Can Globalisation and Global Localisation Explain Foreign Direct Investment? Japanese Firms in Europe

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ABSTRACT This paper uses logit regression on the responses of 383 Japanese manufacturing firms located in the member countries of the European Union to investigate the motives for foreign direct investment. Japan External Trade Organisation (JETRO) data, as published in their 8th Annual Survey (October 1992) classified by industry, were used. The results confirm that decisions leading to FDI cannot be explained by a single factor and, furthermore, different types of FDI are influenced by different combinations of motives.

Key words: Globalisation; Foreign direct investment; Internationalisation; European Union.

JEL classification: F21.

1. Introduction

The main objective of this paper is to explore the underlying reasons for Japanese manufacturing foreign direct investment (MFDI) in the European Union (EU). The paper is divided into six sections. In the second section, there is a literature review of FDI which is followed by a review of the empirical literature in section 3. Section 4 contains a brief discussion on the data and analytical method used. In the fifth section the empirical results are presented and discussed. The paper ends with concluding remarks.

First, consider a few stylised facts about the Japanese presence in the EU. The number of Japanese firms in the EU rose from 177 at the end of 1983, to 727 by the end of 1995 and reached 825 as of the end of 1997. This means that on average, 46 companies were annually added during the previous 14 years (JETRO, 1996: 37, 1998: 3). While there appears to have been a rush to set up bases in the EU from

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189 to 1991, between January 1992 and December 1996 there was little increase (721 firms against 738). However, 87 new companies were set up in the EU during 1997 alone. The distribution of these bases among the European host countries has changed too. For instance, in 1983, only 34 of the 177 Japanese firms in the EU were located in the UK; by the end of 1997, the UK share increased to 247 or nearly 30% (JETRO, 1998, 1997). The annual growth rate of the number of firms in Europe reached its peak in 1989 (26.3% on the previous year) and has declined ever since, reaching its lowest value by the end of 1997 (only 2.4%). As to the value of foreign direct investment (FDI), the picture is rather different. The peak was reached in 1989 when the total value of Japanese FDI in Europe was nearly $15 billion. At the other extreme, in 1997, the total FDI was less than $5 billion.

Japanese non-manufacturing FDI has declined much more than the manufacturing FDI. Table 1 confirms that the Japanese companies preferred to invest in Asia, and it remains to be seen if the collapse of these economies will permanently change the patterns of Japanese FDI. On average during the period 1989–97, manufacturing FDI in Europe represented about 5% of Japanese global FDI and less than 30% of total Japanese FDI in Europe.

2. Theories of Foreign Direct Investment: A Brief Review

Two inter-related aspects of FDI have been the subject of much academic debate in the past three decades:

(i) Why do firms invest abroad?
(ii) Which location will be chosen and why?

Table 1. Japanese FDI (outflows) in US$ million

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* Covering the first six months.
Despite extensive debate and research, there is no generally accepted answer to either of these questions. It is true that there have been many changes in the past 30 years (Dunning, 1998), but FDI as a mode of foreign market servicing is not a post Second World War phenomenon. There is evidence of FDI in the 19th century (or even earlier). What is new is the extent and growth of FDI in the past three decades. The main explanations are now briefly reviewed.

Pull and Push Theories

For decades, the underlying reasons for FDI were perceived to have been a mixture of two forces working in opposite directions: push (low rate of return at home) and pull factors (higher rate of return abroad). Both the Leninist theory of imperialism (Lenin, 1970) and the neo-classical factor endowment hypothesis suggested a falling rate of profit or low rate of returns at home, owing to the diminishing marginal returns to capital (Sodersten, 1988; Kreinin, 1995) as the main motive for FDI (export of capital). On the one hand, the home economy is seen as capital rich with near full employment, hence facing a low rate of return to capital and relatively high wages. The host country, on the other hand, is capital poor, so offering a relatively high rate of return. It is this combination that is behind the decisions to establish production bases overseas.

One needs to distinguish between import-substitution FDI and FDI as an instrument for transforming a location into an export-platform. While the latter may be compatible with push and pull models, the former seems to be at odds with it. However, in the case of FDI in the EU the situation may be more complicated. A firm investing in one of the EU member states may be hoping to penetrate the markets of other member states, in addition to serving the market of the host country. In short, we may be dealing with a combination of import-substitution and export-platform motives for these investments in the EU.

In addition to differences in factor endowments, motives may also include:

- to explore new markets;
- to acquire new technologies;
- to overcome tariff and other protective restrictions;
- to localise production to enhance efficiency of servicing a foreign market;
- market as well as product diversification in order to reduce risk;
- to be able to combat the threat of rivals in the international market place.

It follows that given the diversity of potential motives for FDI, no single theory will cover all the characteristics of this process. Additionally, models of profit maximisation in competitive markets may be inappropriate. Market imperfections apply to both goods and factors markets and, furthermore, may be the result of government policies or caused by the presence of different kinds of economies of scale. It may be true that the desire to increase profits plays an important role in FDI too (Kreinin, 1995: 227), but this higher profit may be earned in an uncertain environment under imperfect market conditions. Humes (1993: 29) introduced a regional dimension to FDI stressing a potential link between regional trade and FDI, pointing to the fact that most FDI in Mexico, for instance, was undertaken by the US multinationals while Japanese firms enjoyed a similar position in the East Asian economies.
The Internalisation Approach

Operating in a foreign location may well entail certain additional costs in comparison with a local firm. It follows that if such an operation is to prove profitable, the incoming multinational firm must have advantages not shared by its local rivals. It is also essential that these advantages are specific to the foreign firm, and are easily transferable within the firm and across borders.

Since foreign market servicing is not limited to FDI, the existence of specific advantages will not necessarily lead to FDI. A combination of firm-specific advantages and location-specific advantages will be needed to explain FDI in preference to exporting or licensing. Yet location specific advantages, while necessary, may not be sufficient to lead to FDI either.

The internalisation approach includes a number of efficiency-reducing problems associated with market transactions. Broadly speaking, uncertainty generated by such transactions increases costs and reduces profitability. The two prime sources of these extra costs are market-related imperfections including consumer and producer’s search costs, buyer’s uncertainty, and government-induced distortions, such as government regulations. In order to reduce these costs, the global firms may try to internalise these transactions by conducting them within their own hierarchy. Internalisation processes may create a problem of transfer pricing and of how to motivate different divisions or affiliates of the same firm, but it will remove price uncertainty and reduce different kinds of search costs. The use of foreign bases in place of transactions through markets enables firms to co-ordinate their activities more efficiently and more effectively and benefit from economies of scope and scale.

Insider–Outsider Theory of FDI

 Concurrent with the further development of European integration, there has been a massive rise in FDI in the EU. According to the insider–outsider model, firms are believed to have invested in the late 1980s in order to be ready for ‘1992’, i.e. when a European single market was to have become a reality. This is based on the assertion that given the discriminatory nature of the economic integration process, firms finding themselves inside the EU will be treated differently compared with firms who have stayed outside the union. Concern has been expressed about ‘forced FDI’, a development that is alleged to increase misallocation of resources in the global economy. It is asserted that European locations have activated a pull factor not necessarily because those locations offer higher returns – a measure in line with the factor endowment hypothesis – but by administratively manipulating location specific advantages. Instead the EU imposed certain conditions, effectively forcing these insider firms to localise value added activities if they are to escape common external tariffs.

Market Power

According to Hymer (1975), FDI could be seen as an instrument to enhance market power already enjoyed by firms in the domestic markets. Firms are assumed to have specific advantages that give them dominant positions in the domestic markets, but as competition increases or they reach a near-saturation point at home, these firms use FDI to erect entry barriers, reduce competition at the global level in their endeavour to maintain or even increase profitability. This model does not rule
out the possibility of collusion among these firms. Hymer's model postulates that the specific advantages enjoyed by these firms enable them to overcome the extra costs and uncertainty associated with overseas operations.

**Exchange of Threat**

FDI can also be seen to be a reaction by one firm to the activities of other firms in the international market. This model relies heavily on the notion of interdependence associated with oligopolistic market structure. In view of this interdependence, oligopolistic firms are conscious of each other's action in the market place and respond to them appropriately to preserve their respective market shares (Graham, 1978). With regard to FDI and the behaviour of multinational firms, it is suggested that these firms often respond to their rival's action by going abroad in order not to be left behind. In contrast to Hymer's market power model, in the 'exchange of threat' approach, the main motive appears to be to maintain the *status quo* by not allowing rivals to increase their market shares.

**Product Life Cycle**

Vernon (1966, 1971) developed a dynamic stage-based approach to FDI to explain the behaviour of US large corporations. It is argued that multinational firms create technologically superior products and methods of production because they allocate more resources to R&D. This is attributed to a combination of relatively higher labour costs favouring capital intensive production, and higher living standards, leading to a demand for better quality products and more variety in the market place. Competition among rival firms leads to a constant drive for invention and innovation. Initially the innovative firm enjoys a near monopoly position in the market, but gradually, as a result of standardisation of the product, this monopoly power is eroded. One implication of this is that increased competition and the availability of a greater variety of products increases the price elasticity of demand, hence imposing effective constraints on revenue maximisation through price. The firm's response in such a situation, in order to minimise costs, is to review location, initially within the home market and eventually overseas. At this point, the product life-cycle model joins up with the traditional factor endowment model. Multinational firms may decide to set up overseas bases as a defensive strategy to maintain their market share both at home as well as in the foreign markets. As far as the home market is concerned, in order to survive the growing domestic competition the firm could use the location-specific advantages of foreign bases. In the foreign markets three possibilities may be exploited.

1. **The existence of a PLC model relying on the notion of a technology-gap**: a product that may have become standardised in one market may still possess certain attributes for a technologically less sophisticated economy.
2. **The starting point in the internationalisation process**: growth of the export market could lead to government-induced distortions, e.g. tariffs and other protective measures. This may in turn lead to import substitution FDI by the foreign firms, especially if the foreign market is sufficiently large, e.g. American post-1945 FDI in Europe. Furthermore, even on occasions where protectionism is not present, efficient and effective servicing of foreign markets, e.g. providing after-sale services, and spare parts, may turn the balance in favour of FDI.
Foreign locations offer lower costs of production: the severe competition at home may persuade multinational firms to undertake measures to transform these locations into export platform. The prime motive may be to supply the home markets as well as the rest of the world; e.g. US FDI in the Asian tiger economies may come under this category.

Eclectic Paradigm

The eclectic paradigm of Dunning (1993) captures some of the most important of the possible motives for FDI. Broadly speaking, Dunning asserts that the eclectic paradigm sets out a generalised framework for explaining the level and pattern of the cross-border value-added activities of firms. According to this paradigm, at any given point of time, the stock of foreign assets, owned and controlled by MNEs is determined by:

- the extent and nature of the ownership specific or competitive advantages of MNEs vis-à-vis those of the host nations;
- the extent and nature of location bound endowments and markets offered by host countries to the MNEs to create or add further value to these competitive advantages;
- the extent to which the market for these advantages, including those which arise from multinationality per se, are best internalised by the MNE itself, rather than marketed directly to the firms in the host economies; and
- dynamic ‘add-on’: the extent to which technology, broadly defined, will influence the activities of the MNEs. What matters here is the extent and form of innovative activities and the direction that these activities may take.

Critical Comments on the Theories of FDI

It is evident from this brief review that push and pull theories will in effect impose certain limitations on the choice of location of these investments. Following either of these approaches, the investing firms will have to invest in economies where factor endowments or the concentration of production are different and, furthermore, the new location will have to be well endowed in inputs that are short in supply at home.

This said, it is also worth mentioning that the internalisation school has its own critics who assert that this approach ignores other possible motives that global firms may have in setting up overseas bases. To put it differently, it is a modern version of the push and pull model whereby decisions leading to FDI are driven by the difference between prices and costs.

Despite the apparent attraction of the insider–outsider model, its explanatory power leaves a lot to be desired. While this model may seem relevant in explaining Japanese FDI in the EU as a whole, it does not explain why one location within the EU is preferred to another. Why do the Japanese firms, for example, invest in the UK, rather than investing in Portugal or Greece where production costs are likely to be lower, but offering the same privileged position of being inside the EU?

The factor endowment theory and market power model’s explanatory power are greatly reduced when we allow for cross FDI. Under cross FDI, the distinction between home and host markets as two separate entities disappear. A particular location, the UK, for example, can act as a major investor, while at the same time
acts as a major recipient of nearly 40% of FDI coming into the EU. If UK multinational firms invest overseas because domestic competition is too severe, or because they possess firm-specific advantages, why do the Japanese, Korean and American firms invest in the UK and seem to have been quite successful too? The growing penetration of these markets by foreign firms seems to indicate that Hymer may have exaggerated the severity of domestic competition as a plausible explanation for the globalisation of production.

Last but not least, while there may be some evidence indicating that multinational firms follow the exchange of threat approach, its main shortcoming is its weakness in explaining the first move that is the basis for generating responses by other firms.

3. A Review of the Empirical Literature

Results of empirical studies on the major determinants of FDI point in several, sometimes contradictory, directions.

The positive impact of the market size, a demand side factor, in the new location of FDI has been confirmed by several scholars (Friedman et al., 1992; Woodward, 1992; Coughlin et al., 1991; Kim and Lyn, 1988; Yu and Ito, 1988; Wang and Swain, 1995; Veugelers, 1991; Terpstra and Yu, 1988). Nevertheless, Culem (1988), examining the US foreign direct investment in the EU, found that the market size had no significant effect on capital flows, but unit labour cost was found to be crucial (see also Wheeler and Mody, 1992). By contrast, Scaperlanda and Mauer (1969) found that market size was a significant determinant of FDI, and trade barriers and the growth rate of markets were not. Lunn (1980) found that in addition to market size, trade barriers and growth rate were major determinants of FDI, a point confirmed by Scaperlanda and Balough (1983). Other studies suggest the importance of labour costs (Lansbury et al., 1996; Hatzius, 1997; Mudambi, 1995; Wheeler and Mody, 1992). Among others, Friedman et al. (1992) found the wage rate to be insignificant but not the local unemployment rate. Coughlin et al. (1991) came to the same conclusion and Kravis and Lipsy (1982) found labour costs to have no effect on FDI (see also Mardas and Versakelis, 1996).

A further issue examined in the literature is the impact of the tax rate. One would expect that high corporation tax would deter firms from investment. Veugelers (1991) finds evidence on the effect of corporation tax rate is mixed; Mudambi (1995) reported a negative and statistically significant relationship between tax rate and FDI. However, several other studies (Friedman et al., 1992; Coughlin et al., 1991; Wheeler and Mody, 1992), found corporation tax rate had no effect on capital flows.

Similar mixed results are reported for the influence of factors associated with the so-called 'location tournaments', i.e. policy adjustment, promotional campaign and incentive programmes designed to attract FDI. Veugelers (1991) found incentives to be ineffective and similar results were reported by Woodward (1992). Yet according to Friedman et al. (1992), Coughlin et al. (1991) and Woodward and Rolfe (1993), such promotion was influential. Brewer (1993) produced a more complex picture of the impact of government policies on FDI, showing that much depends on the type of FDI and on the location. In a number of other studies, where incentives were not directly examined, the results shed doubt on the effectiveness of incentive programmes. Several scholars found that the stock of FDI exerts a statistically
significant influence on the location decision (Terpstra and Yu, 1988; Mudambi, 1995; Davidson, 1980; Benito and Gripsrud, 1992). The results of these studies may have serious implications for the location tournaments hypothesis. If the stock of FDI is a major determinant of capital flows, this could mean that locational advantages once gained will be self-perpetuating, i.e. there will be no need for continued promotions and incentive programmes. To put it differently, the possibility of gaining irreversible locational advantages resides in agglomeration economies, i.e. increasing benefits to co-location by multinational firms. The greater the number of multinational firms in a given location, the finer and more efficient will be labour division in intermediate input markets. Regional groupings of specialised service supplies could potentially lower unit costs for final producers. It is also shown that whatever the motives for FDI, a multinational firm’s decision to invest in a location can enhance its attractiveness for other investors (Wheeler and Mody, 1992; Markusen, 1990, cited in Wheeler and Mody, 1992).

In addition to the size of the market, there is evidence suggesting that the size of the firm may also exert significant influence on location (Terpstra and Yu, 1988; Yu and Ito, 1988). This may be in line with the popular belief that FDI is undertaken by large and resourceful MNEs. Nevertheless, it has been shown elsewhere (Chen and Chen, 1998) that FDI by small- and medium-sized firms is rapidly rising, especially by the MNEs from developing countries, and their motives could very well be fundamentally different from the motives of other multinational firms. They have shown that the prime motive for small- and medium-sized Taiwanese firms to undertake FDI seems to be network linkages. According to this view, a firm invests in joint ventures primarily in those industries where they have a relative disadvantage in terms of R&D (Kogut and Chang, 1991; Chen and Chen 1998). Neven and Siotis (1993) extended this assertion to include Japanese FDI in the EU.

Earlier studies (Kindleberger, 1965) suggested that international flows of capital between the two areas were determined essentially by differences in the term structure of interest rates. Others paid more attention to the home market structure as a possible explanation for capital flows. Balassa (1966, cited in Ragazzi, 1973) argued that oligopolistic firms may be induced to invest abroad as their efforts to increase domestic market shares would meet retaliation from other oligopolistic rivals (see also, Hymer, 1975; Yu and Ito, 1988; Terpstra and Yu, 1988; Graham 1978). Hymer and Rowthorn (1970), examining FDI by the US multinationals, concluded that rather than increasing market shares, the motive seems to have been the higher rate of economic growth in Europe (as compared with the US). Aliber (1970) stressed the desire to avoid exchange risk as a determinant of direct investment. Aristotelous and Fountas (1996) support Aliber’s hypothesis whereas Mudambi (1995) showed that country specific risk (including exchange rate risk) had no significant impact on FDI flows.

Using panel data, Lansbury et al. (1996) studied the flows of FDI in Central Europe and found that low labour cost and trade links between the home and host nations were both statistically significant. The latter motive is particularly important, as it seems to lend support to the view that the whole issue of foreign market servicing may in fact be an evolutionary process, starting from export, then developing into other modes. Labour market flexibility is confirmed as the main motive for inward FDI (Elitis and Higham, 1995) but it was also shown that such flexibility may lend a hand to ‘delocation’, i.e. deinvestment as the formalities and cost of laying off workers will be less (Ferner, 1998).
Several scholars studied the ‘openness’ of the host economy as a possible motive inducing FDI. Not surprising, empirical evidence is mixed. It is claimed that openness will encourage FDI (Kravis and Lipsey, 1982), but, 10 years later, Wheeler and Mody (1992) concluded that if it had any impact, its effect will be negative. In addition to other cost considerations, Wang and Swain (1995) found that FDI flows would be negatively influenced by the cost of capital.

Concerning this review, two points should be made.

(1) Variables found to be statistically significant as a potential motive for FDI would also determine a firm’s investment’s function. For instance, statistical significance for ‘market size’ as a determinant of FDI leans towards favouring the principle of acceleration for the investment function.

(2) To address the difficulty of data deficiency, there is no option but to use proxy variables. However, while there may be no technical objection to a widespread use of proxy variables, in some cases, this practice is very doubtful. For instance, using average tariff rates as a proxy for trade barriers or not-tariff barriers (Scaperlanda and Balough, 1983) seem unlikely to produce a satisfactory result. Its significance or rejection will not necessarily mean trade barriers are or are not significant. The same applies where exchange rates are used as proxies for labour costs (Aristotelous and Fountas, 1996).

Looking more specifically at the underlying reasons for the surge of Japan’s FDI in the EU in the 1980s, a number of factors have been suggested.

(1) **Asset price inflation in Japan.** During the latter half of the 1980s, land and stock prices in Japan skyrocketed. While this massive increase in asset prices lowered the rate of returns of real estate investment in Japan, it enabled them to finance investment at a significantly lower cost than their foreign rivals. The lower rate of returns in Japan, made real estate investment abroad relatively more attractive.

(2) **Appreciation of the yen (Steven, 1991).** In the second half of the 1980s, following the Plaza Accord, the yen appreciated greatly against most of the major currencies, especially the US dollar. Even when the wage increase at home could be controlled, the appreciation of the yen tended to reduce the international competitiveness of Japanese MNEs. This appreciation seems to have accelerated the timing of cost-oriented FDI by the Japanese firms abroad. It is important, however, not to exaggerate the impact of the appreciation of the yen on Japanese FDI. Most of the Japanese FDI appear to be market-oriented into the Western industrialised economies rather than being directed towards the developing and newly industrialised economies of Asia or Latin America (Yoshitomi et al., 1993). Nevertheless, more recently, there appears to have been a change in the direction of Japanese FDI, moving away from the EU into the Asian emerging economies and to a lesser degree into Latin America.

(3) **Trade friction (Morris, 1991; Reid, 1991).** The growing trade friction with the USA and the fear of Fortress Europe seems to have stimulated Japanese FDI in these two regions (Heitger and Stehn, 1990). Import quotas, anti-dumping duties and voluntary export restrictions (VERs) have also at times, and with different degrees of severity, been imposed against importation from Japan. In order to circumvent these restrictions and, furthermore, to protect market...
shares, Japanese MNEs appear to have chosen to produce in foreign markets (Yoshitomi et al., 1993). This view, however, is not shared by Norman (1993). In contrast MacKinnon (1990) suggests that the threat of Fortress Europe has largely been responsible for the surge in direct investment into the EC ahead of 1992. Nevertheless, it is true to say that despite the slowdown in FDI growth between 1990 and 1992, the historical trends have been upward. This issue of protectionism in the EU goes much further than the common external tariffs as even the non-European MNEs already present in the EU are subjected to certain local content conditions.

(4) Thomsen (1993) argued against the ‘Fortress Europe’ hypothesis and certain kinds of location-specific advantages, such as government inducements, and put forward a strong case for the appropriateness of PLC. It is suggested that this model provides a compelling rationale for the pattern of Japanese manufacturing investment in the EU (see also Nicolaides and Thomsen, 1991).

Moving from the general to the specific, the picture gets rather blurred. The first two motives, the yen crisis and protectionism, are unlikely to be as important as we are asked to believe. Protectionist policies are unlikely to induce FDI if other conditions, such as market size, are not present. Furthermore, even when trade barriers remain the same or are reduced, an expansion in the size of the market may encourage FDI. The appreciation in the value of the yen that has eroded the cost advantages of Japanese firms may explain why capital wishes to move out of Japan, but the destination of investment cannot be explained by this factor alone. Additionally, if this hypothesis could be confirmed by statistical testing, it still remains to be explained why, for instance, the UK seems to be more attractive to these investors than Spain or Greece. Nicolaides and Thomsen (1991) rejecting protectionism as a motive for Japanese FDI, suggest that anti-dumping duties may have been a response to, rather than the cause of, Japanese FDI in the EU. In their view, the driving force behind Japanese FDI is more likely to be the proximity to the consumer rather than protectionism. This assertion is in line with the final motive in Morris (1991) that is sometimes referred to as a ‘global localisation factor’. That is to say that the Japanese MNEs invest in the EU to be closer to the market where they wish to sell their products. This may be partly due to the fact that competition is increasingly time-based, as Robins (1989) emphasises, and being closer to the market cuts response time to rivals’ activities and to changes in consumer’s preferences.

Our contention is that this seemingly confusing empirical record can be explained if we start from a position that decisions leading to FDI are influenced by a multiplicity of factors. Our main concern here is to show that no single factor will be sufficient to explain a decision-making process leading to FDI. In this paper, therefore, the major determinants of Japanese MFDI in the EU are estimated from a logit equation relating the decision to invest to 18 different motives. Furthermore, many of these motives will be interrelated, manifesting themselves in underlying latent variables, which may provide a simpler structure to the understanding of FDI.

4. Data and Analytical Method

For the purpose of our investigation, cross-sectional survey data for 1992 were collected from Japanese firms stationed in the EU member states. A questionnaire
together with a fact sheet was sent to 721 Japanese companies. A total of 383 companies completed and returned the questionnaires, and a summary of these responses were published by JETRO in October 1992. In this paper, we use the responses as proxy variables to identify a decision leading to FDI. These companies were asked:

Have your productive capacities been expanded since advancement?

A positive answer to this question, we would argue, would necessarily involve some investment. This approach is not new in attempting to identify what determines the decision to invest in the host location rather than factors affecting the actual volume of FDI (see Yu and Ito, 1988 and Terpstra and Yu, 1988). We have further broken down these answers into two categories:

(1) Extension, modernisation or rationalisation of existing production facilities
(2) Constructing new factories or investing in different areas of business

It is suggested here that the motives for these different types of FDI are different so an attempt will be made to see if there is any empirical support for this assertion. For instance, FDI for the purpose of extending the existing facilities is unlikely to be affected by external economic policy issue, such as tariffs or non-tariff barriers. FDI in a new field may be seen as a response to the commercial policies of the host nation.

As to our independent variables, we have chosen 18 possible motives (see Table 2 for brief definitions). Four principal components were extracted to represent latent variables underlying the decisions relating to FDI.

For estimation purposes, we have taken into account the fact that these were categorical responses to the questions asked. Instead of using the OLS estimator, following Gujarati (1995), we have estimated a logit model, using weighted least squares (WLS).\(^1\) Our model has the following format:

\[
P_i = E(FDI = 1) = \log \frac{P_i}{1-P_i} = \alpha + \sum_{j=1}^{k} \alpha_j X_{ij} (1)
\]

The log-odds ratio \(\{\log [P/(1-P)]\}\) is a linear function of the explanatory variables, which in this case, following our principal component analysis, accommodate four general motives:

(1) global localisation (\textit{globloc});
(2) eclectic factors as suggested by Dunning (1993) (\textit{eclectic});
(3) localisation of research (\textit{locres});
(4) localisation advantages (\textit{local});

where the value of FDI is 1 if a firm has expanded its productive capacity – i.e. undertaken additional investment – in the EU and 0 otherwise. The motives were selected from the response by firms to the following questions:

What were the motives and/or purposes for your advance into Europe?

What were the reasons and/or factors for determining the advance base in Europe?
A. Seyf

From equation (1), allowing \( Z = \alpha_0 + \sum_j X_{ij} \), to simplify the notation, the general functional form of a logistic equation is given as:

\[
F(Z) = \frac{e^z}{1+e^z} = \frac{1}{1+e^{-z}} \tag{2}
\]

Finally, we have

\[
L_i = \alpha_0 + \sum a_j X_{ij} \tag{3}
\]

where \( X_{ij} \) stands for our independent variables. For our study, we can write equation (3) as:

\[
L_i = \alpha_0 + \alpha_1(\text{local}) + \alpha_2(\text{gloloc}) + \alpha_3(\text{eclectic}) + \alpha_4(\text{locres}) + u_1
\]

---

**Table 2. Principal component analysis results**

<table>
<thead>
<tr>
<th>Motives</th>
<th>Loading</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Eclectic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti</td>
<td>0.97</td>
<td>To avoid infringement of anti-dumping regulations.</td>
</tr>
<tr>
<td>Discrim</td>
<td>0.94</td>
<td>To avoid discriminatory quantitative restrictions on Japanese imports.</td>
</tr>
<tr>
<td>EU</td>
<td>0.68</td>
<td>To benefit from the expansion of economic activity resulting from the EU’s market integration.</td>
</tr>
<tr>
<td>Incent1</td>
<td>0.84</td>
<td>There were aggressive invitation from investment promotion or other organisations of the host countries.</td>
</tr>
<tr>
<td>Labcost</td>
<td>0.84</td>
<td>Labour cost is lower.</td>
</tr>
<tr>
<td>Labqual</td>
<td>0.88</td>
<td>Quality of labour in the projected site is better than in other parts of the world.</td>
</tr>
<tr>
<td>Market</td>
<td>0.88</td>
<td>Domestic markets large in size.</td>
</tr>
<tr>
<td>Need</td>
<td>0.83</td>
<td>To meet consumers’ needs.</td>
</tr>
<tr>
<td>Support</td>
<td>0.86</td>
<td>Supporting industries exist for supply of parts and components.</td>
</tr>
</tbody>
</table>

2. Gloloc

| Incent2 | 0.71 | Tax incentives and subsidies are available. |
| Parent  | 0.69 | Treading on the heels of parent companies that have already advanced in Europe. |
| Parts   | 0.97 | To supply parts, components and raw materials to affiliates of Japanese manufacturers operating in Europe. |
| Anti1   | 0.81 | To avoid infringement of anti-dumping regulations on parts and components. |
| Projap  | 0.72 | Pro-Japanese sentiment prevails. |

3. Local

| Procost  | 0.80 | To reduce production cost. |
| Rawcost  | 0.94 | Raw materials can be easily obtained at favourable cost. |

4. Locres

| RD      | 0.68 | To implement design and development operations in Europe. |
| RD1     | 0.95 | To carry out R&D activities in Europe. |
Or:

\[ P_i = E(FDI=1) = \log \frac{P_i}{1-P_i} = L_i = \alpha_0 + \alpha_1 local + \alpha_2 gloloc + \alpha_3 eclectic + \alpha_4 locres \]

A similar equation is estimated for investment in a new field. We expect that the impact of these principal components on these two types of FDI will be different. For instance, while we expect that the component, local, measuring local advantages, to be significant for investment in new fields, its impact on the expansion of existing productive facilities is less obvious. In the case of the latter, we expect the component eclectic, which also has high loading on motives such as market size, EU integration and consumer needs, to be positive and significant.

5. Estimation Results

The results of this principal component logit regression are presented below. As mentioned before, the factor scores obtained from our principal component analysis were used as independent variables in our estimation. The major benefit of using principal component analysis for this type of estimation is its ability to replicate latent variables (Maddala, 1989: 238). Table 3 presents the results for both types of FDI.

The impact of eclectic motives, a mixture of market size (market) and local advantages, low labour cost (labcost) and good labour quality (labqual) is positive and significant on FDI for the expansion of the existing plants. This seems to confirm the results reported by Lansbury et al. (1996) in their study of FDI in Central Europe, though it includes the added qualification that the quality of labour matters too. Here the motives of (market) and (EU), both capturing the effect of potential market size on FDI, seem to confirm the results obtained by Friedman et al. (1992); Woodward (1992); Coughlin et al. (1991); Kim and Lyn (1988); Yu and Ito (1988); Wang and Swain (1995); Veugelers (1991) and Terpstra and Yu (1988). The high loading of (incent1) and (incent 2) on our principal components eclectic and gloloc respectively, and the significant impact of both on FDI in existing plants, may

<table>
<thead>
<tr>
<th>Principal components</th>
<th>FDI in existing plants</th>
<th>FDI in new fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.23 (4.09)</td>
<td>1.34 (20.89)</td>
</tr>
<tr>
<td>Eclectic</td>
<td>0.10* (1.97)</td>
<td>-0.079 (-1.55)</td>
</tr>
<tr>
<td>Gloloc</td>
<td>0.11*** (3.46)</td>
<td>-0.097*** (-3.05)</td>
</tr>
<tr>
<td>Local</td>
<td>0.03 (0.63)</td>
<td>0.13** (2.65)</td>
</tr>
<tr>
<td>Locres</td>
<td>0.08 (0.536)</td>
<td>0.02 (0.161)</td>
</tr>
</tbody>
</table>

***, **, * Statistically significant at 1%, 5% and 10% level. t-statistics in parentheses.
be an indication that ‘the location tournaments’ hypothesis may still be valid, confirming the results reported by Freidman et al. (1992) as well as Woodward and Rolfe (1993). The significant effect of the eclectic component, including the motives (anti) and (discrim), is in line with the results reported by MacKinnon (1990) and Yoshitomi et al. (1993) while casting doubt on the views expressed by Nicolaides and Thomsen (1993) seeing ‘anti-dumping duties’ as a response to, rather than the cause of, Japanese FDI in the EU. In the case of FDI in new fields and new businesses, the component eclectic does not seem to have any significant impact. As we hypothesised, the principal component, local, capturing the effects of non-labour local cost advantages is found to be positive and significant on new FDI, but has no significant impact on FDI for the expansion of the existing plants. Localisation of research does not appear to have been the motive for FDI either in new fields, or in the FDI for the expansion of the existing production facilities, a result that may be in conflict with the findings of other researchers in this field.

The most interesting result is perhaps our finding concerning our principal component capturing the global localisation motives. In both cases, its impact is highly significant. Considering the motives that it captures – four out of five motives summarised in this component are directly related to the activities of Japanese firms already in the EU – it is, thus, not surprising that its effect is positive on FDI to expand the existing plants. Given that this component has significant loading on motives such as incentives and tax concessions and the presence of pro-Japanese sentiment, its negative and yet significant impact on FDI in new fields is difficult to interpret. One possible and interesting explanation could be that this negative impact may be an indication of decisions to divert new FDI to other locations, e.g. South East Asia, in preference to the EU. Our data in Table 1 seem to lend support to this possible explanation.

6. Conclusions
We have postulated that decisions to undertake foreign direct investment may be influenced by a combination of several motives. These motives vary according to the different host locations considered and the different types of FDI being contemplated. To test this assertion, Japanese manufacturing companies in the EU were selected. It should be noted that our data, i.e. which are based on the responses of Japanese manufacturing companies already in the EU, may have introduced a selection bias though this is not unusual for such studies.

This study investigated the location decisions of these firms expanding their existing plants as well as investing in new fields. Our results seem to be broadly in line with empirical results that have been reported by other researchers. As hypothesised, different types of FDI are influenced by different motives. Our research shows that non-labour local cost advantages have a positive and significant impact on FDI in new fields, but not on FDI for the expansion of the existing plants. Decisions to undertake FDI to expand the existing plants were found to be significantly influenced by global localisation motives as well as factors associated with Dunning's eclectic formulation, i.e. a combination of market size, low labour costs and good labour quality. More specifically, the significant influence of labour quality may imply that the low labour costs combined with some measures of productivity – in this case good quality of labour – may be more important than the labour cost on its own.
Furthermore, an examination of the variables with high loading (Table 2) on the principal component `gloloc`, for instance, `parent` (treading on heels of parent company in Europe), and `parts` (to supply parts, components and raw materials to affiliates of Japanese manufacturers operating in Europe), may indicate that there may be some internalisation motives too. Combined with the impact of variable, `anti1` (to avoid infringement of anti-dumping regulations on parts and components) a possible interpretation of the results is that Japanese firms may be trying to bypass arms length transactions through the market. These decisions may, therefore, be interpreted as showing that by undertaking these types of FDI, Japanese manufacturing companies are trying to reduce the transaction costs of their global operations.

Note
1. For estimation purposes, we write Equation (1) as follows:

\[ L_i = \log \left( \frac{P_i}{1-P_i} \right) = \alpha_0 + \sum_{j=1}^{k} \alpha_j X_{ij} + u_i \]

To estimate the model, we need apart from \( X_{ij} \), the value of the logit \( L_i \). If we have data on individual industries, \( P_i = 1 \) if a firm has undertaken FDI to expand its productive capacity and \( P_i = 0 \) if it does not undertake FDI. If we put these values directly into the logit \( L_i \), we obtain:

\[ L_i = \log \left( \frac{1}{0} \right) \]

if FDI is undertaken and

\[ L_i = \log \left( \frac{1}{0} \right) \]

if no FDI had taken place. In such a situation, we cannot estimate our equation by the standard OLS routine. In this case one may have to resort to the maximum likelihood method to estimate the model. We have used relative frequency in each case to estimate the logit. In short:

\[ \hat{P}_i = \frac{n_i}{N_i} \]

where \( N_i \) represents the total number of firms responding and, \( n_i \), stands for the number of firms undertaking FDI. We have used this as an estimate of \( P_i \), and using the estimated \( P_i \), we can obtain the estimated logit as:

\[ P_i = E(FDI=1) = \log \frac{P_i}{1-P_i} = \alpha_0 + \sum_{j=1}^{k} \alpha_j X_{ij} \]

If \( N_i \) is fairly large and if each observation in a given group is distributed independently as a binomial variable, then the disturbance term, \( U_i \), follows the normal distribution with zero mean and variance equal to \( 1/N_i P_i (1-P_i) \). It further follows that here, as in the case of linear probability model, the disturbance term is heteroscedastic. Thus, instead of using OLS we will have to use the weighted least squares (WLS). (For further details see Gujarati, 1995, chapter 16.)

References


