thereby reducing inequalities within and between regions. But if unskilled workers lose out because demand for unskilled labour falls as a result of FDI then a major goal of policy is not being achieved: at the very least alternative policies are required to assist unskilled workers as part of a broader development agenda. Furthermore, inter-regional inequalities are likely to be heightened by the effect of FDI in boosting investment in non-assisted areas whilst crowding it out in assisted areas.[1] The

[1] This paper does not show that FDI definitely increases inter-regional inequalities. It does show, however, that inward investment reduces the demand for unskilled labour even in regions of high unemployment. This raises the distinct possibility of such an effect through its impact on the demand for skilled and

likely result is that returns on capital are increased in non-assisted areas and reduced in assisted areas.

The paper proceeds as follows. The next section offers a brief overview of Hymer's contribution on uneven development. Hymer's approach is then contrasted with the attitudes of contemporary policymakers who see FDI as reducing unemployment and inequalities. Following this the factor demand model used is outlined before the results are presented and their implications discussed and related back to the goals of policymakers and Hymer's analysis.

**Hymer on Uneven Development**

Thirty years ago Stephen Hymer foresaw a world economy increasingly resembling that of United States, where large corporations tend to "spread over the entire continent and to penetrate every nook and cranny" (Hymer, 1975: 122). In exploring the impact of this anticipated "further multi-nationalization of all giant firms" Hymer made the critical connection between the structure and organisation of such firms and the structure and organisation of the broader international economy that would result from their pre-eminence (*ibid*). By combining Chandler and Redlich's three-level classification of corporate structure with location theory he envisaged a world economy where managerial activities are spatially differentiated, contributing to patterns of uneven development across countries and regions.

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unskilled labour and via the possibility of boosting investment in non-assisted areas whilst crowding it out in assisted areas.

In this scenario, low-level day-to-day activities are spread around in search of low costs and market access, the coordination of such activities is more geographically concentrated given the need for skilled workers and communication/information systems, and top management responsible for goal determination and planning is spatially concentrated in major cities. Such major cities would become the "major centers of high-level strategic planning" (*ibid*: 124) whilst lesser cities would be organised on a hierarchical basis ranging from bases for regional headquarters down to sites dealing with merely day-to-day operations. As a result, "income, status, authority, and consumption patterns would radiate out from these centers along a declining curve, and the existing pattern of inequality and dependency would be perpetuated" (*ibid*: 114). On the latter Hymer emphasised how the system would be perpetuated via the resulting system of trickle-down. Under this, new innovations are introduced first to a select group in the capital cities and later via an international demonstration effect spreading out from the metropolis to the hinterland, controlled by the activities of transnationals through their control of marketing channels and the media. (*ibid*: 125) This, he argued, has the effect of reinforcing patterns of authority and control by creating the illusion of upward mobility for workers outside the core even though their relative status remains unchanged.

Whilst Hymer's analysis might be criticised for the over-simplification of a complex economic reality there does indeed seem to be a correspondence between the structure and organisation of transnational firms and the structure and organisation of the

international economic system, as Cowling and Sugden (1994: 58) observe.[2] In this context the domination of transnationals subjects the international economic system to both centrifugal and centripetal tendencies (*ibid*). Centrifugal forces exist as low-level, unskilled activities are thrown out from the centre to low-cost locations on the periphery, whilst centripetal forces pull strategic decision-making into the centre. Such processes are suggested by recent trends across Europe, with location consultants advising transnational firms producing separate listings of sites across Europe for different activities (see Young and Hood 1993). Regarding R&D activity, German and French locations score highly; for regional headquarters, locations close to main commercial centres are attractive; for greenfield assembly operations the peripheral areas of northern Britain, Ireland, and the Mediterranean rim are most attractive; and so on. If transnationals have followed such advice, it would imply that higher value-added and decision-making activities have located closer to the central core of Europe.

There is evidence to favour such a hypothesis.[3] For example, the peripheral regions of the EU have indeed attracted mainly low-order assembly operations, with strategic decisions made elsewhere. In the British case, Barrell and Pain (1997) found that Britain has been successful in attracting labour-intensive investment, but has fared poorly in attracting capital-intensive activity, and has been relatively unattractive in sectors where R&D has been more significant. Another finding (*ibid*) is that Britain has done well in

[2] Hymer's work in this area has prompted a stream of literature exploring strategic decision-making and power (for example Cowling and Sugden, 1987 and 1994), uneven development (for example Sugden, 1997; Cowling and Sugden 1999), divide and rule (for example Peoples and Sugden, 2000) and strategic failure and policy responses (for example Bailey *et al*, 1999).

[3] See Bailey *et al* (1999) for more detail and a discussion of policy implications arising from such centripetal tendencies. See also Dicken (1992) who notes, "that there are recognisable hierarchical spatial tendencies in the location of different parts of transnationals".

attracting investment in the non-manufacturing sector, yet this is the very sector "where the evidence for the existence of beneficial supply-side effects from foreign investment is weakest". Other evidence is available in Young and Hood (1993), who summarise the effects of inward investment in Britain, pointing to some significant static gains in the form of jobs and exports but few dynamic benefits and little in the way of spin-off and demonstration effects. They conclude that transnational investment has not enabled the mature industrial regions of Britain to break free from their peripherality.[4]

## National and Regional Policy Approaches in Attracting FDI

Widespread acceptance of the benefits of FDI can be observed from international organisations right down to regional development agencies. For example, the European Bank for Reconstruction and Development (EBRD: 1998) stresses the benefits that FDI can bring in increasing capital accumulation, raising productivity and export performance, and generating technological and organisational benefits for domestic suppliers and competitors. Similarly the British government welcomes incoming transnationals for bringing "new jobs, new management techniques, innovation, dynamism and competition to the economy" (Blair, 2002), and has backed this up with substantial subsidies.[5] This view is supported by academics such as Eltis (1996) who see

[4] See also Fothergill and Guy (1990) who explore why branch plants are more likely to close in peripheral, assisted areas as against non-assisted areas. They conclude that branch plants in assisted areas have been vulnerable because they "are relatively small, make mature products towards the back-end of their life-cycle, and *lack the specialised headquarter functions* that elsewhere can ensure survival" (our italics).

[5] Evidence on the scale of such support is limited. Brech and Sharp (1984) estimate that in 1981-1982 the overall level of financial assistance offered by the British government to incoming transnationals – including tax relief and other expenditure seen to benefit foreign controlled firms – was £1.5 billion. Excluding tax relief their estimate was £370 million. Girma *et al* (2001) note that the British government provided $30 000 per worker in attracting Samsung and $50 000 per worker in attracting Siemens, both to the North-East.

foreign transnationals in particular as raising quality and productivity levels.[6] At the regional level the emphasis for many years for the less favoured regions of Britain has been on alleviating structural unemployment via inward investment inflows (Yannopoulos and Dunning, 1976) using regional support for assisted areas (Gripaios *et al*, 1997).[7] With the decentralisation of industrial policy to agencies in Scotland, Wales, Northern Ireland and the English regions, there has been intensified competition between agencies to attract FDI through subsidy packages.[8] The recently set-up Regional Development Agencies (RDAs) across England generally pursue two main and interlinked economic development strategies in creating and supporting employment: the attraction of transnationals and the support of clusters via cluster policies, with the latter often dependent on the former through monopsonistic supply chains based around foreign investors such as in the car or electronics industry. Such approaches form part of wider regional economic strategies that stress the need to foster social inclusion (see for example Advantage West Midlands, 1999 and Benneworth, 2001).[9]

In fact in recent years there has been something of a re-emphasis on the role of inward investment in revitalising less favoured regions after a decade or so of policy emphasis on

[6] See Girma *et al* (2001). Driffield (2001) and Driffield and Love (2001) explore the subtleties involved in evaluating the effects of FDI in bringing superior technology, such as the motivation behind the investment.
[7] Fothergill and Guy (1990) commented "in the early 1990s the opportunities to divert factories to depressed areas are greater than at any time for two decades".
[8] See for example the bidding war in 1997 between two British regions, Wales and the North, to win a plant of the Taiwanese-based computer firm Acer (*The Guardian*, 8/11/97). The intense regional competition over subsidies offered to transnationals prompted the Department of Trade and Industry to try to control such support, but it eventually backed down in the face of opposition from the Welsh, Scottish and Northern Ireland Offices (*The Guardian*, 18/11/97).
[9] See the Regional Economic Strategy of Advantage West Midlands which stresses the need for "greater social and economic cohesiveness" and the need to make opportunities "accessible to those people who are experiencing social exclusion" (Advantage West Midlands, 1999: 3). It also notes the need to tackle "concentrations of high unemployment and accompanying social deprivation" (*ibid*).

the potential of small firms and indigenous entrepreneurship.[10] Partly, as Amin and Tomaney (1995) note, this can be related to the sense amongst some researchers that the nature of the multi-locational firm may be changing with a distinction drawn between the traditional cost-driven transnational and the so-called performance firm which "derives its competitive advantage from product excellence and seeks locations which can offer qualified personnel and innovation-rich environments" (see Amin and Tomaney, 1995). The latter is seen as bringing a range of attributes - including a wider range of functions, local decision-making authority, more extensive and superior local linkages and a more strategic position within the firm - which are more likely to benefit regional host economies. Yet in reality, as Amin and Tomaney (1995) note, in less favoured regions the term "flagship" often more appropriately refers to the international reputation of the firm, not the quality of the inward investment. Such "performance" plants are few and far between in peripheral regions and seem instead to locate in core regions. Rather, they suggest that policy in peripheral regions is likely to be more successful in targeting appropriate investment and in working with investors to secure an upgrading of the quality of the investment via aftercare policies.

Thus whilst Hymer's work has pointed to the effect of transnationals' activities in heightening and perpetuating inequalities, the focus of policy-makers in recent years has been on attracting transnationals' activities as a way of stimulating national and regional development and encouraging catch-up. At the risk of over-simplification, Hymer sees transnationals' activities as heightening inequalities, whereas modern-day policy-makers

[10] Which in turn came after the wave of branch plants established in the 1960s and 1970s failed to deliver an industrialisation benefiting regional host economies through skills upgrading, technology transfer,

see transnationals as reducing them. Of course, such differences can be reconciled by observing that inward investment may bring new technology and higher productivity to a region or a country, but that this may still be relatively low-level activity which fits the transnational's pattern of spatial activities, and may do little or nothing to close development gaps with the strategic centres. Summarising the policy debate, it can be seen that for the British regions at least the emphasis has been on using inward investment to: (i) reduce structural unemployment; and (ii) to reduce inequalities, both intra-regionally via (i) and inter-regionally via raised productivity through technology transfer and spillover effects.

In this context an examination of the impact of FDI on inequality not only helps us to assess the policy stance but also to examine, thirty years on, whether Hymer was on the right lines in stressing the effects of transnationals in heightening inequalities and uneven development. The purpose of this paper is therefore to examine the extent to which inward FDI contributes to or alleviates regional disparities in the UK. Whilst there have been several studies that have sought to do this, by focussing on GDP per head within or across regions, our aim is to focus on the effects that are generated within, as well as across regions. Thus we focus on the impact of inward FDI on the demand for various factors of production across UK regions. Of particular interest, as noted above, are the differences between "assisted" and "non-assisted" areas. Table 1 below clearly illustrates the distinction that can be made between assisted and non-assisted areas of the UK, with only the North West of England being difficult to categorise. As is well understood, the reason why regions have assisted area status is the recognition that some

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linkages, new management techniques or retained profits (see Amin and Tomaney, 1995; Massey, 1995).

form of subsidy or investment incentive is required to stimulate investment in the region. This has been a source of much discussion in that it is the investment in capital that attracts the subsidy, while the aim of the policy as noted above is to stimulate employment.

**Table 1. Shares of employment in Assisted Areas.**

| | **Share of employment in assisted areas** | | | **Share of foreign employment in assisted areas** | | |
|---|---|---|---|---|---|---|
| | *1984* | *1988* | *1992* | *1984* | *1988* | *1992* |
| North | 83% | 81% | 84% | 81% | 80% | 71% |
| Yorkshire & Humberside | 17% | 9% | 7% | 18% | 6% | 9% |
| East Midlands | 3% | 3% | 4% | 2% | 1% | 3% |
| East Anglia | 0 | 0 | 0 | 0 | 0 | 0 |
| South East | 0 | 0 | 0 | 0 | 0 | 0 |
| South West | 14% | 8% | 8% | 5% | 1% | 3% |
| West Midlands | 72% | 72% | 72% | 71% | 70% | 65% |
| North West | 43% | 46% | 54% | 46% | 46% | 66% |
| Wales | 96% | 94% | 98% | 98% | 96% | 94% |
| Scotland | 76% | 72% | 73% | 80% | 79% | 70% |
| Northern Ireland | 100% | 100% | 100% | 100% | 100% | 100% |

Source: *Report on the Census of Production,* UK Office of National Statistics, various years.

This illustrates that the eleven regions of the UK can reasonably be divided into "assisted" and "non-assisted" regions, with the exception being the North West of England.

## The Model

The purpose of this paper is to focus on the structural changes, that is the demand for factors of production that occur within the domestic sector of the economy as a result of inward investment. We therefore examine the impact of inward investment on the demand for skilled labour, unskilled labour, and capital, within the domestically owned sector of the economy, across assisted, and non-assisted regions of the UK. The impacts of inward investment on the different factors of production are expected to be heterogeneous. One way to address this would be to estimate a series of reduced form equations, for wage rates or productivity for example. However, as inward FDI is hypothesised to impact on different factors to different degrees and possibly both adversely and positively, then the restriction of employing say a series of reduced form equations within a Cobb-Douglas framework is too restrictive. The approach we take here is to employ a structural equation for factor demand, which allows FDI to impact on different factors to differing extents (and indeed in different directions). Thus, we can determine whether inward investment acts to increase or reduce the demand for various factors of production, and hence the rents that are paid to those factors. The advantages of this approach are outlined by Barrell and Pain (1997, 1999), who focus on the demand for unskilled labour as an indicator of technological change. In addition to allowing for heterogeneity in the impact of FDI across different factor markets, this approach is not beset by the problems associated with imposing unitary elasticity of substitution ($\sigma$) between factors, which would bias results here. Full discussion of this is provided in Barrell and Pain (1997): however, to summarise, starting with a standard CES production function:

$$Q = \gamma[s(K)^{-\rho} + (1-s)(Le^{\lambda t})^{-\rho}]^{-1/\rho} \ldots\ldots(1)$$

where A>0, and 0<s<1.

Returns to scale are given by: $\frac{s}{1-s}\left(\frac{K}{L}\right)^{\rho+1}$

The elasticity of substitution is given by (ρ/1+ρ), t represents exogenous technological change. Thus, it is possible to derive a demand for labour equation:

$$\ln(L) = \ln(Q) - \frac{1}{1+\rho}\ln(w/p) - \frac{\rho}{1+\rho}\lambda t + \left[\frac{1}{1+\rho}\ln\left\{1 - s\middle/\beta\right\} - \frac{\rho}{1+\rho}\ln(\gamma)\right]$$

$$= \ln(Q) - \sigma\ln(w/p) - (1-\sigma)\lambda t + \left[\sigma\ln\left\{1 - s/\beta\right\} - (1-\sigma)\ln(\gamma)\right]\ldots\ldots(2)$$

It is therefore possible to relate the externalities vector discussed above to exogenous technological change:

$$\lambda t = \lambda_1 \text{TIME} + \lambda_2 \text{FDI} \qquad (3)$$

Finally, it is anticipated that there will be a good deal of persistence in factor demand, and that there will exist certain fixed effects, such that the final equation to be estimated can be given in the following terms:

$$\ln(L)_{it} = \alpha + \beta_0 \ln(L)_{it-1} + \beta_1 \ln(Q)_{it} - \beta_2 \ln(w/p)_{it} + \beta_3 t_{it} + \beta_4 FDI_{it} + \alpha_i + \alpha_t + e_{it}$$
……(4)

where the $\beta$'s are the coefficients to be estimated. The first three, as written are expected to be positive, while time and FDI are expected to impact on the demand for different factors in different ways, as outlined above.

clearly similar specifications can then be employed for the other factors of production.

**Data**

The data used are industry and regional level data for the UK, covering 1984-1992.[11] There are 11 standard planning regions, and 20 manufacturing sectors (2 digit level), giving 220 observations per year (200 after omitting the North West Region). The data was gathered from the Annual Production Inquiry (formerly the Census of Production), and from the UK Office of National Statistics, which provided the data on the foreign owned sector alone, to allow the calculation of the domestically owned sector.

**K** is the capital stock of the domestic industry; the change in this is given by net capital investment, in the UK owned sector. This is expressed in £ millions. Data on the capital stock are not available at this level of aggregation, so the sum of discounted net investment over the previous three years is used as a proxy. A standard depreciation rate of 10% is used.

**UL** is employment of manual workers in the domestic owned industry.

**SL** is employment of non-manual workers in domestic owned industry.

[11] There was a change in regional and industry classifications in 1993 for the UK, preventing consistent extension of the data.

The average wage of a full time equivalent worker is also given for both skilled and unskilled labour. These are expressed in real terms, using the producer price index deflator for the relevant sector.

**r**: The price of capital is proxied by the return on capital employed in the previous year.

**FDI**: Crucially, the measure of foreign investment employed here is new capital expenditure in foreign owned or controlled firms. As such, this does not include flows of capital which are simply acquisitions of UK firms by foreign firms. This is then converted to the share of total capital that is accounted for by the foreign owned sector.

**Estimation**

With what are essentially structural equations of this type, endogeneity and simultaneity are expected to cause significant problems. As is well understood, the GMM estimator suggested by Arellano and Bond (1988, 1991) can be applied to estimate (4), which generates heteroscedastic-consistent estimates. This involves taking first differences to eliminate the fixed effects, but when one does this, the lagged dependent variable becomes endogenous as it is related to the error term by construction, and so must be instrumented, using further lags. Indeed, all explanatory variables are instrumented with all possible lagged values, as is discussed in Arellano and Bond (1988, 1991). There is a concern that with the estimation of what is essentially a "growth" model, the estimate of the coefficient on the lagged dependent variable has an upward bias, if the panel data exhibits significant heterogeneity, see Pesaran and Smith (1995). There is no definitive test for this, and the various suggested estimators are designed for panels with a long time

series, but narrow cross sections, see for example Lee *et al* (1998) who discuss the application of the "mean group" estimator. Lee *et al* (1995) however also show that biased estimates may be produced with the mean group estimator for T as large as 30. One possible test with these data is to allow for slope dummies in the lagged dependent variable, allowing $\beta_0$ to vary across industries or across regions. Standard specification tests however reject the inclusion of such variables, suggesting that heterogeneity is not a problem.

**Results**

Dependent variable $UL_{irt}$

| | Non-assisted areas | | | Assisted areas | | |
|---|---|---|---|---|---|---|
| Parameter | Estimate | t-statistic | P-value | Estimate | t-statistic | P-value |
| $UL_{irt-1}$ | .538 | 4.05** | [.000] | .411 | 3.26** | [.000] |
| $Q_{irt}$ | .599 | 5.55** | [.000] | .408 | 2.31** | [.017] |
| $FDI_{irt}$ | -.004 | -5.02** | [.000] | -.002 | -2.61** | [.009] |
| $Wage(UL)_{irt}$ | -.084 | 4.26** | [.000] | -.075 | -2.51** | [.012] |
| Time trend | -.108 | -9.12** | [.000] | -.041 | -1.40 | [.162] |
| Time dummies | yes | | | yes | | |
| N | 700 | | | 700 | | |
| Sargan (p value) | | .514 | | | .230 | |

Dependent variable $SL_{irt}$

| | Non-assisted areas | | | Assisted areas | | |
|---|---|---|---|---|---|---|
| Parameter | Estimate | t-statistic | P-value | Estimate | t-statistic | P-value |
| $SL_{irt-1}$ | .241 | 1.72* | [.085] | .411 | 3.26** | [.000] |
| $Q_{irt}$ | .336 | 3.18** | [.000] | .408 | 2.31** | [.017] |
| $FDI_{irt}$ | .002 | 4.21** | [.000] | .002 | 2.61** | [.009] |
| $Wage(SL)_{irt}$ | -.123 | -3.23** | [.001] | -.075 | -2.51** | [.012] |
| Time trend | .121 | 3.19** | [.001] | -.041 | -1.40 | [.162] |
| Time dummies | Yes | | | yes | | |
| N | 700 | | | 700 | | |
| Sargan (p value) | | .458 | | | .319 | |

Dependent variable $K_{irt}$

| | Non-assisted areas | | | Assisted areas | | |
|---|---|---|---|---|---|---|
| Parameter | P-value | Estimate | t-statistic | Estimate | t-statistic | P-value |
| $K_{irt-1}$ | .036 | 3.28** | [.001] | .012 | 9.19** | [.000] |
| $Q_{irt}$ | .707 | 7.72** | [.000] | .257 | 2.31** | [.021] |
| $FDI_{irt}$ | .0041 | 3.34** | [.004] | -.011 | -4.63** | [.000] |
| $r_{irt}$ | .093 | .917 | [.359] | -.234 | -3.84** | [.000] |
| Time trend | .232 | 2.04** | [.042] | -.128 | -2.87** | [.004] |
| Time dummies | Yes | | | yes | | |
| N | 700 | | | 700 | | |
| Sargan (p value) | | .549 | | | .633 | |

**Interpretation**

The interpretation of these results is relatively straightforward. Firstly, it is clear from casual inspection of the coefficients that the determinants of factor demand are not equal across assisted and non-assisted areas. The elasticities of demand for capital for example are markedly different across the two sub samples. This is perhaps not surprising, as one would expect the price of capital to be far more important in assisted areas (where the subsidy is required to stimulate investment), while output is far more important in non-assisted areas, where capital is not subsidised. Unsurprisingly, perhaps, there is less of a distinction in the determinants of labour demand across regions, but what is clear is that inward investment impacts on factor demand in different ways across different factors.

In terms of the demand for unskilled labour, these results confirm those of Barrell and Pain (1997) that inward FDI does indeed generate a reduction in the demand for unskilled labour. While Barrell and Pain (1997) attribute this to the imported technology that accompanies inward investment, reducing the relative productivity of unskilled labour, it is also likely that there is an element of "crowding out" in domestic firms, following Driffield (1999) and Buffie (1993). This effect is similar across both assisted and non-assisted areas. All other variables in the unskilled labour equation work as expected, with wages being inversely related to labour demand, while output and the lagged dependent variable exert positive effects.

The results are rather different for the skilled labour model. Again, there is a large degree of persistence in factor demand, and output is positively related to skilled labour, with

wages exerting the expected negative effect. There is less difference across the two sub samples, with inward investment increasing the demand for skilled labour in both cases. This again is perhaps not surprising. The literature that seeks to link FDI to agglomeration suggests this is a likely result; see for example Markusen and Venables (1999).[12] However, the results concerning the impact of inward investment on the demand for skilled labour and unskilled labour are suggestive of a wider problem, that inward investment is likely to increase inequality not only between regions, but also within them, as it increases the returns to skilled labour but reduces that for unskilled labour.

Turning finally to the demand for capital, these results highlight many of the problems that previous researchers have had in attempting to find a stable relationship between domestic and foreign investment. The agglomeration literature noted above suggests that domestic investment will be boosted by inward investment, but only where the domestic sector is able to gain from the foreign presence (see also De Mello, 1999). This is the result that is demonstrated for the non-assisted areas, and concurs with the empirical results of Head *et al*. (1995). However, in areas where the domestic sector is not able to appropriate these gains due to the lack of a suitably developed domestic sector, then inward investment simply serves to crowd out domestic investment. This again is particularly alarming, as it suggests that inward investment is likely to increase returns on

[12] Markusen and Venables show that inward investment into a region will not only stimulate domestic activity, but that this domestic development may eventually replace the original FDI. This result is dependent on the phenomenon generally described as the linkage effect, and is well documented in the regional development and technology spillovers literature (see Rodriguez-Clare 1996). Here, linkages are developed between the foreign and domestic sectors, which with complementarities and scale economies, stimulate development in the domestic sector, and contribute to regional agglomeration economies. Aitken

capital in the non-assisted areas, while reducing them in those areas most needing an increase in investment.

**Summary and Conclusions**

Looking at the picture overall, a number of trends emerge which tie-in with Hymer's concern over uneven development and which sit uneasily with the goals of policymakers in attracting inward investment. Firstly, inward investment raises the demand for skilled labour but reduces demand for unskilled labour. Inward investment is thereby likely to increase inequalities both between and within regions by increasing the returns to skilled labour whilst reducing those for unskilled labour. Secondly in so far as a key objective of regional policy in attracting inward investment is to reduce structural unemployment, it is doubtful as to whether this is achieved by a heavy reliance on inward investment when the effect is to reduce demand for unskilled workers. At the very least this suggests that there is an incompatibility between the attraction of inward investment to reduce unemployment on the one hand and the goal of social inclusion on the other, suggesting in turn the need for greater attention as part of regional economic strategies to assisting such unskilled workers who lose out from such inward investment inflows. Thirdly, the results suggest that in non-assisted areas domestic investment will be boosted by inward investment, as the domestic sector is able to benefit from a foreign presence, but that this is not the case in assisted areas. Again this is likely to increase disparities across regions as it suggests that inward investment is likely to increase returns on capital in the non-assisted areas, while reducing them in those areas most needing an increase in

*et al* (1997) for example illustrate that where the performance of host country firms is improved by inward investment, then proximity to the foreign subsidiaries is important.

investment. In summary the overall effect of inward investment is likely to be an increase in inequalities within and across regions, something that Hymer had anticipated but that policymakers continue to overlook despite large-scale subsidies for inward investment.

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