



**HOW DOMESTIC AND FOREIGN FIRMS DIFFER  
AND  
WHY DOES IT MATTER?**

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*Working Paper No. 87  
January 2004*

**Abstract**

This paper reviews and summarises the results of selected studies on performance gaps between multinational enterprises and their domestic counterparts. Performance gaps arise in such fields as productivity, technology, profitability, wages, skills and growth. While these gaps are often attributed to foreign ownership of the affiliates, the theory of the Multinational Enterprise argues that these gaps are due to being a Multinational rather than the nationality of the firm. Empirical evidence on the existence of performance gaps between foreign and domestic firms is supportive of this view: foreign ownership turns out to be a much less important explanatory factor than normally assumed. Firm-specific assets and firm characteristics like industry, size, parent country and multinationality *per se* are more important. Such results are broadly consistent with those derived in the literatures on ownership change, on foreign entry and on spillovers. We conclude that there is little case for foreign direct investment promotion policies to discriminate between firms on the basis of ownership.

**Keywords:** Multinational Enterprise, Ownership, Foreign Direct Investment, Industry Studies, Country Studies, Firm Performance

**JEL-Code:** F2, L6

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\* forthcoming in: Journal of Economic Surveys, 2004.

## 1. Introduction

In one of the most influential books on Multinational Enterprises (MNEs), Buckley and Casson (1976) present comparisons of US-based MNEs with other firms in the same industry in eight countries by industries, divided into “research intensive” vs. “non-research-intensive” industries in 1970. Their comparison reveals that

- (a) in practically all US-industries, US-based MNEs undertake more R and D per unit of sales than do other firms in the same US industry;
- (b) in the majority of national industries, MNEs have a higher labour productivity than other firms;
- (c) MNEs employ a relatively high proportion of administrative personnel;
- (d) in 50 per cent of cases, US-based MNEs export a higher proportion of their output slightly below average than do other firms in research-intensive industries (and above average in non-research-intensive industries); and
- (e) in the UK manufacturing industry, foreign firms were generally more profitable than UK firms in the same industry (1965 and 1969).

Comparative research of firms has been directed to a number of issues like size, competition (e.g. Nickell, 1996), wages (e.g. Greenaway et al., 2000), productivity (e.g. Keay, 2000; Diewert and Nakamura, 1998; Hall and Jones, 1999), export propensity (e.g. Cohen, 1973) and technology (e.g. Nelson, 1991). An area, where substantial differences between firms are repeatedly reported in empirical studies, is the comparison of the *economic performance* of domestic-owned (DO) and foreign-owned (FO) firms. The superior performance of the latter over the former group would not surprise us in a comparison of a developed home and a developing (Willmore, 1986) or transition host country. Yet, FO firms also reveal superior performance versus their counterparts in developed countries. The performance gaps were *inter alia* examined in areas like productivity, wages, profitability, growth, market-entry strategies, survival, labour relations, market shares, bankruptcy, exit, size, skill intensity, innovatory activities and advertising intensity. The revealed performance differences have been partly attributed to ownership, but also to firm characteristics.

Descriptive analysis on performance gaps is particularly misleading, if there are a few large FO firms compared to a small and medium-sized DO sector (e.g. Ireland). Descriptive evidence therefore has often wrongly convinced policy makers to support FO firms *qua* ownership and has led to unnecessary distortions of allocation of resources.

For simplicity we denote as “domestic-owned firms” those majority-owned firms which are either purely domestic firms or multinationals. Affiliates of a parent company located in a foreign country are referred to as “foreign-owned firms” in subsequent sections.

The questions then are why performance gaps between FO and DO firms exist theoretically and whether foreign ownership explains such gaps empirically. The purpose of this article is to survey the vast literature that addresses one or more of the performance gaps.

Section 2 considers the importance of this topic by discussing current issues. In section 3 the main ownership-related arguments and structural explanations that explain performance gaps are assessed. Section 4 focuses on methodological issues. Empirical evidence is reviewed in section 5. Section 6 refers to related literature. Apart from such aspects as whether gaps exist and whether they can be attributed to foreign ownership, an important normative question is discussed in section 7: “Do performance gaps justify discriminatory FDI promotion policies between FO and DO firms?” Section 8 discusses open question and summarises. Our survey concludes first, that the relevance of foreign ownership as a determinant of performance gaps is often overstated relative to structural factors and secondly, that multinationality *per se* has been given too little attention in past research.

## 2. Current Issues

What are the reasons for the continuous interest in the comparative performance of DO and FO firms?

Firstly, societies devote substantial resources in investment promotion, especially the attraction of FO firms. Much of the recent literature has suggested the importance of FO firms for economic progress (productivity, technology) in host economies besides direct technology transfer and diffusion or trade (Keller, 2000). Considerable part of the benefits that might accrue to host countries or host-country firms are rooted in the belief of a systematic superior performance of FO firms compared to DO firms. If this were the case, it would have important normative implications for investment promotion policies, since there are significant costs associated with “marketing a country”. Are countries with a larger share of FO firms better off, because these firms operate more efficiently than DO firms thus generating social gains? Should countries promote FDI (see e.g. Hanson, 2001) based on externalities from a superior performance of FO firms? Is it a viable view to believe that increasing the share of FO firms will raise average performance of the total economy?<sup>i</sup> Empirical evidence emerging on negative spillovers (e.g. Chung et al., 1996) casts doubt on such issues.

Secondly, the upsurge of international mergers and acquisitions has led to substantial increases of the share of FO firms in the total population of firms of countries, both in manufacturing and in services. At the same time when new issues of comparison emerge, the globalisation process has led to a situation where the majority of firms is multinational in scope, with few exceptions of locally segmented markets. Yet, the side effect is that the increasingly globalised ownership structure of firms (Brainard, 1993; Berle and Means, 1932, LaPorta et al., 1999) makes it almost impossible to attribute a certain country of (ultimate) ownership to a firm.

Thirdly, international competitiveness is another subject where the need to separate these two groups of firms is increasingly recognised in comparisons of countries and industries.

Fourthly, there is a genuine economic interest in the efficiency of different firm organisations, such as organisational hierarchies or systems of corporate governance (anglo-american vs. continental).

Fifthly, comparisons between firms or groups of firms raise a number of important and difficult-to-overcome methodological issues, also frequently found in international comparisons in various other fields of economic analysis.

## 3. The Theory of Multinational Firms and Performance Gaps

The general question of performance differences between firms has been approached in the industrial organisation literature by drawing on market structure and firm conduct. Market structure impacts on the conduct of firms and the resulting performance feeds back on the structure and conduct. While “structure” includes aspects like firm size, concentration or the existence of entry-barriers, “conduct” relates to the creation of entry-barriers, pricing policies and strategic behaviour in particular. The latter factor is of considerable interest here, since it has been largely excluded from the mainstream international business literature (see Acocella, 1990), which focuses primarily on the combination of firm- and location-specific advantages.<sup>ii</sup>

The following section assesses how far the international business and the industrial organisation fields have come in understanding how ownership and performance gaps between groups of firms are related. In particular, it is asked, whether performance gaps are due to being foreign (i.e. the nationality of the firm, subsection 3.1.) or whether they are due

to being an MNE (i.e. the network of affiliates, subsection 3.2.). Also, criticism concerning the latter is dealt with (subsection 3.2.1). The section concludes that explanations related to the multinationality of firms are far more relevant than those relating to ownership (subsection 3.3.).

### *3.1. Nationality of the Firm*

Public perception, that national ownership matters is difficult to substantiate in the theoretical literature. A convincing idea related to ownership is that corporate governance systems differ across nations and this has a measurable effect on firm performance. If corporate governance structures are still largely national (Buckley 2000, p. 289) or if there exist at least an anglo-american and a continental system, they may lead to performance differences, in case their monitoring efficiency differs. Also, the goals of the management may differ (e.g. growth vs. profitability) depending on the expectations of the shareholders and stakeholders. Since there are large numbers of possible determinants (e.g. the dispersion or concentration of shareholders) it remains mostly an empirical question which system is superior in terms of firm performance.

### *3.2. The Specific-Advantage Hypothesis*

The theory of the MNE deals with the questions, why MNEs exist and why they invest abroad. In the centre of the economic theory of the MNE is the specific-advantage hypothesis (Dunning, 1973; Caves 1974, 1996; Koutsoyiannis, 1982; Markusen, 1995). It is argued that the existence of MNEs hinges on the nature of the specific advantage of the firm. The MNE transfers firm-specific advantages internally across borders. These advantages can be denied to competitors (i.e. kept internally by the creator, the firm) and are transferable within the firm (i.e. it is internationally mobile). MNEs will therefore be concentrated in knowledge-intensive sectors, which are generally characterised as growth- and high-productivity industries. In the words of Markusen (1995, p. 172), "multinationals tend to be important in industries and firms with four characteristics: high levels of R&D relative to sales; a large share of professional and technical workers in their workforces; products that are new and / or technically complex; and high levels of product differentiation and advertising. These characteristics appear in many studies, and I have never seen any of them contradicted in any study."

The *incentive to internalise* the advantage stems from the possibility of market failures when contractual market transactions are used. The *mobility* stems from its intangible nature and leads to low marginal cost when the advantage is used in an additional affiliate abroad.

Why these firms invest abroad needs to be explained by the position of the MNE relative to its competitors abroad. It is conceivable, that a foreign entrant into a market has some disadvantage vis-à-vis established firms. The specific-advantage hypothesis states that the firm-specific advantage compensates for such disadvantages<sup>iii</sup> (Koutsoyiannis, 1982). A key prediction of this strand of theoretical literature then is that the firm-specific advantage gives rise to productivity gaps. This argument is consistent with the notion that MNEs possess assets, where imitation by competitors is very difficult and diffusion therefore slow.

The Industrial Organisation (IO) view of the MNE focuses on the fact that MNEs enter a market abroad to exploit optimally their firm-specific advantage. Contrary to the specific-advantage hypothesis, here firm-specific advantages are not assumed as given. The IO-approach argues that the firm-specific advantages referred to above, arise "as a product of oligopolistic rivalry" (Acocella 1990, p. 234). The contribution of the IO-approach is therefore to (re-)introduce aspects of power and strategic behaviour. The strategic elements of

FDI are important and include for example: creation of excess capacities or over-investment by the incumbent (FO) firm in order to deter market entry by competitors (cf. Lyons, 1987); take-over of a competitor to reduce excess capacity and pressure on market prices; the creation of entry barriers based on firm-specific advantages, e.g. Harris (2002); collusion and oligopolistic reaction etc. What these examples have in common is that their outcome is usually inefficient (Acocella 1990, p. 241). Such behaviour is especially pronounced with MNEs, since “they face each other in several markets and hence recognise their mutual dependence more fully” (Caves 1996, p. 90ff.). Yet, to reduce the notion of strategic behaviour to the level of firm competition would fall short of the concept as “strategic interdependence with respect to governments and unions is particularly interesting” (Lyons 1987, p. 78). It is sufficient to note here that strategic behaviour may give rise to performance gaps and is especially important in industries where market dominance and few firms are found. Abd-el-Rahmen (1991) emphasises for example, that performance gaps between firms with identical products – under given location-specific advantages – are explained by firm-specific, individual behaviour under the conditions of imperfect competition.

As Acocella (1990) convincingly argues, it is not only the mere existence of firm-specific advantages that gives rise to superior productivity, but also the multinationality of the firms itself. This aspect is stressed *inter alia* by Doms and Jensen (1998), who find only very few performance gaps between U.S. DO MNEs and FO MNEs in the U.S.<sup>iv</sup> Several types of advantages of being part of a global network within an MNE are mentioned in the recent literature: (a) FO affiliates enjoy better access to foreign markets through intra-firm trade and network economies, such that they can operate more profitably on a larger scale (Globerman et al., 1994, p. 154). (b) FO affiliates can draw on their parent’s managerial expertise to manage the complexity of larger scale. (c) The possibility of spillovers between plants within a multi-plant firm should not be underestimated as a factor in the case of horizontal integration or gains of specialisation deriving from the fragmentation of production stages in vertical integration (Egger et al., 2000); (d) MNEs through their industrial and geographical diversification have a more extensive set of information and better capacity for evaluating different situations (Caves, 1996). (e) Instruments available to the MNE against national governments and regulations are more incisive than those used for the same purpose by uninational firms (*ibidem*; e.g. transfer pricing). (f) Discussion of firm-specific advantages has led to the conclusion that MNEs are found in technology and knowledge-intensive industries. Access to superior technology creates additional possibilities for learning internally and building on existing strengths (path-dependency) is important in endogenous growth processes. (g) Also to tap into local knowledge bases is easier if a firm is geographically diversified. Non-MNEs may not have these possibilities and operate older, less efficient plants. (h) Lastly, accounting practices of MNEs (e.g. profit shifting) may lead to gaps in the financial performance.

If these arguments find any empirical relevance, performance among MNEs should hardly differ, regardless of ownership or nationality.

### 3.2.1. Some critical remarks

While the specific-asset theory of MNEs has gained wide attention in explaining performance gaps, it has been challenged both, on logical and empirical grounds. In short, the argument suggests a redundancy of internalisation and ownership advantages. For example Rugman (1980) argues that the eclectic theory is a subset of the general internalization theory. Also, Casson (1987) in the same vein argues that “(o)wnership advantage is not necessary because a combination of internalization and location advantages is itself sufficient to explain multinational activities.” (1987, p. 33; emphasis added)

The second line of criticism is based on empirical results and falls into two separate arguments. First, Acocella (1990) maintains that “(t)he maintenance of the ownership

advantage category as a necessary condition would be at odds with foreign direct investment by enterprises which are relatively backward in technology, marketing and management. Such cases are common in both developed and developing countries and this is an important fact in so far as it shows, for example, that success factors are not necessarily bound up with technological progress, though in some cases this can be an important factor in competitiveness." (p. 235)

Building on such considerations a second, more recent line of argument suggests a new causal link between FDI and firm-specific advantages. Fosfuri and Motta (1999) argue for a "technology acquisition" rationale for FDI on the basis of spatially-bounded spillovers. In their view laggard firms acquire location-specific knowledge via FDI on which they build their firm-specific advantages subsequently. Thus, FDI becomes the source, rather than the consequence of firm-specific advantages and performance gaps may be reversed.

The criticism just presented neither implies that firm-specific advantages are irrelevant, nor that they may not be important explanations of performance gaps. Rather, it suggests that firm-specific advantages are not a universal explanation of performance gaps. More precisely, inferior performance of FO compared to DO firms might be explained by the *lack* of firm-specific advantages, yet which also is consistent with the multinationality of firms.

### 3.3. *Résumé*

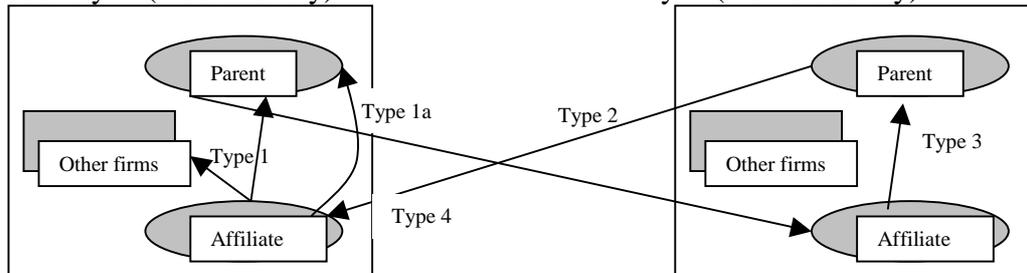
Discussion of the two main strands explaining performance gaps, namely nationality of firms vs. specific advantage theory, leads us to conclude that the specific-advantage hypothesis matters more from a theoretical point than nationality. This implies the expectation that performance gaps between MNEs, no matter what their ownership, should be smaller than between MNEs and uni-national firms, with the exception of "sourcing" FDI. Advantages of MNEs need therefore be included and turn out to be significant in empirical studies to which we turn now.

## 4. A note on methodological approaches

The use of firm-level data is not without problems and requires careful analysis. Some major methodological aspects – apart from aspects of pure measurement (e.g. Bernard and Jones, 1996) - include (a) the type of comparison, (b) the choice of the unit of analysis, (c) the choice of the control variables and (d) the choice of the comparison group of firms.

(a) There are basically four types of comparisons possible when considering the performance of FO firms (*cf.* Figure 1). While in principle, the type of comparison should be driven by the problem in question, *in praxi* we find different comparisons relating to the *same* problem.

Figure 1. Type of comparisons  
Country A (Host country)



Type 1. Majority / minority foreign-owned affiliate in host country vs. rest of the host country (i.e. domestic firms, exporters and domestic Multinationals)

Type 1a. Foreign-owned affiliate in host country vs. Multinationals only in host country

Type 2. Foreign-owned affiliate in host country vs. parent company in home country

Type 3. Domestic Multinationals in home country vs. non-Multinationals (exporters, respectively) in home country

Type 4. Compares parent companies based in the host country to their affiliates abroad, i.e. in the home country. It should be emphasised that this is *n o t* simply the opposite of Type 2 comparisons, since there might be a huge difference in labour productivity and other performance indicators between countries A and B.

(b) What is the appropriate level of analysis - the firm, establishment, plant or enterprise level? The level of aggregation has important consequences for a meaningful choice of industry level and for the relevant control variables, too. (Howenstine and Zeile, 1992, p. 45) The higher the level of aggregation, the more diversified are firms and therefore they can be classified only in broad industries. Large and long-run databases often contain data on plant level *and* firm level, which necessitates a choice, if not both are to be used. Moreover, some theoretical arguments discussed above refer to the *firm* level, while empirical analysis is often on the *plant* level, without a possibility to examine intra-firm plant spillovers.

- (i) *Firm-level analysis* is to be preferred, if economies of scale at the firm level may be the source of substantial performance differences as they are not captured by plant-level analysis (an exception is e.g. Maliranta, 1997). For example, using the ARD (UK), Griffith (1999b) argues on the advantage of using expenditure on physical capital by FO firms and to use establishment rather than plant level data.
- (ii) *Plant-level analysis* also has advantages as firm-level data often hide important dynamic activities within the firm. See e.g. McGuckin et al., 2000, where the results derived on the plant level do not hold on the firm level. Another example is a paper by Harris (2002) who criticises Griffith (1999b) on the basis that she uses establishment rather than plant data: "... the establishment is not an economic unit, like a plant; it is an accounting unit ... A typical establishment includes plants of different sizes and different vintages, and with relatively frequent compositional changes over time this makes it difficult to undertake certain types of analysis in a economically meaningful way." (p. 2) An example of relevance for productivity gaps would be the calculation of capital stock of different vintage in various plants of the same establishment. In principle, plant-level analysis could take intra-firm spillovers into account, an important aspect of multinationality. One particular area where such intra-company spillovers are of relevance are mentioned by Doms and Jensen (1998, p. 238), i.e. "auxiliary establishments". Such establishments create overhead costs, which may reduce the comparability between plants. Plant-level data also generally offer advantages over firm level or industry level data, since they may account for the large intra-industry variance of the indicator in question, which often is larger than the inter-industry variance (e.g. Doms and Jensen 1998, p. 236).

The choice of the unit should thus be guided by the idea to separate the effects of ownership characteristics and not to hide them behind factors correlated with the gap in question. For example, if higher wages in DO firms are due to better monitoring this should not be buried in the fact that larger firms employ more skilled labour or are more productive. Such difficulties also explain why international comparative studies are scarce.

(c) Many authors emphasise that the possibility of a spurious relationship exists "between foreign-ownership levels and productivity levels. [...] Observations of higher average productivity levels among foreign affiliates may simply reflect the fact that foreign affiliates are clustered in industries enjoying above-average productivity levels for reasons unrelated to Foreign Direct Investment" (Globerman et al. 1994, p. 144; *cf.* also Howenstine and Zeile 1992, p. 53; Girma et al. 2001). The danger that the impact of factors like size and industry be wrongly attributed to ownership is normally avoided by using a set of control variables. In many cases, controlling for firm-specific variables reduces substantially the weight of an ownership variable.

(d) The last important issue mentioned here is the composition of the “non-foreign” firms, i.e. the remaining firms after subtracting the FO firms from the total population. This residual may consist of a mixture of purely national firms, of multinational firms and of exporting firms. Since, as has been pointed out in the theory section, multinationality is expected to matter, separating these groups of firms should yield additional important information about the role of ownership for performance gaps.

## 5. Past Empirical Research

The focus of this review was put on the explanations for performance gaps in *recent* studies, preferably other than cross-section evidence (like, e.g. panel studies) covering a broad range of *countries, industries and types of gaps*. The studies should have either been published as working papers (accessible on the web or in print) or preferably already been published or forthcoming in internationally leading *Journals* and should have been cross-cited by other authors in the field. In exceptional cases, permission to quote unpublished work has been granted by the author(s). In total, 67 studies have been considered, of which 54 studies have been ultimately included. By host country, the majority of studies refers to the U.S. and the UK (31 cases). Productivity gaps, wage and skill gaps are most researched performance indicators (39 cases, with several studies comprising multiple performance indicators). Lastly, most studies are recent empirical work (38 studies were published after 1995). All studies focus on the manufacturing sector, due to data availability, except Oulton (1989b) who studies the services sector.

The standard empirical model has the following structure:

$$A\_gap_i = f_i(FDI_i, Z_{i1}, Z_{i2}, O_{ij}), \quad (1)$$

where  $Z_{ij}$  is a vector of other firm- and industry-specific factors, postulated to impact on  $A\_gap$ .  $A\_gap$  may be defined in levels, in growth-rates or in differences between DO and FO firms. The components of  $Z_{i1}$  include a wide range of industry-specific and firm-specific variables, according to the underlying theoretical arguments mentioned in the previous section. Three variables, namely size of plants or firms, industry and parent country are standard control variables irrespective of the particular gap. The other variable of interest is  $FDI_i$  and measures, whether an indigenous firm is a multinational firm or a purely domestic firm. The components of  $Z_{i2}$  are specific to the gap in question. Ownership is accounted for by the variable  $O_{ij}$ , which may be a dummy variable (0,1) or represented, e.g. by the share of employees in FO firms.

The following subsections address explanatory factors by type of the gap.

### 5.1. Wage Gaps, Skill Gaps and Labour-relations Gaps

*Wage gaps* between firms in general arise for a number of economic and institutional reasons. Wage gaps have been analysed *inter alia* by Buckley and Enderwick (1983), Blanchflower (1984), Globerman et al. (1994), Feliciano and Lipsey (1999), Oulton (1998a) and Girma et al. (2001). Wage differentials may first arise on factors, such as differences in productivity levels (Buckley and Enderwick, 1983, p. 400). The organisation of production by firms or their use of production technology may require that FO firms employ more skill-intensive employees than DO firms (e.g. Doms and Jensen 1998, p. 240f). The wage gap may thus be an indication of a skill gap, as relative wages for more skilled workers have been rising in general.

Also, higher wages may give rise to higher levels of effort by workers. The high capital intensity of FO firms that has been found in many empirical studies, encourages firms to pay efficiency wages, since it is more costly for capital-intensive firms to suffer employee shirking or absenteeism (Globerman et al. 1994, p. 153; also Feliciano and Lipsey, 1999, p.

9). Even comparable DO firms in the same industry may pay lower wages than FO firms, if the latter consider themselves less capable of monitoring workers in a foreign environment.

Globerman et al. (1994) find that the wage gap vanishes, once they control for size and capital-intensity. Feliciano and Lipsey (1999) establish qualitatively identical results for U.S. manufacturing, with wage gaps related to industry composition. For other sectors, however, a gap of 8-9% remains even after controlling for size, industry and U.S. state. A declining but persistent wage gap of five percent has also been revealed by Girma et al. (2001) upon a large sample of foreign and domestic subsidiaries in the UK after controlling for labour productivity. A paper by Oulton (1998a) found that foreign establishments in the UK are more human capital intensive (positively correlated to wage levels) than domestic establishments, even within the same industry. Aitken et al. (1996), examining wage gaps in Mexico, Venezuela and the United States, report that higher levels of foreign investment are associated with higher wages and that the lack of spillovers between FO and DO firms explains the wage gap. Wage differentials are persistent over time and across industries after controlling for a number of variables.

Closely related to wage gaps are skill gaps, their main source being superior technology used by one group of firms. If the specific-advantage hypothesis is valid, we should expect FO firms to employ more skilled workers, since sophisticated production technology requires more workers of higher skill. In another view, the higher wage in FO firms is the outcome of a bargaining game, in which workers share the extra rents generated by the superior technologies (Head 1998, p. 257).

There might also be an incentive for workers in FO firms to invest in FO-firm-specific human capital, expecting a “fair” wage rate to be higher than that in smaller, less competitive DO firms (e.g. in Ireland).

Howenstine and Zeile (1992), Blonigen and Slaughter (1999) and Doms and Jensen (1998) reveal skill gaps between FO and DO firms in the U.S. This is clearly related to capital-intensity and thus is a determinant of productivity gaps discussed in subsection 5.2 below. Here, one has to control for the difference in shares of production workers to non-production workers in FO firms and DO firms in order to take into account the skill-mix of activities within industries. Howenstine and Zeile (1992) find that FO affiliates in the United States are concentrated in manufacturing industries that require a higher level of employment skill. They examine, whether these characteristics differ significantly between FO firms and DO firms in the same industries and find that for one half of the industries, payroll per employee (as a broad measure for employee skill level) in FO firms exceeds that of DO firms by more than 10 per cent. Foreign ownership is, however, not related to a factor that might explain such difference, namely average scale of plant operations. Blonigen and Slaughter (1999) reveal that inward FDI does not contribute to skill upgrading within manufacturing industries. On the contrary, distinguishing by type of investment, they show that Japanese green-field FDI have a lower demand for skilled labour in the US. This result deviates from evidence on Ireland (Figini and Görg, 1999) which points to a U-shaped relationship between skilled and unskilled labour within sectors. Thus, labour market segmentation may have its roots in the presence of foreign MNEs which transfer higher-level technologies to the host country. Such results are in line with other findings that inflows of FDI in the UK have led to a shift in labour demand in favour of higher skill (Driffield and Taylor, 1999). Also, the impact of FDI is said to be larger than that of trade or technology transfer.

New investments are often associated with higher labour productivity. If FO firms are generally younger firms, the positive correlation between foreign participation and wages could represent a vintage effect (Aitken et al. (1996, pp. 354, 358).

If FO firms incur higher search costs in foreign labour markets, they tend to reduce labour turnover by paying higher wages and to engage in other benefits like training etc.

Summarising, reasons why FO firms pay higher wages derive either from their superior performance or from certain disadvantages.

*Labour relations* in DO and FO firms have been studied particularly for Canada (Carmichael, 1992; Cousineau, 1989; Creigh and Makeham, 1978; Greer and Shearer, 1981). Evidence does generally not point to “bad behaviour” of FO firms.

Concerning labour relations, it is normally assumed that both parties, unions and management, have an interest to negotiate. Negotiations depend mainly on bargaining power and market conditions. Foreign ownership implies that there is a third party, the parent abroad, which may increase the length of negotiations. Higher strike-propensity by FO firms may stem from the fact that information about the firm is less credible to the union when it applies to an affiliate of a foreign company or that the foreign company has less commitment towards a foreign region than to its home region. Lower strike-propensity derives from the fact that FO firms may pay higher wages than national firms (at least within the same industry) or that FO affiliates must appear to be “good corporate citizens”. An institutional argument applies in some cases, if FO firms have a weaker position vis-à-vis labour unions than DO firms. If, therefore, FO firms adhere to legislation mandating minimum wages, overtime pay etc., their wages will be higher. They may therefore set up protocols for negotiation, which reduce information asymmetries and speed up negotiations.

Higher wages may also provide an incentive of domestic workers to accept foreign management, e.g. following a take-over of a DO firm by a FO firm. Larger firms (plants, respectively) pay higher wages (rents accruing from the market power are shared with labour) and this is a universal finding in many studies. In countries with centralised wage bargaining, a preference among FO firms to engage in plant level bargaining is often discernible.

The main institutional argument relates to the role of labour unions. On the one hand, FO firms may pay a wage premium to deter unionisation (Doms and Jensen 1998, p. 243), if there is a desire of FO firms to discourage unionisation or buy-out restrictive job practices. On the other hand, where FO firms enter an industry with a high level of unionisation, the higher degree of unionisation may lead to higher wages. Such evidence is produced by Feliciano and Lipsey (1999), on the regional distribution of FO firms in the U.S. After a take-over, the management in a FO affiliate may be under higher pressure than a management of a DO firm. Therefore, these managers “set their sights higher” (Ylä-Antilla and Ali-Yrkkö, 1997). Normally they also seek to have a co-operative relationship with the workers in order to fulfil the goals set up by their parent company abroad.

Summing up, the studies related to wage and skill gaps suggest that factor demand of DO firms and FO firms – even within the same industry – varies considerably, but only small part of the gap is attributed to foreignness, rather size and factor intensities are important explanatory factors.

## *5.2. Productivity Gaps*

The main explanation of productivity gaps is no different from explanations relating to the existence of multinational firms as has been discussed above. Apart from the existence of such advantages, there are additional factors, most of them are closely related to or deriving from the fact of multinationality.

This is for example established by Davies and Lyons (1991) in a decomposition of a productivity gap of 20 percent into a “structural” and an “ownership” effect. The gap is persistent on different levels of aggregation, i.e. on 2-digit and 3-digit level industries and the weight of both effects remains mainly unchanged. Therefore, within 2-digit level industries, contrary to expectations, FO firms do not cluster in the high-productivity 3-digit industries. The gap therefore is more a firm- or plant-specific phenomenon, rather than industry related. There is also a size effect reported in many studies as lower productivity firms are acquired if they are larger firms (*cf.* Feliciano and Lipsey 1999, p. 11).

Productivity gaps have gained the widest attention in empirical research in this field (e.g. Pratten, 1976; Davies and Lyons, 1991; Maliranta, 1997; McGuckin and Nguyen, 1995; Moden, 1998; Howenstine and Zeile, 1992; Oulton, 1998a, b; Ylä-Anttila and Ali-Yrkkö, 1997; Doms and Jensen, 1998; Griffith, 1999a, b; Harris, 2002; Harris and Robinson, 2001, 2002; De Backer, 2002; Huskel et al. 2002; Conyon et al. 2002a; Girma et al., 2001).

Besides ownership factors, a first additional source of productivity gaps are differentials in the mix of activities undertaken by FO firms and DO firms (Globerman et al., 1994). “Strategic demands frequently require that individual units be assigned differentiated roles” (Gomes and Ramaswamy 1999, p. 177). If FO firms undertake a set of activities, different from that pursued by DO plants, they might perform better in the case of a higher degree of specialisation; or in research units, which employ highly trained staff; or in highly-automated production facilities, which require highly qualified blue-collar workers and have above average skill levels.

Also, failure of domestic producers to adopt ‘best practice technology’ or ‘frontier technology’ (Maliranta 1997, p. 2; Oulton 1998a, p. 50) has been discussed giving rise to productivity gaps. Inferior access to technology by DO firms may have several explanations itself. Their geographical range of operation may be smaller, they may be absent from certain markets at all, lacking the possibility to tap into the local knowledge-base abroad or not profiting from regional agglomerations; the feedback from their affiliates may be less efficient or the activities of the affiliates do not allow technology sourcing; they might not have the necessary information; or they lack the capability to make efficient use of acquired technology, which is related to learning processes and path dependence mentioned above. Most factors are related to multinationality. Such issues have been termed “best practice model” vs. “random model” by Davies and Lyons (1991). The latter suggests that firm-specific advantages may be randomly distributed, i.e. they are not systematically related to industry factors.

Another source of productivity gaps is simply a higher input intensity per worker, which is related to capital- or technology-intensity. Girma et al. (2001) conclude that the substantial productivity gaps ascribed to foreign ownership declines to five per cent after controlling for labour productivity. As Globerman et al. (1994) show, the gap vanishes, once they control for size or capital intensity. Oulton (1998a, b) studies productivity gaps in the UK. In the manufacturing sector labour productivity is 38 percent higher in FO firms, which is mainly determined by their higher capital intensity (physical and human). In service industries where Oulton examined over 49,000 companies, a productivity gap of one third over DO firms’ productivity remained after controlling for various structural differences (size, age, parent country). Again, a more skilled labour force and a higher capital-intensity in FO firms explains most of the variation. Using a different methodological approach Griffith et al. (2001) point out that the same factors matter, namely skill intensity, size and capital intensity, yet they explain very different proportions of the variation in the three industries examined. UK firms not changing ownership are used as a control group. The role of ownership therefore differs, but there is no significant difference between DO and FO MNEs.

Oulton (1998a) provides two reasons why FO firms may be more capital intensive than DO firms, both are related to higher costs of capital: (a) DO firms face higher costs of capital than FO firms; and (b) DO firms are more exposed to the home market, while FO firms are better able to spread risk globally (but this applies to globalised DO firms as well). Also, DO firms have to rely on credit markets whereas FO firms have access to cheap sources of credit (e.g. the cash-flow of the MNE-network) without paying a risk premium. But this again relates to the question of uni-national vs. multinational firms rather than to FO vs. DO firms.

Evidence by Howenstine and Zeile (1992) shows the tendency of FDI establishments to operate in industries characterised by higher capital intensity. While this evidence is only descriptive, it gives an indication of higher labour productivity (depending on the type of the

underlying production function). Maliranta's study on more than 5,000 Finnish plants reveals a weak foreign ownership effect (with uncertain causality). Employing a large number of control variables, *inter alia* multi-plant vs. single-plant firms, total factor productivity (inputs are: labour, machinery, electricity, rents per hour) is used as the dependent variable. Maliranta also points to time effects (e.g. in the implementation of technology in a newly acquired plant).

Using a sample of UK car firms and distinguishing between acquisition and greenfield entry, Griffith (1999a,b) finds relatively small differences in total factor productivity and FO firms are not more productive than UK DO firms in subsectors. Harris (2002) repeats the estimation of Griffith (1999a) and using the same methodology, finds the opposite results on the plant level, namely that productivity gaps do exist. Girma et al. (2001) focusing on the UK manufacturing sector include total factor productivity and find a growth differential between DO and FO firms. Griffith and Simpson (2000) – building on Griffith (1999a, b) – extend the analysis to the total manufacturing sector, dividing FO firms into “always FO” and into “FO taken over” (changing ownership). The authors report gaps of total factor productivity between these two groups, depending on whether one looks at levels or growth rates. They also find a skill gap in line with the productivity gap.

A paper on U.S. establishments by Doms and Jensen (1998) examines the role of multinationality for productivity. DO firms that are MNEs are compared to FO affiliates and purely DO firms. The multinational DO firms and FO firms perform better than the purely DO firms, suggesting that foreign ownership is of less importance. Observed differences are considerably reduced by control variables (e.g. from 50% to 20% for labour productivity). Although their analysis is on the plant level, they include auxiliary plants, thus reducing the problem of undercounting non-production workers on the establishment level. This has implications for labour productivity or skill and wage levels.

De Backer (2002) on a study of MNEs in Belgium, after controlling for a number of standard variables, explains the large productivity gaps by scale and technical efficiency. Being able to single out the Belgian MNEs and FO MNEs, his findings show a greater similarity between these two groups than to uni-national Belgium firms.

Also, FO firms and DO firms may make different use of public infrastructure (including the institutional environment, national systems of innovation etc.). The particular configuration of firm-specific advantages and location advantages may be superior for FO firms, since they invest and divest plants continuously in different environments abroad. Thus, their distribution of plants across locations could reflect a better match than that of uni-national firms. This is clearly related to the next explanation.

An additional source of productivity gaps has been identified by the literature concerning acquisitions, namely that FO firms may be particularly good at “picking the winner”, frequently also termed as “cherry pickers” (Oulton, 1998a, b). The “restricted matching hypothesis”<sup>v</sup> (e.g. McGuckin and Nguyen, 1995), i.e. that firms with above average productivity are taken over, finds support in many studies. Yet, it is difficult to establish cause and effect and in most cases it is not clear, whether DO firms or FO firms or both are involved. An exception is evidence provided by Moden (1998), who reports that it is primarily high productivity firms which are acquired by FO firms in Sweden. Moden (1998) studies post-acquisition productivity focusing on foreign acquisitions in Sweden. He finds that while foreign acquisitions have increased labour productivity, the development of total factor productivity is more uncertain which he attributes to time effects. Such results are interpreted in the light of the “restricted matching hypothesis”, yet seem largely to depend on firm size and on the initial productivity level.

Furthermore, parent country distribution matters. Is the gap correlated with the parent country, as pointed out already in “The Future of the Multinational Enterprise”? Davies and Lyons (1997) conclude that the productivity gap between FO and DO firms is correlated with the

overall international productivity differential between parent country and host country. Such reasoning is in line with the technology gap theory of international trade, which argues that "the international composition of trade flows is primarily explained by the pattern of technological lags and leads." (Dosi and Soete 1983, p. 219) For example, Oulton (1998a) emphasises an *additional* productivity advantage of US affiliates in the UK of 9-20%. In contrast, Globerman et al. (1994) find no significant difference between parent countries. Such results may also derive from a different mix of activities of affiliates from adjacent or far-away parent countries, which affects the costs of control and transport and thus what is produced. Belak and Pfaffermayr (2002), based on 700 establishments, find a superior performance of FO firms in Austria in all indicators used (sales, employment, productivity and capital intensity). They also report that DO and FO MNEs are similar (see also Gugler, 1998) and against their expectation there is no home country effect with respect to German investments in Austria.

Yet, in some cases FO affiliates may also perform worse than DO ones in terms of productivity. This might be the case in screw-driver factories, which employ low-skilled workers, pay below-average wage levels etc. The lower skill-intensity of Japanese green-field investments in the U.S., as reported e.g. by Blonigen and Slaughter (1999), is a recent example for the latter case.

Overall, the evidence on productivity gaps strongly points to the importance of factors related to the multinationality of firms, as the gaps between domestic and foreign MNEs are smaller than between uni-national firms and MNEs.

### 5.3. Growth Gaps

Does the larger size of FO firms also suggest that FO firms grow faster than DO? Gibrat's law is certainly worth considering, since firm size has been established as an explanatory factor with respect to several gaps. Two conflicting hypotheses have been put forward, one on slower and the other on higher growth rates of FO firms.

Blonigen and Tomlin (1999, 2001) provide an argument for *slower* growth rates of FO firms in the case of first entry into a market, because of uncertainties in foreign markets like inefficiencies or problems in obtaining material inputs. Inefficiencies may arise from monitoring problems of workers or other factors. Another factor behind a slower growth of FO firms could be their lower capital intensity, for example if they start as small plants.

On the other hand, there are also powerful arguments for *higher* growth rates of FO firms. Because growth is related to learning, the type of FDI becomes potentially important: It is hypothesised that it makes a difference whether an investing firm acquires a certain stock of know-how instantaneously (acquisition) and has to adapt it or whether this has to be built up from scratch (greenfield), not reaping benefits of path-dependence.

As in other cases, empirical studies reveal that plant size and plant growth are not independent. *Growth* and *size* gaps are explicitly studied by Kumar (1984), Blonigen and Tomlin (1999, 2001) and Oulton (1998a). An explicit study on plant growth has been put forward by Blonigen and Tomlin (1999, 2001), who compare size and growth of Japanese plants in the U.S. They search for evidence on Gibrat's Law and ask whether size and growth of FO and DO establishments in the U.S. are similar. Since firm growth is also related to firm age, they control (in addition to other variables) for age. Furthermore, related to the above argument, they distinguish between acquisitions and green-field FDI. They clearly reject Gibrat's Law, since smaller plants grow faster than larger ones. Their findings also reveal substantial learning effects and effects of earlier investments on the likelihood of future investments.

Howenstine and Zeile (1992) provide descriptive evidence on plant-scale gaps, maintaining that FO establishments tend to be larger, on average, than U.S.-owned establishments. The

scale effect may also be responsible for a large portion of the above described skill and capital intensity of FO establishments compared to U.S.-establishments, as these gaps are related to size. From a sample of 1,752 establishments, which existed over 1973-93, Oulton (1998a) concludes that the gap of the annual average growth rate of U.S.-owned establishments in the UK was 1.82 percentage points compared to UK-owned establishments during 1973-93. Also, value-added and capital per employee showed higher growth rates. Oulton reports considerable differences between U.S. owned and FO establishments from other home countries in the UK.

#### 5.4. Profitability Gaps

Several studies on the *profitability gap* (e.g. Mataloni, 2000 and his review of earlier literature; Kumar, 1990; Kumar, 1984; Ylä-Anttila and Ali-Yrkkö, 1997) have found substantial differences between the profitability of FO firms and DO firms, reflected by a gap in the rates of return. It should be emphasised that profitability is one plant level characteristic where FO firms generally perform worse than DO firms. Some explanations for higher (acquisitions, firm-size, market share, productivity, age) and lower (greenfield, age, internal funds) profitability are discussed in the following paragraphs.

In general, profitability gaps between firms can be referred to accounting factors, to managerial explanations and to economic factors. Among the *accounting* factors, the motivation of MNEs to minimise their tax burden may be responsible for an inferior profitability performance of affiliates. Among the *economic* factors, the higher capital intensity, which is a primary force behind an increase in labour productivity, may lead to *higher* profit margins.

If opportunity costs of internally generated funds are lower than that of externally generated funds, managers will accept a *lower* profitability when they use re-invested profits. In addition, the higher capital intensity may make the firm accept *lower* profitability abroad, in case the FO firms have lower costs of capital at home. The more global the financial markets are and the lower the barriers to sourcing funds abroad, the smaller will be the interest differentials and the easier will be access to capital also for DO firms. Moreover, connected to firm size, market share has been identified to be a major positively related explanatory variable of profitability.

There is a direct link to productivity gaps as Driffield and Munday (1998, p. 706) posit that profitability decreases, if upward pressure in wages is not accompanied by productivity increases. If foreign acquisitions are focused on more profitable firms, profitability gaps are not due to ownership but a "selection bias". Freund and Djankov (2000) analyse such questions with respect to Korea for the post liberalisation period when foreign entry was allowed for the first time in 1998. On the contrary, Little (1981), on the basis of foreign takeovers of 78 publicly-owned firms during 1979-80 in the U.S. concludes that foreigners are purchasing "companies across a broad spectrum of financial health" and emphasise the large industry variation.

The role of age as a determinant of profitability is twofold. On the one hand, young affiliates of FO firms entering a new market may have to be cross-subsidised by their parent for some time. Such FO firms may have high start-up and restructuring costs. Blonigen and Tomlin (1999, 2001) maintain that newly acquired firms normally have a higher debt burden which is responsible for a *low* profitability. On the other hand, established affiliates which reap profits, may motivate the firm to use transfer pricing to shift profits. This depends very much on the characteristics of the market, as profits are generally declining in mature industries.

Again, the type of entry (i.e. acquisition vs. greenfield) could exert a different impact on profitability at least in the short run. To our knowledge, no such evidence has been produced comparing FO firms and DO firms. Matalony (2000) studies the lower performance of greenfield investors vs. acquirers in the case of FDI in the U.S. With company-level data, Mataloni

finds that only a small portion of the gap can be explained by an industry effect (12%), while market share and age effects (i.e. market power and newness) are significantly correlated with the profitability gap. A paper by Kumar (1990) examines the determinants of profit margins of affiliates of MNEs and local firms in 43 Indian manufacturing industries. Here, FO firms have higher profit margins than DO firms, which is explained by greater protection from entry-barriers of MNEs and a persistent knowledge advantage of MNEs (i.e. firm-specific advantages). Contrary to such results, comparing purely DO UK-firms and UK-firms with FDI, Kumar (1984) shows, that the degree of overseas operations has no strong influence on profitability or growth of the parent firm, which would be a possible cause of a superior performance of DO firms, which are MNEs.

To some extent the mixed results are most likely explained by different data quality and availability. Rent shifting by MNEs is again referred to in the policy section (7.) below.

### *5.5. Technology Gaps*

Fors (1997) reports on the substantial intra-firm transfer of technology from affiliates to their parent companies and vice versa, which may be one cause of R&D-related gaps. Also, the idea that R&D-spending might be reduced in the course of a foreign acquisition has been put forward by several authors, because the R&D-department may be moved to the new headquarter abroad or seized altogether. Other things equal, this would lead to hypothesise a lower R&D-spending of FO firms. The division of R&D-activities between parents and affiliates has been frequently described as basic research being pursued in the former and applied research or adaptation in the latter, which also may lead to gaps in R&D-expenditure between DO and FO firms.

Howenstine and Zeile (1992) find a mild correlation between R&D, measured by employees in R&D or R&D-sales ratio, and the share of employment accounted for by all FO firms across 45 industries in the US. Moden (1998) does not find any correlation between R&D activity and foreign take-overs, foreign ownership is reported to be largest in R&D-intensive industries.

## **6. Related Literature**

Performance comparisons can be linked to three strands of literature.

(a) Spillovers from FO to DO firms: Spillovers occur, if one group of firms (here: the FO firms) has some “superior asset” over another group of firms (here: the DO firms), the latter benefiting through learning, adaptation, worker mobility etc. from the former. Evidence on the existence and magnitude of spillovers (e.g. Blomström and Kokko, 1998) suggests that if they are significant at all, their size is rather small. Some studies (e.g. Aitken and Harrison, 1999) reveal positive spillovers within the foreign sector and negative ones to the domestic sector. (See also Zhan et al. 2002, who reveal an overall positive net effect, despite important negative, i.e. crowding-out, effects.) Interesting evidence on spillovers is provided by Girma et al. (2001), who show that DO firms in the UK are not gaining from the presence of FO firms as there is only a weak link between the growth of FDI and productivity growth. Again, controlling for industry, size and a number of other factors reduces the ownership effect in many cases.

Aitken et al. (1996, p. 363) discuss the relationship between spillovers and gaps (see also Blomström and Sjöholm, 1999). The larger the former, the lower should be the dispersion of the performance. Haddad and Harrison (1993, p. 53) find that FO firms have higher levels of productivity, but their rate of productivity growth is lower than for DO firms. Rather than suggesting a catch-up process, they conclude that DO firms do not have higher productivity growth in sectors with a larger foreign presence (see also Aitken et al., 1997). The size of the

gaps is thus one determinant for the likelihood of spillovers to occur between FO and DO firms (see e.g. Driffield and Taylor, 1999; Girma et al., 2001; Hubert and Pain, 2001).

To date, it is not known, whether negative spillovers are a major source or the results of performance gaps, yet this is certainly worth exploring.

(b) Effect of ownership change: The literature on mergers and acquisitions are closely related to the issue of performance differences between DO and FO firms. Two approaches are used: One is the disciplining effect of a take-over on the management, whereby the take-over is stimulated by decreasing share prices. Favourable post-acquisition performance raises the value of the firm (see also Girma and Görg, 1994). The substantial transaction costs incurred in a take-over may, however, limit efficiency gains.

The other approach is to view take-overs as a result of managerial decisions for growth of the firm with efficiency considerations often being of a secondary nature. Support of the efficiency view is provided by a careful study of the effects of takeover and merger activity on firm employment in the UK (Conyon et al. 2002a). Efficiency effects stem from a reduction of labour and are size related.

Another question related to ownership change is, whether high-productivity properties are more likely to be overtaken and how they perform after acquisition. McGuckin and Nguyen (1995) show that high-productivity plants (in the U.S. food industry) are indeed more likely to be taken over and that their growth performance tends to be better compared to plants without ownership change. A clear drawback of most of the studies is that they do not differentiate between domestic and foreign acquisitions. Notable exceptions are recent studies on the UK (Conyon et al. 2002b) and Ireland (Girma and Görg, 1994). In the UK, acquired firms improve their efficiency while growth of unskilled labour declined in the short term in Ireland.

(c) Effect of foreign entry on the market structure: Contrary to the literature reviewed under (a), here the gap is not related to some superior asset of the FO MNE, but is a result of the effect of a FO entrant on the market structure. Entry affects the “rules of the game” (type of competition) and may have a direct impact on the conduct and performance of established firms. The type of entry is important for the costs incurred, since a green-field investment enjoys all the advantages of a newcomer, i.e. it has the advantage of the choice of the optimum location, the implementation of the state-of-the-art technology and the choice of the optimum plant size. Established firms, on the other hand, may be located in marginal locations; may not follow regional shifts of markets or production etc. Whether entry is more likely in sectors where incumbents are weak firms or whether high entry-barriers stimulate entry is a matter of debate. Foreign entry has been found to exert effects on indigenous firms in various industries, measured by indicators like profits (e.g. Driffield and Munday, 1998), productivity (e.g. Baldwin and Gorecki, 1991), excess capacity, growth (Mata and Portugal, 2000), employment (McGuckin et al., 1995) or market share (Baldwin, 1995).

Görg and Strobl (2002a) study the Irish manufacturing sector and find a positive effect of the presence of multinational companies on indigenous *entry*. This is due to the presence of foreign MNEs in the same industry as well as the presence of foreign MNEs in downstream industries. *Exit* and survival of firms have also been dealt with in the empirical literature, first with respect to a comparison between DO and FO firms and secondly, with respect to the effect of a foreign acquisition of a domestic plant. A paper by Görg and Strobl (2002b) finds that the risk of exiting is higher in FO than in DO firms in Ireland. Also for Ireland, Girma and Görg (1994) report that acquired Irish firms are more likely to exit, which might be due to the selection process (entry strategy) of FO firms.

## 7. How Does It Matter?

This subsection raises the question, how performance gaps matter for policy intervention. To this end four effects of inward FDI are outlined in brief and it is explained how they relate to performance gaps. Of central interest is the question how to prevent negative effects and how to stimulate positive effects (direct and indirect). Some empirical evidence on positive and negative externalities of inward FDI as well as on the promotion of FDI is presented. A few sources of government failure in promoting inward FDI are discussed. Finally, conclusions about the usefulness of a discrimination of firms by ownership for gap-closing policies are drawn.

Competition among governments for MNEs is partly based on the belief in positive effects of inward FDI and many investment incentives are justified by such argument. How are economic effects of inward FDI related to performance gaps?

(a) Spillover effects and linkage effects: Spillovers may take the form of positive or negative externalities arising from inward FDI (Blomström and Kokko, 1998; Blomström, 2002). They may emerge as intra-firm or within-industry, as inter-firm or across-industry spillovers (Hubert and Pain, 2001) and may derive from any forward or backward linkages between domestic and foreign firms. As has been emphasized in the previous section, there seems to be a close relationship between the *size* of the performance gap and the likelihood that performance gaps translate into spillovers. In other words, spillovers “depend crucially on the conditions for local firms” (Blomström, 2002, p. 177).

Small gaps may typically arise in an industrialised country setting with high intra-industry FDI, where indigenous and investing firms from abroad have achieved a certain managerial and technical level. In such cases, spillovers may even tend to flow from domestic to foreign firms, yet will generally be small.

If gaps are of *medium* size, benefits derived from FO firms are likely to be high in terms of technology spillovers (Girma et al., 2001; Castellani and Zanfei, 2002). A large absorptive capacity (see Cohen and Levinthal, 1990) of DO firms is a decisive factor.

If gaps are very *large*, such externalities arise to a small extent. Developing countries, which often lack absorptive capacity will have to reach some threshold of their indigenous sector in order to reap such benefits. As Driffield and Taylor (1999) state, in such a case it is likely that domestic firms are unable to assimilate new technologies and therefore, spillovers are unlikely to occur. Even more, local firms may be damaged by the presence of foreign firms (Girma et al. 2001, p. 131).

If spillovers depend positively on foreign ownership, industries with a higher share of foreign MNEs should benefit most, while "national / local industries" would lose out with the danger of the emergence of a dual economy. If ownership does not matter, spillovers are possible in all sectors and a rise in the foreign share would not automatically guarantee positive indirect effects.

Within a policy context there are four other points relevant:

- Empirically, positive spillovers are hardly found or are at least quite small.
- The notion of positive spillovers is based on the idea that FDI leads to growth in the host country. Yet, as e.g. Freund and Djankov (2000, p. 4) argue on the basis of foreign takeovers in Korea "growth induces FDI". Thus, reverse causality has to be taken into account here, since gaps tend to be small. See also Benfratello and Sembenelli (2002) on the issue of causality.
- The local nature of spillovers (see also the next point on agglomeration) has been frequently emphasised (see e.g.; Blomström and Sjöholm 1999: "local participation matters") and may limit the influence of policy decisions on location decisions of MNEs. (Hanson, 2001)
- The net effect of positive and negative spillovers is difficult to calculate and therefore optimal subsidies are difficult to determine. (See, e.g. the comment on Doms and Jensen, by Head, 1998.)

(b) Agglomeration economies: Agglomeration economies *inter alia* comprise labour market effects, localised spillovers (see (a)) and supplier network advantages. If foreign ownership determines the agglomeration effects they would arise even without the participation of DO firms and thus may limit inter-firm spillovers to indigenous firms. In contrast, if it does not matter, whether DO or FO firms agglomerate, FO firms would contribute just the same firm-specific advantages as DO firms.

Market forces may lead to an additional externality, if local concentration of firms attracts new foreign entry (e.g. Head, Ries and Ruckman, 1998 on Japanese affiliates in the US). Also, Mayer and Mucchielli (1998) find spatial and temporal agglomeration of Japanese affiliates. Therefore, if agglomeration effects are of a limited geographical range as is suggested by the local nature of spillovers, performance gaps between regionally closely located firms should diminish quicker than between distant firms in the host country.

(c) Competition effects: An important question for competition policy is how the effects of foreign entry on DO firms (Lichtenberg and Siegel, 1987; see also subsection 6 above) are related to the size of the gaps. Society may benefit from intensified competition. Yet, do entrants stimulate competition or do they, by takeovers, contribute to highly concentrated or oligopolistic markets? Do MNEs through the creation of linkages, have a positive effect on domestic entry or do they crowd-out domestic firms? For example, Driffield and Munday (1998) find that foreign entry leads to a profit squeeze in the domestic sector.

Here again, the size of the performance gap (capacity of DO firms, respectively) matters: Girma et al. (2001) suggest that firms with inferior performance may be driven out of the industry, while firms with low technology gaps relative to the technological leaders can indirectly benefit from the presence of foreign firms regardless of other characteristics in the sector. (p. 131)

(d) Effects on policy-making and of locational competition: The larger the gaps, the more governments tend to rely on foreign firms to solve their competitiveness problems. The paradox situation arises that the larger the gaps, the lesser the chance to succeed on a regional or national level. Policy makers typically assume that performance gaps are due to foreign ownership. Therefore they engage in "locational tournaments" and tend to subsidise inward FDI heavily. This creates high opportunity costs compared to subsidising growth industries at home. Yet, as Oman (2000, p. 119ff) argues "evidence also fails to support the hypothesis that more intense policy competition for FDI tends to increase the aggregate supply of FDI. ... However, the causal relationship almost certainly has worked in the opposite direction, i.e. the significant growth of FDI has spurred competition among governments that want to be sure to attract "their share" of that FDI while its growth lasts."

*Rent-seeking* behaviour of MNEs, knowing that through their superior performance they are attractive to governments, might "bid away most of the benefits after subtracting the cost of the incentive package." (Head, 1998) Playing-off one government against another one, creates a prisoner's dilemma situation and incentives will be the higher, the more governments expect from MNEs. Such negative effects have been shown, e.g. by Haaland and Wooton (1999) theoretically, namely that subsidy competition transfers much of the rents to the multinationals and there is also ample empirical evidence (e.g. quoted in Hanson, 2001; Loewendahl, 2001; OECD, 2001; UNCTAD, 1996; see below).

In addition, *rent extraction* by transfer pricing may seriously reduce public gains of host countries. Yet, the possibility to extract rents depends crucially on the generation of rents from economic activity, i.e. profitability. That foreign-owned firms are often less profitable despite their superior performance in economic terms, points to such rent-shifting activity rather than to inferior profitability.

However, there is also a more optimistic view, as Oman (2000, p. 116) convincingly argues: Instead of a detrimental race to the bottom, which would not contribute to closing

gaps, a positive-sum game with the convergence of and upward pressure on location advantages provided by local governments might result.

Empirical evidence on such positive and negative externalities of inward FDI is growing, yet the results are mixed and generally point to small magnitudes of the externalities.

Empirical evidence on effects of investment promotion is much less systematic and this policy area lacks transparency, involving a high degree of ad hoc “political” decisions. Three important, but not necessarily representative areas are given here:

- Upon a study of subsidies of three cases of large FDI, Hanson (2001) concludes that in two cases the actual (or counterfactual) absence of fiscal subsidies did (would) not seriously affect the host countries’ welfare negatively. What Hanson’s study demonstrates, is that a case by case evaluation is necessary and general conclusions are hardly applicable.
- Very carefully calculated evidence on the tax burden of US affiliates in Europe (Altshuler et al., 1998) hints at a race to the bottom (or at least downwards) over time. Such evidence on actual tax levels is still scarce and reported tax levels tend to deviate substantially from statutory tax levels.
- Fiscal incentives granted on a project basis are presented in Table 1 for several sectors, in which locational competition plays a larger role than in other sectors. Some of these cases are included in Hanson (2001).

**Table 1. Estimated incentives for automotive, electronics, chemicals and semiconductor FDI projects, 1980-2000**

Date of package	Country of project	Investor	Amount per job (US \$)	New jobs/investment
<i>Automotive - USA</i>				
1980	Unites States	Honda	4,000	-
Early 1980s	Unites States	Nissan	17,000	-
Mid-1980s	Unites States	Mazda-Ford	14,000	-
Mid-1980s	Unites States	GM Saturn	27,000	-
Mid-1980s	Unites States	Mitsubishi-Chrysler	35,000	-
Mid-1980s	Unites States	Toyota	50,000	3,000 jobs
Mid-1980s	Unites States	Fuji-Isuzu	51,000	
1993	Unites States	Mercedes Benz	170,000	1,500 jobs/US\$300m
1994	Unites States	BMW	79,000	1,900 jobs/US\$800m
1997	Unites States	DaimlerChrysler	100,000	3,500 jobs/US\$750m
1998	Unites States	Toyota	69,000	2,300 jobs/US\$1.2bn
1999	Unites States	General Motors	60,000	3,800 jobs/US\$500m
2000	Unites States	Honda	105,000	1,500 jobs/US\$400m
<i>Automotive - Other</i>				
1985	United Kingdom	Nissan	54,000	2,700 jobs
1992	Portugal	Ford-Volkswagen	265,000	1,900 jobs/US\$484m
1993	Hungary	GM	300,000	213 jobs/US\$64m
1995	Brazil	Volkswagen	54,000-94,000	-
1996	Brazil	Renault	133,000	-

1996	Brazil	Mercedes-Benz	340,000	-
1997	Germany	Volkswagen	180,000	-
1997	India	Ford	420,000	-
1998	United Kingdom	Ford	138,000	500 jobs
	Electronics, chemicals and semiconductors			
1993	United States	Intel	120,000	2,400 jobs
1994	United Kingdom	Samsung	30,000	3,000 jobs/US\$89m
1995	United Kingdom	Siemens	51,000-190,000	1,500 jobs/US\$1.1bn
1996	United Kingdom	Hyundai	190,000	-
1996	United Kingdom	LG	48,000	6,100 jobs/US\$320m
1996	Israel	Intel	300,000	2,000 jobs/US\$1.8bn
1996	Germany	Dow	3400,000	2,000 jobs/US\$6.8bn
1997	United States	Shintech	500,000	250 jobs/US\$125m
1998	United Kingdom	IMR	63,400	50 jobs/US\$3.17m
1998	United Kingdom	Dupont	201,000	100 jobs/US\$128m
2000*	Canada	Mosel Vitelic	450,000	1,500 jobs/US\$1.5bn
2000*	Israel	Intel	350,000	2,000 jobs/US\$2bn

\*Planned.

Quelle: Loewendahl 2001, p. 108-109

Besides these inefficiencies, common sources of *government failure* in the promotion of inward FDI include

- Generally, the role of foreignness has been overstated compared to the influence of other (structural) factors.
- Proposed measures have been too crudely introduced mainly in the form of overbidding of the "deepest pockets". A lack of *ex post* evaluation hinders improvement. (See also Fosfuri and Motta, 1999: "... it is not clear that such policies would be easy to implement correctly.")
- Empirical results based on questionable or weak methodological evidence may have led to misguided policy advice. One major issue is the aforementioned question of "reverse causality" between FDI and growth.
- Recent empirical evidence based on sound methodology is mixed and idiosyncratic and only partly justifies government intervention at all. It rather creates a high degree of uncertainty of what should be implemented.
- Negative effects of foreign presence, though established in various studies, have too often been deliberately neglected by governments.
- The local nature of some of the effects may limit the possibility to close these gaps by policy intervention.
- Incentives have a marginal impact on location decisions of firms (Wells and Wint, 2002).

The foregoing discussion casts doubt on the usefulness of a discrimination of firms by ownership for gap-closing policies, rather it points to structural and firm-specific characteristics as the relevant variables. Therefore, knowledge of the explanatory factors of the performance gaps is of vital importance for the design of appropriate policy measures, which would go beyond the scope of this paper.

Similar conclusions are reached in the literature on spillovers, summarised e.g., by Blomström (2002, p. 178): "The use of investment incentives focusing exclusively on foreign firms, *although motivated in some cases from a theoretical point of view*, is not a recommended strategy." (emphasis added)

Yet, given the existence of various types of government failure and the fact that MNEs carry these structural characteristics to a considerable extent, it might be a second-best strategy under certain conditions to promote inward FDI. While such a policy largely neglects domestic firms, it might lower the risk *in praxi* compared to a scenario of using more complex decision criteria. A good deal of the effects will depend on whether firms are "stickers" (long-run establishments; see also Sumner, 1999) or "snatchers" (short-run establishments; McAleese and Counahan, 1979). Barry et al. (1999) discuss similar issues with respect to Ireland. Also, increasing the degree of internationalisation of DO firms has been proposed in order to induce more investments in firm-specific assets.

There are three important limitations, which should be emphasised: First, most governments are not in a position to choose among foreign MNEs willing to invest within their jurisdiction. Second, mixed empirical evidence on positive externalities as well as the possibility of negative externalities may limit the positive benefits believed to be generated by increasing inward FDI. Third, the view taken here is of a partial nature and a broader assessment of the effects of FDI would be necessary to arrive at more valid policy recommendations.

## **8. Concluding Remarks and Future Directions**

This paper surveyed performance differences between DO and FO firms. The theoretical argument is based on the idea that FO firms enjoy an advantage over their domestic counterparts in the host country, which is "supplied" by their parent company at low cost. The

fact that empirical evidence is still scarce is mainly due to the requirements in terms of data availability, which are only met by very few data-sets. Nevertheless, new empirical evidence emerging allows a much more differentiated assessment today than in the past.

Few studies reveal superior performance of DO firms<sup>vi</sup> and only some report substantial gaps between DO and FO firms *related to ownership*. In most cases, however, performance gaps “disappear” after controlling for firm and industry characteristics, as they, but not foreign ownership, account for most of the variation (“*structural effect*” or “*industry composition effect*”<sup>vii</sup>). Besides size and industry distribution the most important explanatory variables are firm-specific advantages, differences in technologies used and different types of activities (implying different factor intensities). A majority of studies reveal performance gaps between FO firms by different parent countries. Section 4 emphasised that the gaps clearly depend on the level of analysis (plant, firm etc.) as different explanatory factors gain importance (e.g. age).

If gaps are persistent even after controlling for firm and industry characteristics, the multinationality of the firms (i.e. the international multi-plant firm, Pfaffermayer, 1999) is more important than foreign ownership *per se*. Thus, the gaps arise between uni-national and multi-national firms, be they FO or not. In line with such argument, empirical studies comparing DO MNEs and FO affiliates mostly report negligible performance differences, yet superior performance compared to uni-national firms. This suggests the possibility of intra-firm spillovers between plants as well as inter-firm spillovers between FO firms and DO firms and has been termed the “*ownership effect*”.

This may have theoretical implications regarding our view of firm-specific advantages. They may have to be reconsidered by giving more weight to gains from multinationality *per se* (internalisation advantages, transfer and organisation of firm-specific assets within the firm and strategic behaviour), regardless whether a firm is DO or FO.

Lastly, questions not dealt with in the literature include *inter alia*:

- Convergence or divergence of FO and DO sectors? (exception: Aitken et al., 1996 on wage differentials)
- How to include the services sector? (exception: Oulton, 1998b)
- What is the impact of high-tech vs. low-tech characteristics of industries in both, process and product technology, on gaps?
- Are FO firms less responsive to entry barriers than DO or are FO firms even attracted to industries where gaps are due to high entry barriers?
- How large is the effect of different firm-growth rates on market share and profitability of firms and societal gains of countries?

The macro-economic changes and the subsequent organisational responses of firms during the last 25 years have proven that the type of performance comparison set out in “The Future of the Multinational Enterprise” was indeed far looking. Progress in the theoretical arguments and in empirical evidence since then has produced a much more differentiated and variegated picture, starting from the sound basis set up in Peter Buckley’s and Mark Casson’s book 25 years ago.

### **Acknowledgements**

The author would like to thank participants of the Assistentenseminar and at a seminar at the WIIW as well as two anonymous referees for helpful comments and suggestions. The usual disclaimer applies.

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## Notes

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<sup>i</sup> We exclude aspects whether this is desirable politically, as a higher level of foreign ownership may reduce national sovereignty of the host country .

<sup>ii</sup> While most theoretical and empirical evidence suggests that FO firms perform better in almost every field there are also some general and specific arguments of why FO firms might perform worse (see e.g. Harris and Robinson, 2001, p. 8; Li and Guisinger, 1991):

- because of a time-lag of assimilating new plants into their FDI network
- because they acquire lemons but fail to improve these plants
- learning costs
- management problems
- nature and type of activity
- life cycle arguments.

<sup>iii</sup> Whether the firm-specific advantage just compensates or over-compensates the disadvantage, is not discussed in the literature. Yet, the latter would be a necessary condition for performance gaps.

<sup>iv</sup> This might also be an indication for the well-known fact that firm-specific advantages are more similar at the industry level across countries than across firms in different industries within a country. This should lead to smaller performance gaps between firms of the same industry across countries than within countries across industries. This hypothesis has not yet been tested empirically.

<sup>v</sup> The restricted matching hypothesis originates from labour market studies. The matching theory of ownership change suggests that some owners have comparative advantages in owning certain types of firms. Thus, as firms are constantly evaluating the match between plant and parent, this may lead to ownership change (sell-off, take-over).

<sup>vi</sup> The only gap where most studies report inferior performance of FO firms is in fact „profitability“. Yet, this may indicate a measurement problem, if firms use transfer pricing to lower profits artificially.

<sup>vii</sup> I.e., the intra-industry variation is larger than the inter-industry variation.