

# **The Impact of Foreign Direct Investment on Human Capital Enhancement in Developing Countries**

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## **Executive Summary**

This is just the first draft of a paper to be delivered to the OECD. My understanding is that the final product may become a chapter of a longer document, hence the references below to ‘this paper/chapter’. The particular focus is on the impact of FDI on human capital enhancement in developing countries. While there are of course vast literatures on both FDI and human capital enhancement, the specific issue of how, if at all, the behaviour of TNCs impact on human capital enhancement in developing countries has not as yet been explicitly researched in any great detail.

Following the introduction, Section 2 of the paper refers briefly to the issue of FDI in developing countries. Section 3 sets out the issues as regards human capital enhancement. Section 4 then considers the evidence. The major impact of FDI on human capital enhancement appears to have been not through any effort of the MNEs but rather from governments seeking to attract FDI via enhanced human capital. Once individuals are employed by MNE subsidiaries, their human capital may be further enhanced through training and on the job learning. Those subsidiaries may also have a positive role on human capital enhancement in other enterprises with which they develop links, including suppliers. To the extent that human capital is thereby

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enhanced, this can have further knock-on effects both as that labour moves to other firms and to the extent that it leads to employees becoming entrepreneurs. It can be seen, therefore, that it is impossible to consider this issue in isolation, being linked so closely as it is to a range of other factors and policy issues. While developing countries have increased their share of public resources spent on education over the past two decades, comparisons across countries reveal little relationship between public spending on education and outcomes. One reason for this is that spending levels will cover a range of quality outcomes and also of distributional outcomes. After controlling for labour and physical capital, unequal distribution of education tends to have a negative impact on per capita income in most countries.

Human capital enhancement may be related in various ways to the issue of the transfer of technical knowledge. In the case of Thailand there has been a rather low level of transfer of both technical knowledge and management technique, and also of training in general, as the majority of FDI inflows has been in low to medium technology industry that does not require much skill, with a concomitantly low requirement for MNCs to invest in human resources, and even in the high technology sectors, the wide technology gap has inhibited the ability of the local employees to learn, either because the gap is so great that it is hard to bridge, or because the perceived gap simply deters MNCs from attempting to bridge it – and most likely a combination of the two.

In the case of Malaysia, the effect on the skill levels of the workforce as a result of the MNCs' own efforts has been relatively limited, the major education and training effort coming from Government. In Thailand, training programmes are being run jointly by international chambers of commerce from various countries and the Thai government organized in a consultative working group. Singapore has pursued national investment in education and training with a view to attracting FDI while inducing that FDI to upgrade.

The paper briefly considers three further issues, namely labour standards; growth, wages and equity; and developed country experience. The paper then concludes by considering policy implications. The question is how to encourage MNEs to invest in human capital enhancement. The key mechanisms, it is suggested, are those already being pursued, not all of which are obviously connected with human capital. Thus public education is vital. But so are policies to enhance technological diffusion. Firstly such policies will inevitably lead to further intervention from government and other public agencies to enhance human capital, as requirements and opportunities become uncovered. Secondly, technological diffusion will increase the incentives for companies to take advantage of them, which will in turn depend in part on human capital enhancement. And thirdly it will be an attractor not only to further FDI, but to FDI going into relatively high value added areas.

## **1. Introduction**

Reflecting on forty years of development experience, the World Bank (1991) concluded that the state has a crucial role in supporting key functions such as the provision of basic education. That report identified what it saw as the lessons from the more successful developing countries, one of which was their investing in people, including through education.

Conversely, the potential benefits of FDI for host countries include human capital development and higher wages (Maher, 2001, p. 2).<sup>2</sup> In addition, what is generally seen as a more important potential benefit, namely the dissemination of technology from developed to

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<sup>2</sup> [Note that references have been made to the paper by Maher which I understand may become the overall document of which the current paper will appear as one chapter, in which case these will become cross-references to the relevant sections of that overall document.]

developing countries, may itself depend in part on the extent to which the FDI has promoted human capital development (or at least is associated with its promotion).

The purpose of the current paper/chapter is to consider these links between FDI and human capital enhancement. Section 2 below refers to the general issue of FDI in developing countries. Section 3 sets out the issues as regards human capital enhancement. Section 4 then considers the evidence. The paper briefly considers three further issues, namely labour standards; growth, wages and equity; and developed country experience. The paper then concludes by considering policy implications. That the policy agenda has moved on is illustrated by how anachronistic UNCTAD's conclusion of just ten years ago sounds today, that 'As host countries, it is the primary responsibility of least developed countries to make their investment climate congenial to transnational corporations' (UNCTAD, 1991: 90). It is clear that the responsibilities are more symmetric and the linkages more synergetic than might be implied by such a formulation.

## **2. FDI and Economic Development**

The bulk of FDI goes, of course, not to developing countries but to developed, OECD countries; in 1999 77 per cent of total FDI inflows went to OECD countries (UNCTAD, 2000a). And even the minority of FDI that does go to developing countries is spread very unevenly, with two-thirds of total OECD FDI flows to non-OECD countries going to Asia and Latin American.<sup>3</sup> However, these FDI inflows do represent significant sums for many developing countries.<sup>4</sup>

The nature of these inflows has altered, though, with more going into mergers and acquisitions rather than on greenfield investment. Of course, mergers and acquisitions may lead to human capital development, but it may not, and it may even lead to the opposite, while greenfield investment would be expected to lead to at least some positive impact on human capital development. This increasing role of mergers and acquisitions may therefore undermine the extent to which incoming FDI enhances human capital development. However, it is impossible to predict either the motives or outcomes of mergers and acquisitions – which in both cases are in any case extremely mixed – and it may be that over time there is little difference according to what form any given investment started out as.

The potentially positive effects of FDI include inducing incumbent firms to upgrade their technology, and spill-over benefits so that local competitors can learn from MNCs' technological and managerial practices.

The potentially negative effects include the possibility of MNCs deliberately raising concentration levels, forcing competitors out of business by predatory pricing, taking away skilled labour and R&D staff from local firms, or engaging in restrictive business practices which, among other things, may deter technological development.

A well educated and trained workforce is one of the location advantages that host countries can provide to attract and retain inward FDI.<sup>5</sup>

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<sup>3</sup> United Nations, *World Investment Report*, various years, as cited by Maher, 2001, p. 7.

<sup>4</sup> For data on the transnationalization of economic activity, see UNCTAD (2001).

<sup>5</sup> This is included by Lee and Houde (2000) as part of natural and human resource endowments, including the cost and productivity of labour, which forms one of the six main location advantages of countries that they describe. The other five are market size and growth prospects; physical, financial and technological infrastructure; openness to international trade and access to international markets; the regulatory and policy framework

### **3. Human Capital Enhancement**

Developing countries need to have reached a certain threshold of development to be able to fully absorb new technologies. Enhancing human capital can therefore have a number of beneficial effects, both direct and indirect, for the companies concerned and also for the wider economy.

Firstly, human capital enhancement can be expected to lead to higher productivity and profitability as a direct result of the increased capacity of the employees to perform their tasks.

Secondly, there is the indirect effect of companies getting a greater payback than would otherwise be the case from investment in new technologies and process innovations, as the employees are better equipped to absorb and utilise both the codified and tacit knowledge through which the benefits of such investment are largely delivered.

Thirdly, human capital enhancement may improve not just the ability of employees to deliver greater productivity, but also their willingness, commitment and motivation so to do.

The above effects will be beneficial to the firms in which the employees work, and thereby to the economy generally. This wider economic benefit derives not just from the direct contribution of increased output to national income, but also through vertical linkages with suppliers and others. Labour turnover, on the other hand, may have rather different implications for the individual firm on the one hand, and the wider economy on the other. For the individual firm, some degree of labour stability will be required to ensure that the benefits from training flow back to the firm rather than moving on to rival firms. For the economy as a whole, however, such movement may generate positive spill-over effects. To some extent the successful creation of industrial districts can internalise what would otherwise be externalities to the firm, so that labour turnover becomes less costly, as the firm becomes more likely to benefit from recruiting already skilled labour, and will also benefit from the fact that other firms within the region are operating at or near the relevant technological frontier.

The UNCTAD conclusion from ten years ago quoted above went on as follows:

In an increasingly competitive environment for foreign investment capital, least developed countries should pay greater attention to the development of infrastructure, human resources and entrepreneurship which have a significant bearing on the locational choice of transnational corporations. (UNCTAD, 1991: 91)

While the same anachronistic balance of responsibility is evident – on the least developed countries rather than the TNCs – the key issue is already raised, namely the importance of human resources to the investment decisions of TNCs.

### **4. FDI, Human Capital Enhancement, and Development: the evidence**

Developing countries have increased their share of public resources spent on education over the past two decades. However, comparisons across countries ‘reveal little relationship between public spending on education ... and outcomes ... once country income levels are taken into account’ (Thomas, 2001: 164-5). One reason for this is that spending levels will cover a range of quality outcomes and also of distributional outcomes. After controlling for labour and physical capital, unequal distribution of education tends to have a negative impact on per capita income in most countries (López, Thomas and Wang, 1998).

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and policy coherence; and investment promotion (and protection). This is summarised by Maher (2001).

Regarding FDI, the evidence on OECD countries shows that foreign affiliates of MNEs have a higher labour productivity compared to local firms.<sup>6</sup> However, Cortes *et al.* (1998) found that TNCs in Thailand had lower shares of skilled employment in total employment than did locally-owned firms across a variety of industries, such as electrical and computer industries, with the share of skilled employees in total employment of US and European affiliates being sixteen per cent, in Japanese affiliates fifteen per cent, and in Asian newly industrializing enterprises' affiliates ten per cent, as opposed to eighteen per cent for local firms. This is probably due to the low-technology nature of assembly operations in ostensibly high-technology industries (UNCTAD, 1999: 287).

Human capital enhancement may be related in various ways to the issue of the transfer of technical knowledge. In the case of Thailand it has been suggested that there has generally been a rather low level of transfer of both technical knowledge and management technique, and also of training in general, for two main reasons.<sup>7</sup> Firstly, the majority of FDI inflows has been in low to medium technology industry that does not require much skill, with a concomitantly low requirement for MNCs to invest in human resources. Secondly, even in the high technology sectors, the wide technology gap has inhibited the ability of the local employees to learn, either because the gap is so great that it is hard to bridge, or because the perceived gap simply deters MNCs from attempting to bridge it – and most likely a combination of the two.

In a sample of sixty developing countries during 1965-87, economic growth rates were found to be especially high in countries with high levels of both education and macroeconomic stability and openness (World Bank, 1991). The impact of trade and investment openness thus depends on how well people are able to absorb and use the information and technology thus acquired. Analysing a sample of 1265 World Bank projects, Thomas and Wang (1997) found the rate of return to be three percentage points higher in countries with both a more educated labour force and a more open economy than in countries that had only one or the other.

In the case of Malaysia, Best (2001) sees the key developments as having been on the one hand the decision to try to attract in Multinational Corporations and on the other hand the question of skill levels, and in particular the interaction and dynamics of these two factors. As always with economic and industrial processes, the links are complex. Firstly, there was the need to massively increase skill levels. On the direct effect of MNCs on the skill levels of the workforce as a result of the MNCs' own efforts, there is no doubt that any such positive effect has been relatively limited – certainly relative to the scale of the task in the case of Malaysia. The major education and training effort came from Government. This public policy action plays an important part in the effort to attract companies. There is still an open question, though, of what becomes to the workers once they enter the MNCs, in two senses. Firstly, to what extent do the MNCs further develop the skills of the workforce? And secondly, to what extent does that workforce tend to remain within the MNC, rather than moving on to work in domestic companies? This latter pattern can have important effects on the domestic economy through knowledge spill-overs. The presence and activities of the MNCs may also have two other beneficial effects. Firstly, through influencing the behaviour of domestic firms in addition to the effect just mentioned of knowledge transfer through labour turnover. And secondly by employees within the MNCs moving not to existing domestic companies but to start up their own companies. All these various factors are seen to have been at work to some degree in Malaysia, and in terms of output and employment, Government policies have been successful; but Best warns that they risk being trapped in relatively low value added sectors.

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<sup>6</sup> OECD (1998), cited by Maher (2001, p. 19).

<sup>7</sup> See Lekluangarm (2001, p. 54).

In Thailand, training programmes are being run jointly by international chambers of commerce from various countries and the Thai government organized in a consultative working group (Brimble *et al.*, 1998).<sup>8</sup> Singapore has pursued national investment in education and training with a view to attracting FDI while inducing that FDI to upgrade (Lall, 1996); for example, Wong (1997) reports on how the government used skill creation to induce upgrading by TNCs in the hard drive industry.

The relation between FDI, human capital enhancement, and development will depend upon, or at least be inextricably linked with, the corporate strategy and market orientation of the TNC:

A study of Japanese affiliates in Brazil, for example, found that the introduction of total quality circles and just-in-time production methods required workers with above-average skills. These firms required workers with at least primary level education (eight years). Where they could not find sufficient qualified workers, they invested in adult education and short courses in literacy, numeracy, and group work techniques (Humphrey, 1993: 109). The same pattern was observed in TNCs in the automotive industries in Thailand, which required at least full primary school education, and undertook training efforts (van Assouw *et al.*, 1999).<sup>9</sup>

The collection of more systematic evidence on these issues would enable more robust conclusions to be drawn, and more reliable policy implications to be developed. The data collected by international agencies and individual governments tend to be too aggregated to allow the necessary distinctions to be drawn between the nature of the FDI, the sources and outcomes of investment in human capital enhancement and so on. Indeed, to really test the causal processes involved would most likely require data collection designed specifically for that specific task. As it is, the Director of Technology Transfer at the Ministry of Science, Technology and Environment has reported that there is no monitoring of the investment activity being promoted as regards technology transfer, the creation of supply linkages and skills training (OECD, 1999). To research these issues in greater depth would require the collection of such data across countries and over time.

UNCTAD (2000b) concludes that TNCs tend to invest more than do their local counterparts in training, tend to be more aware of emerging trends in training and the need for new forms of skill creations, tend to be more able to use state-of-the-art training materials and techniques, and tend to orient their training more to global markets. Intel and Matsushita in Malaysia are cited as examples of TNCs having established training facilities to ensure that their need for specialized skills is fully met. Nevertheless, UNCTAD (2000b) concludes that host countries cannot rely on TNCs to meet their broader or emerging skill needs:

TNCs use the technologies that are appropriate to local education levels and train mainly to create efficient operators of such technologies – they tend not to invest in creating the skills needed for higher levels of technologies as these emerge. Such investments are generally more expensive and long-term, and here it is educational institutions that have to meet the needs. In other words, the upgrading of the general skill level and provision of high-level specialized training is something that host countries have to do for themselves. Indeed, such upgrading itself can be used to attract higher-quality inward FDI and to induce existing investors to move into more complex activities. (UNCTAD, 2000b: 17).

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<sup>8</sup> Cited in UNCTAD, 1999, p. 274.

<sup>9</sup> UNCTAD, 1999, note 15, p. 287.

## 5. International investment and labour standards

UNCTAD (2000a) discusses the different impact on labour standards that different types of international investment may have, in particular distinguishing between mergers and acquisitions on the one hand, and Greenfield investment on the other:

Greenfield FDI may upgrade employment conditions more than M&As because the latter may tend to stick with the inherited norms and practices for some time. Furthermore, cross-border M&As can be used to renegotiate work conditions and lead to their downgrading. Thereafter, M&As may upgrade employment quality faster to bring the new affiliates in line with corporate norms and competitive needs. Over time, there is no reason to expect any systematic difference between the two modes. (UNCTAD, 2000a: 188)

Aside from the empirical question of what impact FDI tends to have on labour standards, there is the separate policy issue of whether there should be some setting of minimum labour standards. This occurs in two contexts. First there is the idea that core labour standards should be written into trade deals, as argued for example by the US representatives at the World Trade Organisation talks in Seattle in 1999. This was seen by some developing countries, such as India and Bangladesh, as an attempt to intrude a form of backdoor protectionism by the developed economies.

More relevant to the current paper/chapter is the idea of having such standards to which MNEs in particular would need to comply. The two contexts are of course closely linked, in that even when the motive for advocating such standards may be to prevent, for example, what might be seen as excessive exploitation of child labour by MNEs (as in the public campaigns against Nike), the mechanism for such measures would need to be international and would therefore inevitably surface in the context of WTO agreements. This issue is not, though, central to the current paper/chapter, and is discussed in detail elsewhere. For example, Sengenberger and Wilkinson (1995) argue for a two-stage process whereby each government would be required to introduce effective labour standards within their country according to the level of productivity that country enjoys, to be followed by a staged progression to common international standards.<sup>10</sup>

Chang (2002) sees such strictures regarding child labour and the like in the rather different context of the imposition by developed countries of policies that will prevent developing countries from following the successful paths trod by those developed countries previously.<sup>11</sup>

The one point that should, though, be stressed here is that if such standards could have the effect of engendering or at least encouraging an upgrading of labour standards as practiced by MNEs in a given host country, this could have a positive dynamic effect on economic development for all the various reasons referred to elsewhere in this paper/chapter, boosting not only productivity and quality in the companies concerned, but also having positive spin off effects on other firms with which the MNE affiliates are linked, on the likelihood of entrepreneurial spin offs from those affiliates, on the effect that employees have on moving from those affiliates to other companies, and so on. In other words, if higher labour standards can be achieved then there are numerous spin off and feedback effects which may deliver a range of economic benefits. The question is how best to achieve that upgrading of human resources.

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<sup>10</sup> See also ILO (1995: 72-5), Lee (1997) and UNCTAD (1999: 272-3).

<sup>11</sup> For other contributions to this debate, see Castle *et al.* (1998), DeMartino (2000) and Scheuerman (2001).

## **6. Implications for economic growth, wages, and equity**

Income inequality and development was reviewed in UNCTAD (1997), and the picture is unlikely to have changed significantly since then, other than inequality having most likely been exacerbated by the Asian crisis:

Turning to Asia, it is apparent that the crude stereotype of East Asia as a zone of 'low and decreasing inequality' is a misleading description not only because some of the countries have relatively high level of inequality, but also because inequality has increased in many parts of East Asia in the 1980s. there was an increase in Hong-Kong during 1986-1991 and a particularly sharp one in Singapore during 1979-1983, though it was moderate thereafter. Inequality appears to have been increasing in Taiwan Province of China since 1980, and in the Republic of Korea since the late 1980s. In Thailand the strong upward trend towards greater inequality which started in the mid-1970s, following the shift towards a more export-oriented strategy, continued in the 1980s. (UNCTAD, 1997:110)

The impact of TNC activities on the generation and upgrading of employment and on the building up of skills in host countries varies 'according to the type or motivation of FDI, the industries in which TNCs invest, the strategies they adopt, and host country conditions. They also depend significantly on the policies of host countries on FDI for increasing employment quantity, improving employment quality and strengthening human resource capabilities and for minimizing any negative effects that FDI may have in these respects.' (UNCTAD, 1999: 258).

Foreign affiliates tend to pay higher wages than local firms. This is for a number of reasons. Firstly, such affiliates tend to be concentrated in higher capital-, skill- and marketing-intensive industries, with concomitantly higher productivity. In a sense, therefore, this difference is due to a statistical artefact. However, to the extent that these are sectors that the host country would like to see developed, then it is still to be welcomed. In addition, the affiliates may have high sunk costs with a concomitant incentive to attract and retain skilled workers.

However, where low labour costs are the motivation for investing in a particular location, such as in an export processing zone, foreign affiliates will often pay lower wages than the domestic firms (ICFTU, 1999). Some TNCs take advantage of segmentation in host labour markets, so that where women are underpaid with respect to men in such markets this will also be found with respect to the TNC affiliates (Horton, 1999, Standing 1999). Conversely, UNCTAD (1999) reports that 'there is no systematic evidence' that TNCs are actively seeking to redress such inequities.

## **7. Developed country experience**

The experience of developed countries is clearly different from that of developing countries, as the motivation for attracting inward investment is rather different. In overall terms there are the same goals, in terms of contributing to employment creation, the balance of trade and so forth. But regarding the specific aim of enhancing human capital development, this is clearly less of an issue, or at least is of a different nature, with developed countries being more interested in the spreading of best practice, technological spill-overs and so forth. With that caveat, it is worth considering the relevance of developed country experience since some of the broader aims are indeed similar, such as hoping for productive linkages with existing supplier and other domestic companies, and the creation of new spin-off companies. And the success or otherwise in achieving these goals will depend in part at least on human capital issues.

The links between human capital enhancement and these other goals – of linkages and new firm creation – are two-way ones. Human capital enhancement can improve the chances of achieving these other goals, and the achievement of these other goals will in turn tend to enhance

human capital. Creating new firms and linking them together and networking them with existing firms and other institutions has been a key factor in the creation of successful economic regions and hence has been an explicit aim of governments, including in how to make best use of inward investment. Fransman (1998) reports that:

The experience of countries and regions that have given relatively high priority to the encouragement of small and medium-sized enterprises, but have met with only limited success, underline the difficulties involved.

One example is Scotland ... which despite a large number of policies and programmes designed to encourage the growth of small and medium-sized enterprises, and the existence of other well-developed institutions – such as universities, financial institutions, legal structures, and infrastructure – which on the face of it should facilitate the rapid growth of these enterprises, has a disappointingly low birthrate of small and medium-sized firms compared to other parts of the United Kingdom ... such as Cambridge and even more so relative to the outstanding areas of the United States like Silicon Valley. (Fransman, 1998, p. 7)

The experience of developed countries thus varies significantly both in how successfully they pursue such policies and specifically in what use they make of inward investment in such processes. But there is no doubt that where such policies have been pursued successfully, the role of an educated and skilled labour force has been important in attracting the investment, and also that the inward investment has in turn contributed to human capital enhancement, both of the employees and managers.

## **8. Policy Implications**

Drawing policy implications from empirical evidence is a difficult process. In interpreting the causes of past successes, care must be taken not to infer causation from mere correlation. Even more treacherous, perhaps, is to generalise from the experience of the past into the future, as if other factors had remained constant, or from one country to another. Thus, for example, in discussing the relevance for Southern African countries of the experience of East Asian countries, Fransman (1998) warns that:

...while some of the East Asian institutions have great relevance for Southern African countries, they cannot be seen in cookbook terms, namely as recipes that can be easily reproduced in other countries. Indeed, one of the main points of this paper is that institutions, by their very nature, are highly complex structures that have emerged over time, shaped by a mix of complex forces. Institutions are strongly history dependent and are usually to a significant extent country and location specific. (Fransman, 1998, p. 1)

However, it is clear that public policy has in several countries impacted positively upon human resource development in the context of inward investment. The obvious route through which public policy might aim to achieve such goals would be to pursue policies such as tax and other incentives to attract inward investment which would, by hiring and training local employees, thereby enhance human resource development. Ironically, though, this appears not generally to have been the case. Instead, human resources have more often been developed not so much by the MNEs that have established plants in the countries concerned – although clearly this does of necessity occur – but rather by the domestic governments themselves as a way of attracting that inward investment. Thus rather than inward investment enhancing human capital, the causal process has been the enhancement of human capital to attract inward investment. The end result is of course the same in the sense that both processes occur - human capital enhancement and inward investment - even if the nature of the human capital enhancement may be affected by whether the education and training has come from the domestic government or the

inward investor. But the policy implications are quite different. Specifically, the fact that inward investment and human capital development have tended to go hand in hand can not be interpreted as implying that the attraction of inward investment will necessarily lead to enhanced human capital. On the contrary, the evidence would suggest that such a policy approach would result in rather low levels of human capital enhancement. This in turn would impact negatively on inward investment, in both quantitative and qualitative terms. Not only might some inward investment be lost to other locations, but the inward investment that does continue to be attracted may tend to be of a lower value added type than would otherwise be the case.

The policy implications therefore appear to be twofold. If human capital enhancement is one of the outcomes hoped for from inward investment, then public policy can usefully operate along two routes simultaneously. First, by education and training, enhancing human capital directly as a means, amongst other things, of attracting inward investment. Such a policy, which has been followed explicitly by a number of governments, can be expected to have a positive impact on both the quantity and the quality (type, or nature) of inward investment.

Secondly, though, there are a range of policy measures that can then be taken to get the most out of the inward investment once it has arrived, both in terms of further advancing human capital and more generally. While the focus of the current paper/chapter is on human capital enhancement, this cannot be separated entirely from other potentially beneficial outcomes of inward investment, such as entrepreneurship or technological diffusion. To achieve either of these, there are a range of other public policy initiatives, quite separate from human capital advancement, that can be pursued. But human capital enhancement can nevertheless play an important part in both areas. Such measures can include the direct encouragement of MNEs' plants to undertake training of their workforce. There is, then, a continuum between the general policy referred to above, of education and training to attract inward investment, and policies to ensure that such training continues once employees enter employment with MNE plants.

The question is how to encourage MNEs to invest in human capital enhancement. The key mechanisms, it is suggested, are those already being pursued, not all of which are obviously connected with human capital. Thus public education is vital. But so are policies to enhance technological diffusion. Firstly such policies will inevitably lead to further intervention from government and other public agencies to enhance human capital as requirements and opportunities become uncovered. Secondly, technological diffusion will increase the incentives for companies to take advantage of these technologies, which will in turn require human capital enhancement. And thirdly it will be an attractor not only to further FDI, but to FDI going into relatively high value added areas.

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